



:

What is the Southeast Climate Science Center niche and what are FY13/14 priorities given that niche?



Jerry McMahon
TCLR Brownbag
November 8, 2012

SECSC FY12 science funding

- SECSC mission
 - **Climate Science Centers** focus largely on combining climate information with ecological understanding to produce better forecasts of ecosystem response and assist **Landscape Conservation Cooperatives** develop science-based conservation strategies.
- Continuation of FY11 projects
 - \$000; USGS/Coop unit/NC State
 - 450/46/50
- New FY12 projects
 - 260/89/295

FY12 Funded Projects

- Synthesize state of the science

- Regional downscaling of climate predictions

- Synthesis of Climate Model Downscaling Products for the Southeastern United States**

- Ryan P. Boyles, NCSU, September 2013

- Ecohydrology

- Hydrological Modeling for Flow-Ecology Science in the Southeastern United States**

- Jonathan Kennen, USGS NJ Water Science Center, July 2013

- Assessment of Terrestrial and Aquatic Monitoring Programs in the Southeastern US**

- Damian Shea and Cari Furiness, NCSU, September 2014

- SLR

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

- Thomas W. Doyle, USGS National Wetlands Research Center, June 2013

FY12 Funded Projects

- Synthesize state of the science (con't)

- Urban modeling

- Developing Long-Term Urbanization Scenarios for the Caribbean LCC**

- Jaime Collazo, USGS North Carolina Cooperative Fish and Wildlife Research Unit, January 2014

- Climate sensitive ecosystems

- Assessing Climate-Sensitive Ecosystems in the Southeastern United States**

- Jaime Collazo, USGS NC Cooperative Fish and Wildlife and William J. Wolfe, USGS Tennessee Water Science Center, September 2013

- Communicating and using uncertain scientific information

- Communicating and Using Uncertain Scientific Information in the Production of 'Actionable Science'**

- Brian Irwin, USGS Georgia Cooperative Fish and Wildlife Research Unit, June 2013

FY12 Funded Projects

- **Terrestrial connectivity in the SE region**

Connectivity for Climate Change in the Southeastern United States

Nick Haddad, NCSU, Completion: September 2014

- **Impact of mangrove migration on coastal ecosystems**

Ecological Implications of Mangrove Forest Migration in the Southeastern US

Michael Osland, USGS National Wetlands Research Center, September 2014

“Wicked Problems”: planning context for FY13/14 SECSC science funding decisions

- **Urgency**
 - Management actions won't be postponed until scientific uncertainties and values trade-offs are resolved
- **Defining the “problem” and what is at stake is complex.**
 - Many different perceptions of reality; many stakeholders (emotional?); many interests; differing perceptions and tolerances of risk.
 - Mismatch between complex, uncertain problems and common-sense based rules of thumb for making decisions (keep it simple; translate this situation into a familiar framework; bounded rationality)

“Wicked Problems”: planning context for FY13/14 SECSC science funding decisions (con’t)

- **Scientific complexity and uncertainty**
 - Challenging to understand vulnerability and adaptive capacity of complex, interacting systems operating at many scales
- **Is better science the primary issue? ... better technical information alone may not necessarily lead to better decisions**
 - Improving science and technical knowledge no guarantee that the science will be used; SECSC wants to avoid developing great answers to questions that aren’t being asked.
 - The lack of a transparent, well functioning set of institutions to facilitate science-based adaptive management is an ongoing challenge.

At minimum, “science support” should improve the likelihood of accomplishing elements of LCC vision...

- ...to develop and pursue a *common vision* of habitat conservation that can *sustain fish, wildlife, and other natural and cultural resources* across ecosystems *in a way that meets expectations* of the public, the Administration, and the Congress. (Ed Carter)
- Pursue a *modeling* approach that incorporates scenario planning and explicitly *ties projections to specific conservation decisions*. (John Tirpak)
- How to do science that passes the “so what?” test has been a key topic of discussion for the SECSC and the LCCs over the last year.

Two possible FY13/14 SECSC science niches

- **Foster a research science culture**
 - At the extreme the focus is on the scientist and their publishable research.
 - Science products (JA, reports, tables, GIS coverages, etc.) are thrown over the transom to managers.
- **Foster a decision-oriented science culture.**
 - The focus is on the decision-maker and what information they need to make credible, sound, implementable decisions.
 - The process starts with trying to understand the objectives and priorities of those whose decisions shape the SEAFWA functional landscape.
- **The “so what?” of SECSC science**
 - Does the information help decision-makers understand the impacts of climate-related AM options on what is important to them...the work-related decisions they worry about at 3am?

Elements of FY13/14 SECSC science vision

- **SECSC science serves as a catalyst for evolution of a SE-wide institutional capacity**
 - To frame and conduct scientific investigations to support decision-making in a context of global change...
 - ...in a way that fosters a sustainable engagement between scientists, decision-makers and stakeholders...
 - ...and in which governing bodies, scientists, and others whose decision shape the SEAFWA landscape can interact in a way that promotes discourse, transparency, accountability, learning, and shared stewardship

Elements of FY13/14 SECSC draft RFP

- **Projects that support SECAS climate adaptation decisions**
- **Three decision contexts**
 - The application of SDM to an actual decision problem
 - Management action that would not be required in the absence of climate change
 - Planning decision
 - Development of methods or tools of decision analysis
 - Reserve design; Bayes Net meta modeling
 - Infrastructure that supports the development of decision problem awareness
 - SERAP; GIS data

Elements of FY13/14 SECSC draft RFP

- **The application of SDM to an actual decision problem**
 - Water conservation and governance
 - NPS: Timucuan Ecological and Historic Preserve
 - NPS: Post-storm restoration decisions
- **Development of methods or tools to support DA**
 - Reserve design
 - Vulnerability and adaptation to SLR-related hazards (with NECSC?)
- **Infrastructure that supports the development of decision problem awareness**
 - Improved downscaled SE precipitation predictions
 - NPS: Integrating human use information into adaptation decisions
 - Synthesis of SEAFWA-wide wildlife mgt goals and objectives
 - Southeast 2050 conservation atlas



Thank you!

Jerry McMahon
gmcmahon@usgs.gov

NCSU-SECSC training grant

- First two years: OK, but...
- Adopting competitive approach for 13-14 academic year
 - “IGERT”-like
 - 4-5 students/year
 - Guarantee for 2 year CSC support and dissertation support from PI
 - Issues:
 - PhD vs MS
 - Disciplinary make up
 - Requirements of students (and PIs)