



A SUMMARY OF THE SOUTHERN CLIMATE IMPACTS PLANNING PROGRAM (SCIPP)

TEAM OVERVIEW

SCIPP is a joint research program between the University of Oklahoma (OU) and Louisiana State University (LSU) with combined expertise provided through the state climate office of Oklahoma (Oklahoma Climatological Survey - OCS), the state climate office of Louisiana (Louisiana Office of State Climatology), the Southern Regional Climate Center (SRCC) at LSU, the Department of Geography and Anthropology at LSU, the College of Atmospheric and Geographic Sciences at OU, and the National Weather Center at OU. The following briefly highlights the academic backgrounds of program investigators and managers:

- Mark Shafer (PI - OU) - PhD Political Science (OU)
- Barry Keim (Co-PI - LSU) - PhD Geography/Climatology (LSU)
- Lynne Carter (Program manager - LSU) - PhD Environmental Science (University of Wales)
- Renee Edwards (LSU) - PhD Communications (Florida State)
- James Hocker (Program manager - OU) - MS Meteorology (OU)
- Yang Hong (OU) - PhD Hydrology and Water Resources (University of Arizona)
- Peter Lamb (OU) - PhD Meteorology (University of Wisconsin)
- Mark Meo (OU) - PhD Ecology and Environmental Policy Analysis (University of California - Davis)
- Kevin Robbins (LSU) - PhD Agricultural Meteorology (North Carolina State University)
- May Yuan (OU) - PhD Geography (State University of New York, Buffalo)

SECTORAL FOCUSES

SCIPP's engagement and research activities concentrate on several climate issues critical in the Southern U.S., including:

- Climate hazard planning in a multi-hazards context (severe storms, droughts, floods, hurricanes, extreme temperatures, etc.),
- Water resources planning,
- Coastal planning (as related to climate change and variability), and
- Climate adaptation planning.

Planning serves as the common theme that cuts across SCIPP's various sectoral foci. Close partnership with the SRCC also promotes the development of new products and tools that can be tested for broader regional applicability and transitioned into operations.

GEOGRAPHIC FOOTPRINT

The geographic domain of SCIPP is vast, covering the 6-state region encompassing Oklahoma, Texas, Arkansas, Louisiana, Tennessee, and Mississippi. While it is a climatologically diverse region (e.g., <10 inches average annual rainfall in the west; >60 inches average annual rainfall along parts of Gulf Coast), the various sectoral focuses aim to address issues pertinent to both the whole region as well as specific parts of the region (e.g., coastal planning). Like other RISAs, SCIPP accomplishes this through strategic engagement with selected groups to focus on learning that can be achieved through interacting with a smaller sample (i.e., depth over breadth). Furthermore, in sharing the exact same area of responsibility as the Southern Regional Climate Center, SCIPP is able to test the development and implementation of tools with the entire region in mind as appropriate for the given tool.

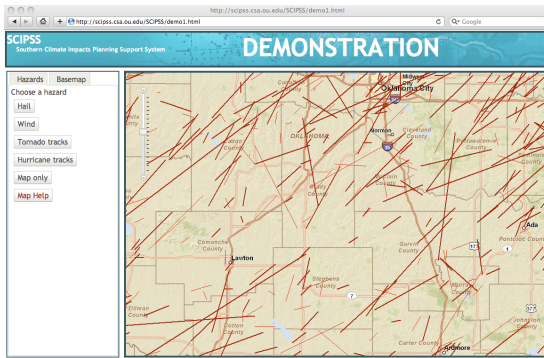


CORE RISA ACTIVITIES FOR FY 2010 AND 2011

The following is a summary of several projects underway in support of SCIPP focus areas.

Multi-hazard Mitigation Planning

One major project underway at SCIPP is the development of a historical ‘all climate hazards’ planning support tool - the Southern Climate Impacts Planning Support System (SCIPSS). Hazard planning is a critical issue in the south, particularly due to the recurrent nature of disastrous weather events in the region (as of early September 2010 all SCIPP states ranked within the top 15 most disaster declared in the U.S.). Decision makers responsible for developing local hazard plans (typically city planners, emergency managers, and other municipal staff) are faced with a variety of challenges throughout the process including very few or no dedicated staff to develop plans, scarce resources to hire planning consultants, insufficient time to develop plans, and a lack of knowledge on where to find required hazard information. Hazard plans play a crucial



role in preparedness and response and additionally are required in order to be eligible for mitigation funding. It is for these reasons that SCIPP has embarked on a process to co-develop a user-friendly system for viewing and acquiring climate hazard information by location. The concept is that through a simple GIS-based portal, planners can obtain information on the suite of hazards that has affected their area in the past, which in turn limits the propensity to focus on a single type of hazard. Hazard planners, emergency managers, and other interested stakeholders will continue to contribute to the conceptual design (shown at left), the data requirements, the functional requirements, and the operation of the interface.

