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A Social Network Analysis of Climate-Related Information Exchange in the Southern Climate Impacts Planning Program (SCIPP) Areas of Operation

In July of 2020, former SCIPP Climate Assessment Specialist Dr. William Howe published three reports on climate change and severe weather communication in the SCIPP region.

In one report, A Social Network Analysis of Climate-Related Information Exchange in the Southern Climate Impacts Planning Program (SCIPP) Areas of Operation, Dr. Howe examined the relationships between SCIPP’s primary stakeholders and sources of climate information. He focused on determining stakeholder familiarity with specific sources of climate information, such as the National Climate Assessment, U.S. Climate Resilience Toolkit, and NCEI/AMS State of the Climate Report. Additionally, Dr. Howe analyzed stakeholder familiarity of both regional and national climate information providers, such as SCIPP, the USGS South Central Climate Adaptation Science Center, NOAA Southern Regional Climate Center, and local NOAA National Weather Service Forecast Offices.

The study reveals that stakeholders could greatly benefit from more accessible climate information and suggests that SCIPP provide more timely updates to increase the relevance of its information. The need for more timely and accessible climate information highlights the critical role of sustained assessment specialists in cultivating stronger relationships with stakeholders, particularly in two areas of focus: universities and underrepresented populations.

Summaries and full reports of Dr. Howe’s other studies, Climate Change or Extreme Weather Events: Evaluations of Information from Texas Residents According to Message Framing and Source Credibility and Sharing Expert Decisions: Examining Television Meteorologists’ Tweets of a Severe Weather Forecasting Team’s Warnings are available at southernclimate.org and at the link below.

Jazz on Tulsa Time: The Remarkable Story of the Network of Flood Mitigation Champions behind the Tulsa Turnaround

Dr. Ward Lyles, Penn Pennel, and Rachel Riley recently published a study in the journal Natural Hazards Review that examined the success of flood hazard mitigation in Tulsa, Oklahoma. The case study approach involved collecting multiple forms of data and triangulating across the datasets. Key data sources included primary and secondary documents, interviews with key stakeholders, and site visits. Analytic methods included systematic coding of plan documents, applying double-coding methods to the most recent Tulsa hazard mitigation plan, and single coding to ancillary plans. Interviews were transcribed and analyzed, and interviewees were given an opportunity to review and edit the transcripts. An organizational network mapping approach was used rather than a comprehensive network analysis approach given the focus on key champions rather than the entire network of stakeholders.

Themes and recommendations arising from the reanalysis of the Tulsa turnaround included: 1) Foster and sustain a team of champions, 2) Make room for multiple models of leadership, 3) Acknowledge the personal sacrifices that can arise for a mitigation champion, and 4) Approach hazard mitigation primarily as a community planning issue, not an emergency management function. The full manuscript is available at https://doi.org/10.1061/(ASCE)NH.1527-6996.0000480.

Image: © 2021 Natural Hazards Review
Connecting Climate Science with Regional Stakeholders: the NOAA RISA Sustained Assessment Specialist Network

SCIPP’s Climate Assessment Specialist, Darrian Bertrand, and the Pacific RISA’s Sustained Climate Assessment Specialist, Zena Grecni, co-presented at the 2021 American Association of State Climatologists’ (AASC) Annual Meeting. The virtual meeting was held every Friday during June and gave those in the weather and climate community an opportunity to share their research and program activities.

Darrian and Zena presented an overview of the NOAA RISA Sustained Assessment Specialist Network, which is a small network of Sustained Assessment Specialists (SASs) within RISA who conduct cross-regional work, support adaptation and resilience efforts by building lasting relationships with diverse stakeholders, and aid and promote the National Climate Assessment. Their presentation included an introduction to the network, members, the impacts each SAS has on their individual RISA team, and the benefits of growing the network to support sustained assessment across the country.

Outreach

An Examination of Extreme Rainfall Forecast and Communication Processes in the South Central United States
University of Oklahoma master’s student Anna Wanless successfully defended her thesis in June 2021. Ms. Wanless’ thesis examined extreme rainfall forecast and communication processes for nine events that occurred in the SCIPP region between 2015 and 2019. Semi-structured interviews were conducted with 21 National Weather Service forecasters about their experiences with the events and how they or their offices messaged the event(s). Study participants were asked event-specific questions about products disseminated by their offices leading up to and during the event(s) and how they internally processed and externally communicated model outliers and anomalous rainfall events overall. Interviews also explored forecasters’ perceptions of the relationship between these events and climate change and if those perceptions impacted the forecasts and messaging for the event.

Using deductive qualitative analysis, components of sensemaking and decision-making conceptual frameworks as well as principles of forecasting were identified in the responses. A simple forecast communication process model was created to illustrate the findings. With an awareness of the purpose of the forecast, forecasters use sensemaking and decision-making frameworks to process data from models and observations. Then, forecasters consider what sensemaking and decision-making processes their audiences will go through as they try to understand the forecast information. These principles and frameworks then impact how they present the forecast to their audiences. The study also found that forecasters do not consider the impacts climate change might have on an extreme rainfall event when forecasting such an event. However, climate change is something that they may consider when reflecting on the event after it occurred.

Wanless will also be virtually presenting the results of her research at a NOAA Weather Prediction Center Flash Flood and Intense Rainfall Experiment seminar this month.
SCIPP Research Associate Simone Speizer has created a tool that shows historical trends in temperatures for locations across the state of Texas.

