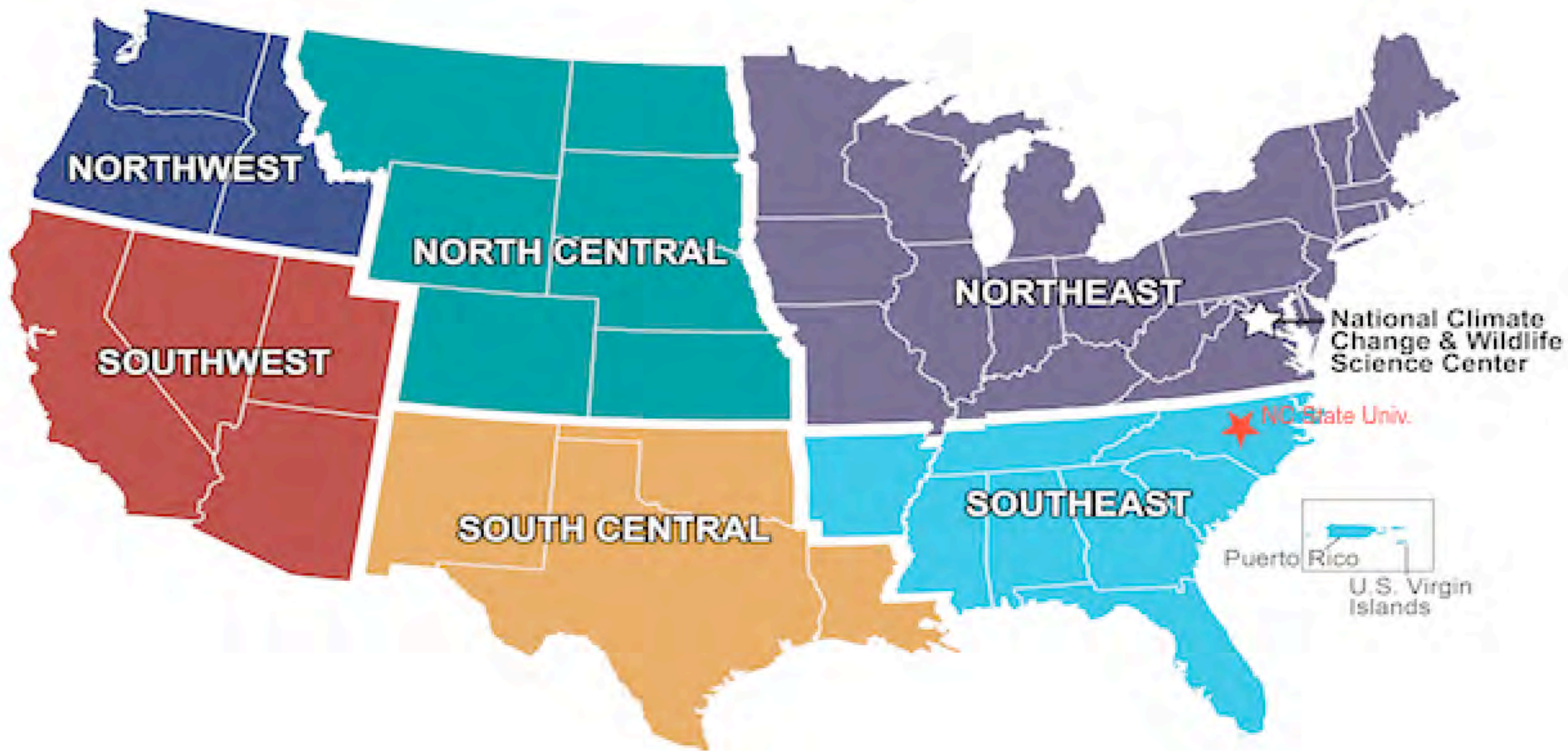


FloridaWCA Workshop
Gainesville
October 2, 2017



NC STATE UNIVERSITY

Aranzazu Lascurain • alascur@ncsu.edu



CSCs work with natural and cultural resource managers to gather the scientific information and build the tools needed to help fish, wildlife and ecosystems adapt to the impacts of climate change.