Multi-hazards Planning, Perceptions, and Climate Change

In conjunction with SCIPSS development, SCIPP has conducted an initial regional assessment of hazard planning and climate change planning activities on-going in the Southern U.S. This was undertaken to evaluate: 1) hazard perceptions, 2) hazard planning, 3) climate change planning, and 4) information use and needs across the SCIPP region. The answers to these questions have helped to serve as a guide for future SCIPP engagement and research efforts while also serving as a record of decision-maker perceptions and needs during the earlier years of the program. The electronic survey was distributed to more than 2,000 decision-makers across SCIPP’s 6-state region with participants including emergency management officials, city officials, local-level hazard planners, members of regional planning districts, planning consultants, public works specialists, and many others. One major component of this research effort is to evaluate the feasibility, interest, and on-going efforts of hazard planners to incorporate climate change into the hazard planning process.

Water Resources

Water resources represent a growing area of focus by the SCIPP team; this has developed through the addition of new expertise to the program as well a growing partnership with colleagues in the Austin, TX area. During this past year, SCIPP has built this relationship through participation in a city climate action planning process (hosted by Austin Energy) as well as through a key city contact with prior involvement with the RISA program (through the Climate Impacts Group). SCIPP is partnering with these and other colleagues on a number of proposal efforts to enhance collaborative opportunities. Current and future efforts in this area include a project focusing on potential hydrologic futures for select locations in the South using downscaled climate projections to drive hydrologic models under different emissions scenarios.

Climate Adaptation Planning

Although not an original focus for SCIPP, climate adaptation planning has emerged as important focus area for the SCIPP team, particularly at the state level. Some initial activities have been undertaken in partnership with the Oklahoma Climatological Survey (OCS) to initiate a dialogue involving a range of state, city, and tribal representatives from across Oklahoma. A continuation of this activity will be supported through new assessment funding activities and also expanded to cover the Gulf coast region. Those projects are detailed in later sections.

Drought Planning

SCIPP began some groundwork for an eventual NIDIS Pilot in Missouri and Oklahoma focused on a comparison of monitoring capabilities and resultant quality of information at local, state, and national levels. Document analysis and interviews were conducted with key officials in state government to form a basis for comparing drought plans and goals between the two states. This was followed by surveys at local extension Farm Service Agencies, water management districts, and emergency managers to assess how well their activities related to state efforts. Emphasis focused on sources of information and communication, particularly feedbacks of information into the drought monitor process. Results showed a better communication infrastructure in Missouri, despite Oklahoma having the better monitoring network. Findings have helped direct OCS staff in improving communication in Oklahoma as another drought has begun to emerge.

Product Transition Demonstration

In the past year, SCIPP has undertaken an effort to experimentally transition a series of different climate information and data products originally developed at the Oklahoma Climatological Survey to partners at the Southern Regional Climate Center. Goals of these transfers included: 1) producing regional assessment products that could be used for SCIPP engagement activities, 2) enhancing product performance and access to Applied Climate Information System data, 3) improving product functionality and visualization, and 4) expanding availability of the tools to a broader region.

The process of undertaking an experimental product transition through SCIPP has helped to demonstrate the value of these partnerships in improving climate services and product delivery. More recently, attention has been given to product evaluation to test the regionalization of the tools, examine product utility for a host of different users, and determine new features or adjustments needed. This process will aid the development of other tools as part of SCIPP.

SCIPP ASSESSMENT SERVICES ACTIVITIES FOR FY2010

SCIPP will undertake several related assessment services projects for FY2010; all are detailed below.

Regional Social Network Analysis

This project will conduct a series of surveys across the six-state SCIPP region to determine where climate information is received and to whom they convey information. Surveys will begin with known climate information providers in the region and those who responded to the SCIPP regional survey on hazards and climate change. Through several rounds of surveys, the network of individuals will expand to the point that information pathways emerge. Through this process researchers, primary providers, and informed consumers will be revealed. Although individual identities must remain concealed to assure more candid responses to the survey questions, aggregated information will be available to identify communities in which interest is high. Individuals from these communities may then be recruited as cohorts that can participate in the National Assessment process.

The project will address the following questions: 1) Who are the primary information providers in the region? 2) How do networks connect to each other? 3) Are there any isolated individuals or communities? 4) What influence do the 'known providers' have – NOAA, RISA, Regional Climate Centers, State Climate Offices, Department of Interior agencies, EPA, ICLEI, Nature Conservancy, etc. 5) What linkages between providers and communities exist that may be used to generate or reveal new demand for climate information? The final product resulting from this would be a network map of climate information providers across the SCIPP region. In addition, a network map of stakeholders and information recipients may also be possible contingent on the depth of information obtained in the surveying process.

Development of survey instruments used in the project will be coordinated with other RISA teams conducting similar work, in particular the Carolinas RISA, Southeast Climate Consortium, Western Water Assessment, the Great Lakes and Pacific Northwest. To the extent possible, the survey will use a common set of questions regarding basic information provision, although additional questions may need to be added to address region-specific issues.

Climate Needs Assessment Along the Gulf Coast

The proposed focus of this project is on the assessment of climate and related information needs as it pertains to the large regional community of stakeholders along the western half of the Gulf Coast. This project will build off a similar process being undertaken in Oklahoma (see next project). Similar assessment tools and procedures will be used to assess climate information needs along the Gulf Coast of Texas, Louisiana, and Mississippi. The primary sectors that will be targeted include commercial fishing, the oil and gas industry, and port authorities.