The Texas Temperature Trends Dashboard, which was produced in collaboration with Texas Sea Grant, presents trends in extreme heat, extreme cold, warm nights, heating and cooling degree days, seasonal average temperatures, seasonal extreme temperatures, and yearly average temperatures from 1970-2019 for 75 stations (point locations) in Texas. The graphs show both individual data points for each year and overall trend lines. The dashboard also includes a link to a fact sheet discussing the temperature indicators shown in the tool and their importance.

While other resources exist that present regional or national trends in temperatures, few tools offer such information on a local level. This dashboard helps to fill that gap by providing location-specific information about changes in temperature in the last 50 years. By incorporating trends in indicators such as extreme heat and warm nights to data of overall temperature trends, the dashboard delivers insight into changes in heat that can bring public health and economic ramifications to communities. Other indicators, such as heating and cooling degree days, are relevant to analyses of energy use and emissions.

The dashboard can be accessed through the Data Tools page at southernclimate.org or directly through the link below.
February 2021: Extreme Cold, Snow, and Ice in the South Central U.S. includes information about the weather pattern, describes records that were broken, and provides context of the event compared to climatology and past historic events. The document also describes impacts to various sectors including energy, water, health, infrastructure, the economy, the environment, and society. Examples of hazard mitigation successes in the region are also mentioned to encourage stakeholders to reduce their vulnerability for future extreme cold events, particularly in the energy sector.

To help make this information accessible to a wide variety of stakeholders, this summary was written for a general audience with the goal of helping individuals compare the south central U.S. February 2021 extreme cold event to past events.


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**Policy Change Summary**

**FEMA Updates the National Flood Insurance Program Flood Insurance Manual**

As of April 1, 2021, the latest update of the Federal Emergency Management Agency's (FEMA) Flood Insurance Manual has gone into effect. The latest edition integrates the changes announced in October 2020, and includes updates in the following areas: (1) The list of eligibility requirements to the Community Rating System, (2) The premium rates for policies written or renewed by April 1, and (3) The severe repetitive loss premium and reserve fund assessment percentages for policies written or renewed on or after April 1.

In addition to these updates, the April 2021 edition revises outdated content and
FEMA Updates the National Flood Insurance Program's Risk Rating Methodology

On April 1, 2021, the Federal Emergency Management Agency (FEMA) announced that there will be changes in the National Flood Insurance Program's (NFIP) pricing methodology for the first time in 50 years. According to FEMA's press release, these changes are intended "to communicate flood risk more clearly, so policyholders can make more informed decisions on the purchase of adequate insurance and on..."
While the old rating methodology used flood zone mapping to assess a community’s flood risk, the new methodology considers an individual property’s risk, reflects more types of flood risk in rates, uses the latest actuarial practices to set risk-based rates, provides rates that are easier to understand for agents and policyholders, and reduces complexity for agents to generate a flood insurance quote. Some factors that influence a property’s risk include probable inland flooding, historical storm surges, cost of rebuilding, historical losses, elevation, and natural surroundings and barriers.

In Phase I, Risk Rating 2.0 will go into effect October 1, 2021, for new policies and existing policyholders eligible for renewal. Policies renewing on or after April 1, 2022, will be subject to the new rating methodology in Phase II. While some policyholders will see a decrease in their monthly rate, most will see a slight increase.

SCIPP Team Member Highlight

Vincent Brown joined the SCIPP team in August 2016, just after the historic south Central Louisiana flood event (see Brown et al. 2020). Two years later, he became a full-time SCIPP Research Associate and now oversees climate-related research for SCIPP at Louisiana State University (LSU). He also serves as an Assistant Professor-Research at LSU. His research interests include climatology, precipitation, climate change, and statistics.

Before joining the SCIPP team, Vincent attended the University of Tennessee (UTK), where he received an M.S in Geography researching tornadoes under the guidance of Dr. Kelsey Ellis. Before UTK, Vincent attended Salisbury University, on the eastern shore of Maryland, where he received a B.S in Geography under the guidance of Dr. Brent Skeeter.

Vincent grew up in Frederick, Maryland – about 45 miles to the west of Baltimore and 45 miles northwest of Washington D.C. He is an avid Orioles and Capitals fan. In addition, he enjoys golfing, running, and fishing; however, he has yet to adapt to the Louisiana heat and frequently attributes bad golf scores or slow 5k times on the heat!
The Southern Plains Climate Science Webinar Series is set to hold its third of four webinars in 2021 on July 19 at 2:00 pm. The series is a joint initiative between the South Central Climate Adaptation Science Center, the U.S. Department of Agriculture’s Southern Plains Climate Hub, and SCIPP.

**Working Together for Forest Resilience: Navigating a Path in Climate and Fire Impacted Forests** features Director of Forestry for the Pueblo of Santa Clara Daniel Denipah and Deputy Director with the Forest Stewards Guild Eytan Krasilovsky discussing their partnership in New Mexico for using fire as a management tool.

Registration is open to all who are interested, and participants may sign up at the link below.

Register Here
Notice

Ongoing IT Change Causing SCIPP Tools to Malfunction, Some Tools Have New URLs

Due to an unanticipated change in IT infrastructure, some SCIPP data tools that are hosted at the Southern Regional Climate Center have malfunctioned recently. In attempt to resolve this matter, some tools have been assigned new URLs and must be accessed through the new links on the SCIPP Data Tools page. While this change should resolve the previous tool malfunctions, this IT shift is an ongoing matter and may require future updating. We thank you in advance for your patience.

Click here for details on which tools have updated URLs.

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Comic Relief
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