Sec Order 3289 (March 2009)

Management of natural resources from climate impacts must be informed by science.



Scientist must work with the managers to develop which options most suitable for adapting to climate



Climate adaptation response centers, located at public universities



Actionable science (ideally it's co-produced)



Danger of developing brilliant scientific work to questions no one cares about.

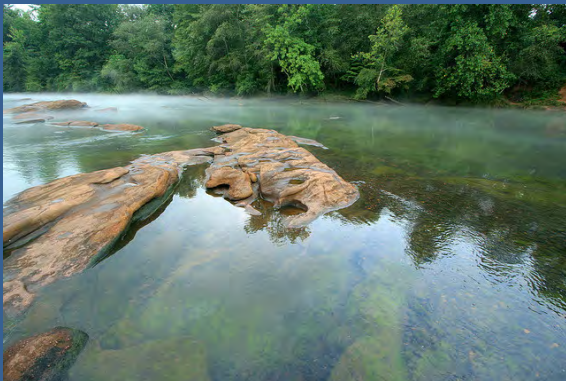
Section 5, Sec Order 3289: American Indians and Alaskan Natives

Tribal values are critical to determining what is to be protected, why, and how to protect the interests of their communities. This Order states that it is imperative that “scientists work in tandem with those managers who are confronting climate change impacts.”

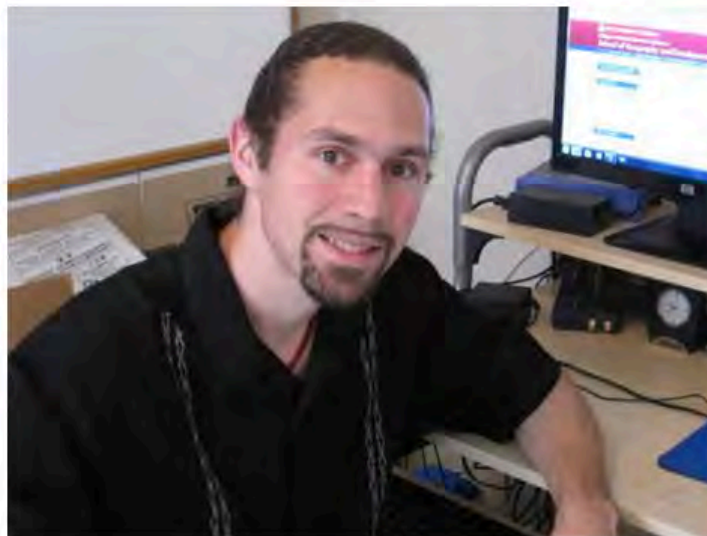
The SE CSC operates to:



- Ensure that its research activities are of maximum benefit to Tribes and others faced with changing management needs as a result of climate change.
- Draw upon traditional ecological knowledge provided by tribal representatives to further inform the understanding of changing climate impacts in the Southeast region



SE CSC Welcomes New Tribal Climate Science Liaison



The Southeast Climate Science Center is pleased to announce the hire of a new staff member, Casey C. Thornbrugh, as the Tribal Climate Science Liaison for the Southeast and Northeast Climate Science Centers.

Casey acts the liaison between Tribes in the Northeast and the Southeast, the United South and Eastern Tribes Inc. (USET), the Bureau of Indian Affairs, and climate science researchers. Based out of the Northeast CSC at UMass-Amherst, he will provide current climate science information to Tribal Nations on the East Coast and in Gulf Coast states, as well as identify climate research needs and priorities, and provide climate adaptation planning support for the Tribes.