Tasks for this project include: 1) hosting a series of town hall meetings to determine the concerns of the population along the Gulf Coast of Mississippi, Louisiana, and Texas focused on weather extremes and climate change; 2) determining the primary stakeholders within the coastal zone of the region; 3) assessing perceptions of climate change and variability among the stakeholders; 4) determining the products and information stakeholders need, as well as information used to date; 5) determining relevant research to address concerns of the stakeholders; and 6) maintaining dialogue with stakeholders to support their involvement in the National Assessment process.

One unique aspect of this project is the opportunity to coordinate alongside National Assessment-related efforts proposed by all four Gulf of Mexico Sea Grant programs. Coordination will occur through Louisiana Sea Grant ties at LSU as well as through a National Sea Grant Weather/Climate Extension Specialist at OU partnering on this project.

Climate Needs Assessment in Oklahoma

In late 2009, OCS initiated a dialogue focused on climate adaptation planning for the state of Oklahoma. To begin the process, OCS – as supported by SCIPP – held a one-day kick-off meeting to: 1) begin a dialogue to collaboratively and incrementally make Oklahoma communities more resilient to weather extremes; 2) learn from participants about their concerns and needs for information; 3) identify projects that can be done easily with existing resources; and 4) identify long-term research needs that can be addressed through partnerships. The meeting drew representatives from 17 state agencies, 10 Native American Tribes, 3 cities and 3 federal agencies. The meeting included an overview of Oklahoma's climate and projected changes under IPCC scenarios as well as a breakout session.

This project will support new staff to expand and continue this initial effort. Tasks will include 1) synthesizing results of the break-out session and prepare a workshop summary report; 2) hosting one or more follow-on workshops to share results from the workshop and expand participation to include other state and federal agencies, Native American tribes, community representatives, non-profit organizations, businesses and economic development coalitions and advocacy groups; 3) developing sectoral or issue-based stakeholder groups to examine need for climate information on a more in-depth basis; and 4) hosting

a series of town hall meetings across Oklahoma, to listen to individual citizens on how climate and extreme events impact them, how they perceive climate variability and change, and determine what they want to know, or products they would like developed.

Taking the Gulf Coast and Oklahoma projects as related, parallel efforts, the described needs for information will be compared and contrasted between the coastal and Oklahoma projects as well as within the Gulf Coast region (by state). This will allow an examination of how needs differ between various stakeholder groups within the region, including the extent to which state priorities influence perceptions and needs (within-state comparisons in the Gulf Coast region) as well as the way in which regional climate differences drive perceptions and needs (coastal versus inland). These findings will assist in producing more relevant, place-based, climate-related research for the region.

LONGER-TERM SCIPP PLANNING SUPPORT

The RISA program plays a significant role integrating science into planning and decision processes at the local, state, and regional levels. Through this process scientific research is better guided by the needs of planners, and in turn, planning and decision-making processes are better supported through the science. The following represent five major planning areas SCIPP intends to support through its program activities:

- Improving climate hazard planning support throughout the southern U.S. at the local and state level through the Southern Climate Impacts Planning Support System (SCIPSS)
- Supporting the process for and development of a state Climate Adaptation Plan for Oklahoma as a model for other Southern states
- Aiding in the development of a state-level drought plan for Louisiana with additional opportunities for other SCIPP states without state-level plans (Arkansas and Mississippi)
- Supporting future climate-related water resources planning efforts (i.e., Austin, TX efforts, Oklahoma Comprehensive Water Plan, etc.)
- Contributing to climate adaptation planning efforts along the Gulf Coast

SCIPP's experiences thus far have revealed a number of examples in which local-level climate-related decisions and planning can scale upward. The following briefly denote several examples:

- Climate Adaptation Planning - Efforts to plan for climate adaptation occur at multiple scales. At the city scale, locally developed and evaluated adaptation strategies can serve as examples for other cities to adopt. At the state scale, climate adaptation plans can be informed through efforts within state as well as findings and strategies developed in other states. Through these processes planning decisions can be spread and applied to broader areas.
- Water Resources Planning - Water resource planning and decision-making has an inherent upscale influence due to the shared nature of certain groundwater and surface water sources. Planning may occur at local levels but such efforts have broader regional implications, particularly for widely shared water sources. The water resources sector has been and will continue to be a key area of work for RISA teams due to the influence of climate on water.
- Drought-related Decision-Making - Decision-making during drought is a complex process that requires partnerships from local to state levels. State drought plans are uniquely different, but communication flow between locals observing impacts and authorities (at multiple levels) responsible for enforcing restrictions and regulating water usage is always critical. Like water resource planning, drought decision-making has an inherent upscale nature.
- Hazard Planning - City hazard plans can contribute to multi-jurisdictional, county, or similar plans while these 'mid-level plans' can in turn support higher level efforts such as the state hazard plan.

SCIPP will continue to investigate decision-making and planning processes between (and among) local, state, and regional levels to continue our learning process in an effort to support the use and application of information for climate planning.