Who we are:

Harry Daniels
University Director



[Email](#) | [Research profile](#)
PH: 919-515-4589

Gerard McMahon
USGS Director, SE CSC



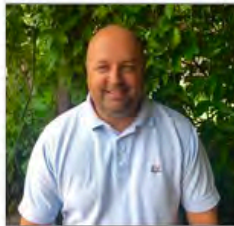
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Ryan Boyles
USGS Deputy Director, SE
CSC



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Jared Bowden
Senior Research Scholar



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Emery Kiefer
Communications Intern



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Simeon Yurek
Ecologist



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Research Ecologist



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Cari Sasser Furiness
Research Associate



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Asst. University Director



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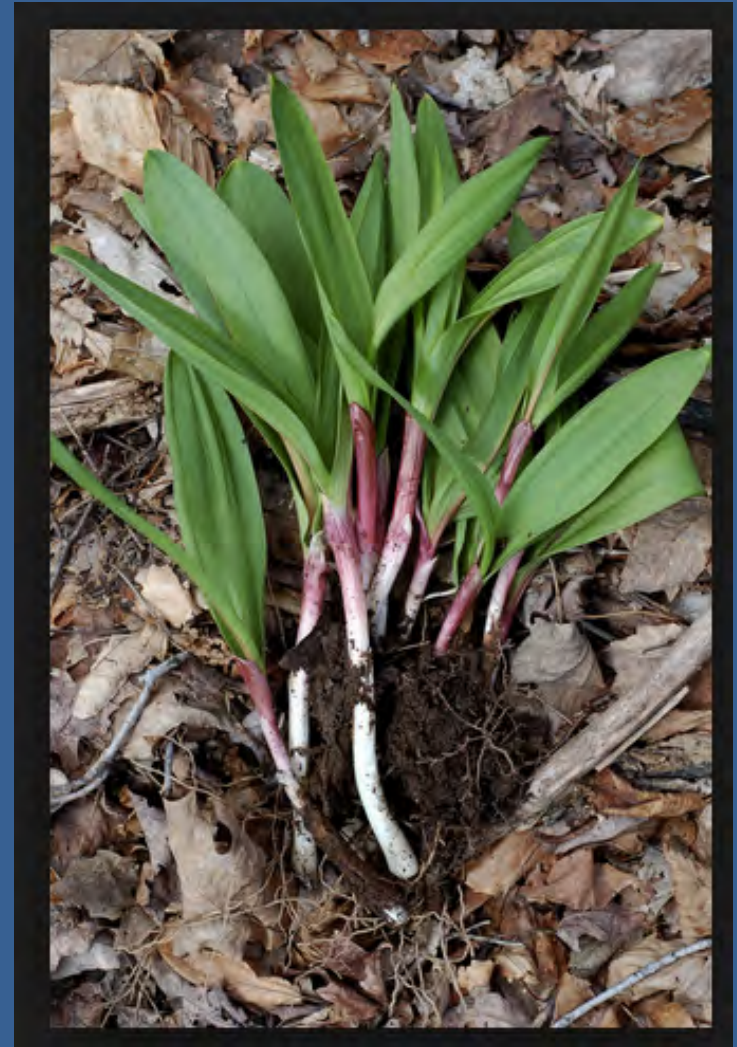
Adam Terando
Research Scientist



[Email](#) | [Research profile](#)
PH: 919-515-4448

Our mission implemented through:

- **Convening conversations**
- **Provide decision-focused, research-based information**
- **Building Capacity**



Ramps



SE CSC *by the* NUMBERS

We cover
11 states and
2 U.S. territories –
that's **22%**
of the U.S. population

Since 2011,
over **30**
projects funded

62
graduate students
trained in climate
and global change

Sample of Research Projects

Foundational Science Area - Impacts



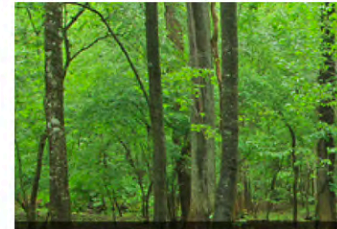
The Vulnerability of Sea Turtle Nesting Beaches to Climate Change in the Southeast



Providing Science for the Conservation of Animals in the Southeastern Longleaf Pine Ecosystem



Consequences of Urbanization & Climate Change on Human & Ecosystem Health



Forests of the Future: Integrated Assessment of Climate Change & Ecosystem Diversity



Climate Change Implications for the Conservation of Amphibians in Tropical Environments



Tree Eaters: Predicting the Response of Herbivores to the Integrated Effects of Urban and Global Change



Impact of Ocean Warming and Acidification on Growth of Reef-building Corals



Ecological Implications of Mangrove Forest Migration in the Southeastern U.S.



Understanding Habitat Connectivity to Inform Conservation Decisions



Assessing Climate-Sensitive Ecosystems in the Southeastern U.S.



Integrating the Effects of Global and Local Climate Change on Wildlife in North America



A Handbook for Resource Managers to Understand and Utilize Sea-Level Rise and Coastal Wetland Models



We help answer questions about adapting to climate change:

- How will sea-level rise affect vulnerability of coastal marshes to storm surges?



- What forest management practices are most effective for increasing drought resilience?



- Where should we expect new turtle nesting sites?



- Evaluating and assessing the relative historical significance and use potential of historic buildings.

What are the impasses?

- Agency mandates still manage for persistence
- Restoration to historic conditions



Having conversations about how to manage for change isn't easy.

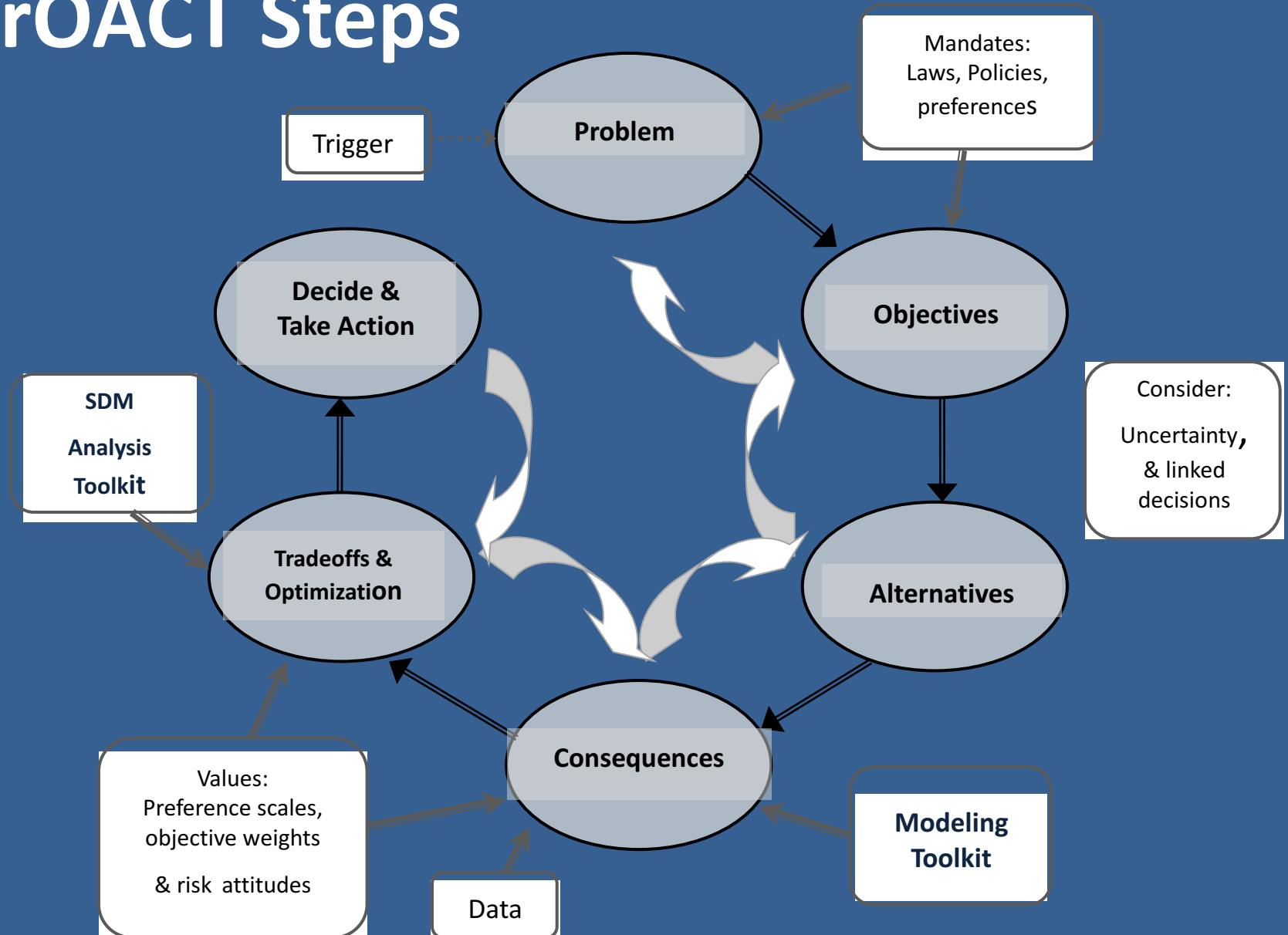


Funding, temporal and spatial scales, and governance jurisdictional challenges, competing values & interests. Climate training.

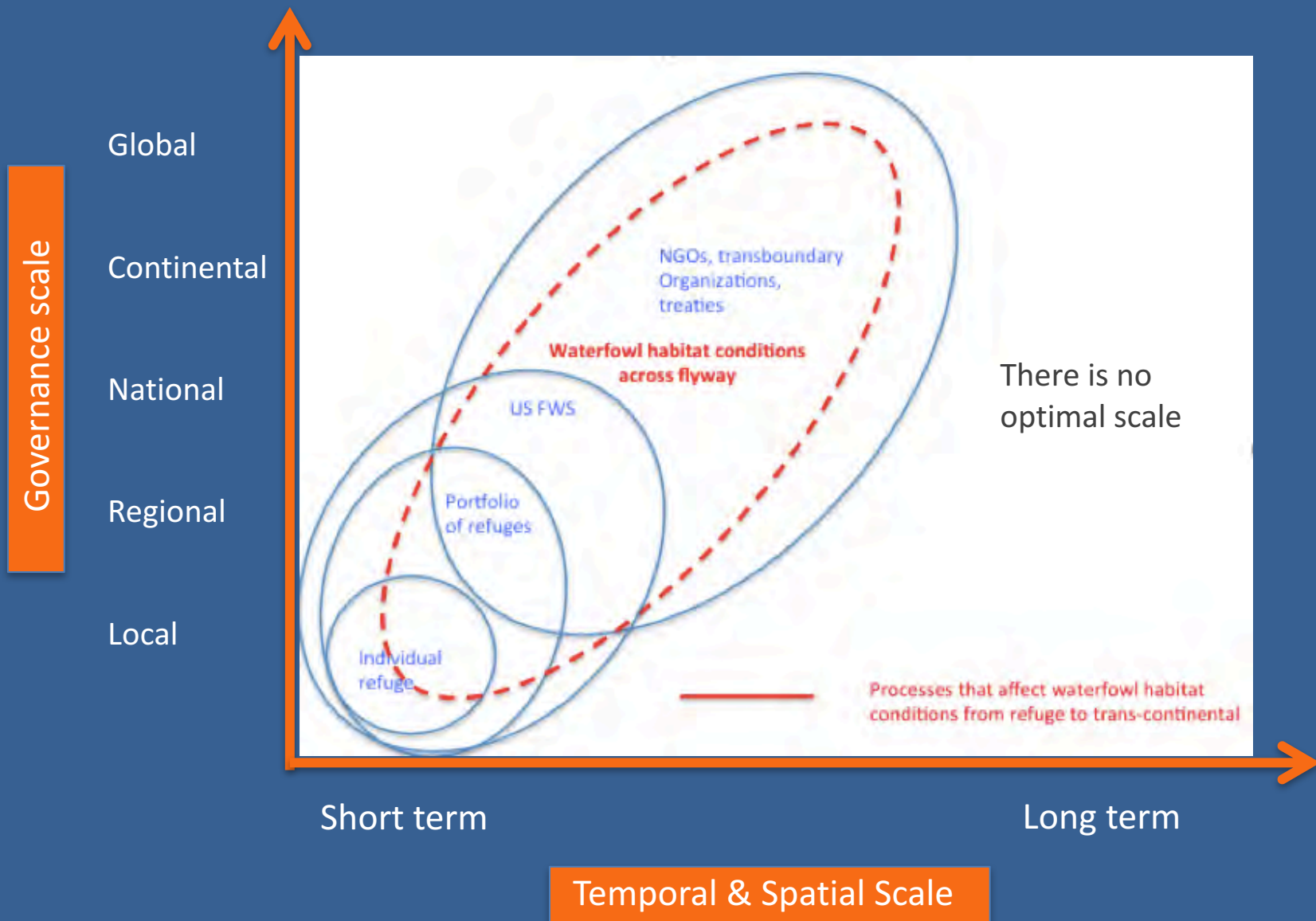


Obtaining and using climate data

PrOACT Steps



The condition of resources are influenced by processes operating at multiple scales



Summary of Cycle 1 2010-2016



U.S. Department of the Interior Southeast Climate Science Center Science and Operational Plan



Open-File Report 2012-1034

U.S. Department of the Interior
U.S. Geological Survey



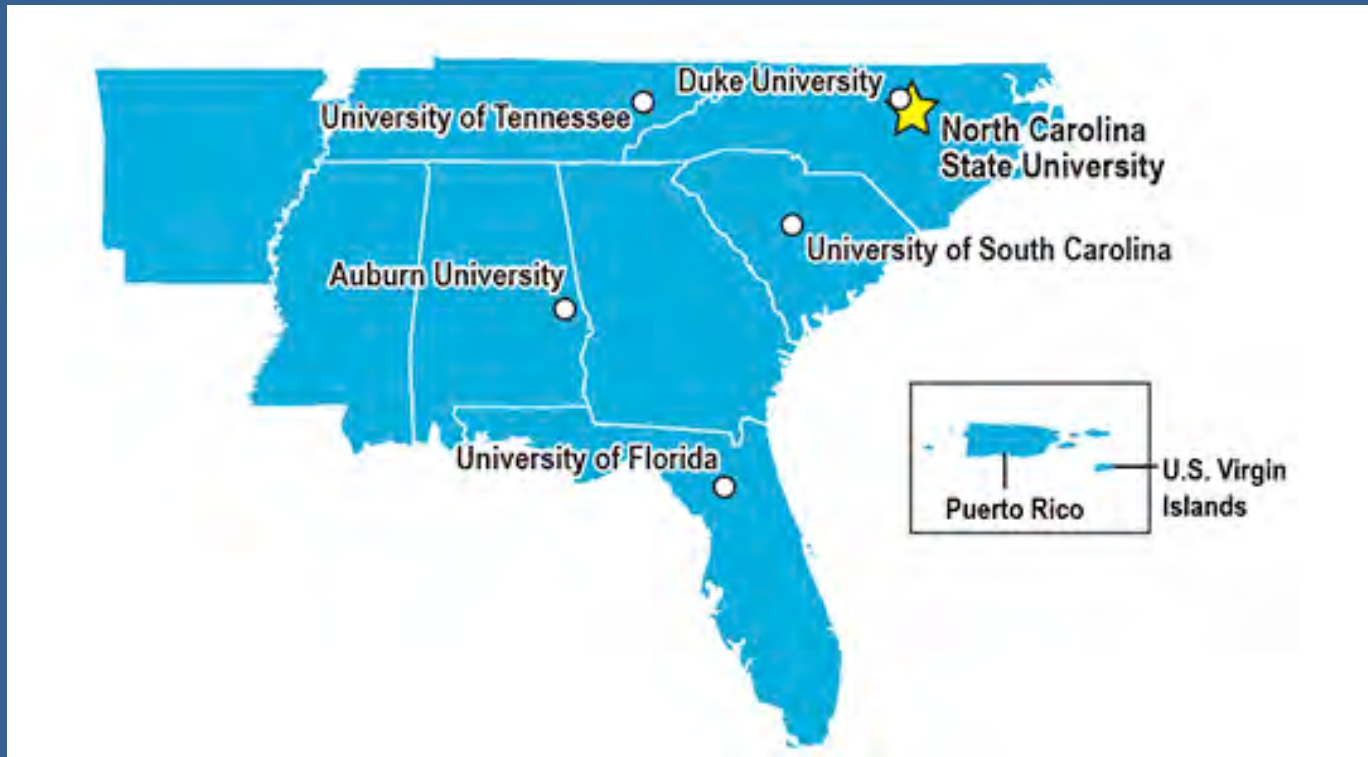
The Department of the Interior Southeast Climate Science Center Synthesis Report, 2011-15: Projects, Products, and Science Priorities



Open-File Report 2016-1133

U.S. Department of the Interior
U.S. Geological Survey

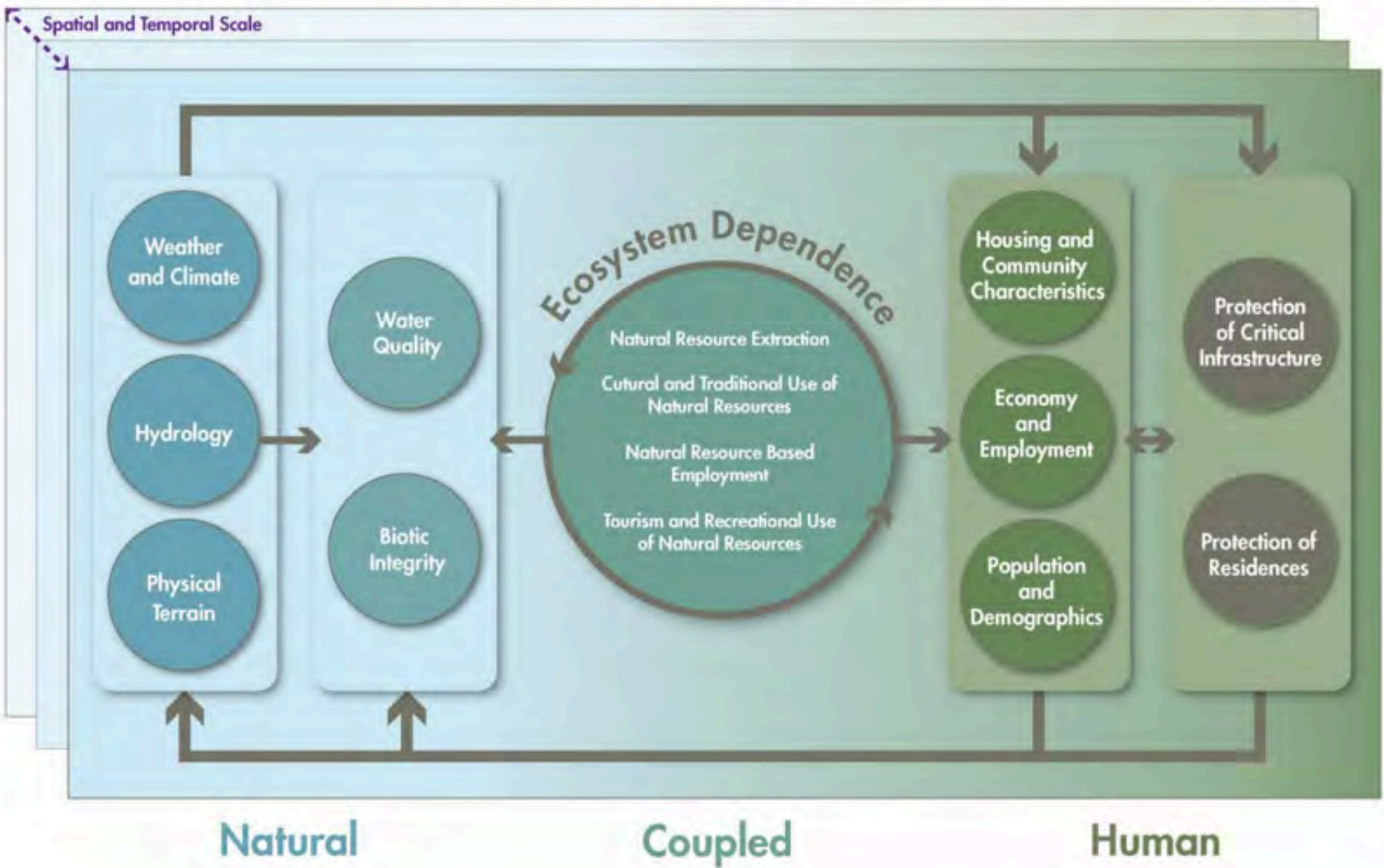
New Consortium Partners for Phase 2



New Areas:

- Ecosystems services
- Cost effective management
- Climate, water, energy nexus
- Water supply in a changing climate

SWAMP: System-Wide Assessment & Monitoring Program



Possible Strategic Themes for Cycle 2

- **Extension Services:** climate science assistance and decision-focused vulnerability assessments
- **Improved understanding of GC processes and impacts important for state and federal partners**
 - Invasive species
 - Protecting cultural resources
 - Impacts to habitat: grasslands, coastal marshes, coral reefs, bottomland hardwoods and cultural plant resources (ramps, canebrakes)
- **Framing climate smart conservation planning, especially in situations where “resistance may be futile.”**
 - Developing & identifying strategies to conserve or foster specific features of biodiversity, ecosystem services and cultural values provided by this diversity

Global Change Fellows Program

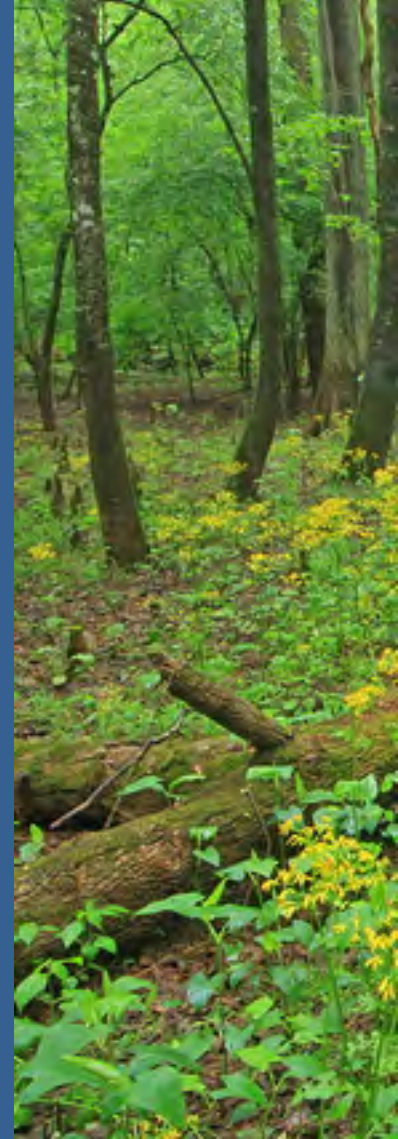


Mission:

To develop and train the next generation of global change scientists. They come together across disciplines to discover, collaborate, and share their knowledge with diverse stakeholders.

Key Components:

- 62 graduate students funded. All fellows intersect with one of our six science themes
- We've funded four cohorts to NCTC for Structured Decision Making (SDM)
 - Some have gone on to train as SDM apprentices for our science funded projects
- 3 credit seminar, *Conservation Biology and Climate Change*





Science video making course.



Growing Community after NCTC



With Congressman, David Price

Science Communication Focus

- Science communication is a strong component of the professional development program
- Climate communication training with Susan Hassol
- Science video has become a focus for past two years. Now a year long experience
- Basic science communication training from AAAS.
- Fellows have started a student organization
- A former fellow has started another student organization, Students for Interdisciplinary Research and Innovation

The professional connections I've made through this fellowship have profoundly changed my experience at NC State. --Global Change Fellow 2016



Thank you!
globalchange.ncsu.edu

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