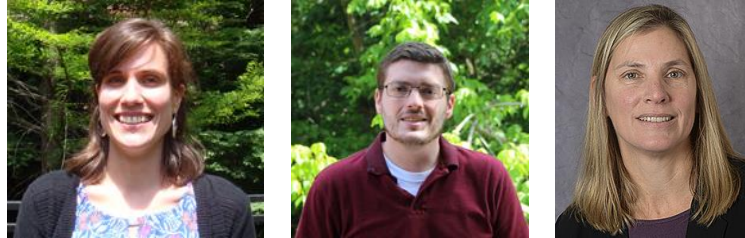


Catawba-Wateree DMAG Annual Meeting

Project Nighthawk Overview

Rebecca Ward, Corey Davis,
Kirsten Lackstrom

Project Team



North Carolina Climate Office, NOAA's Carolinas Integrated Sciences and Assessments



NOAA's Sectoral Applications Research
Program (SARP)
***"Coping with Drought in Support of the
National Integrated Drought Information
System (NIDIS)" Competition***



Project Partners



US Army Corps
of Engineers®



FEMA

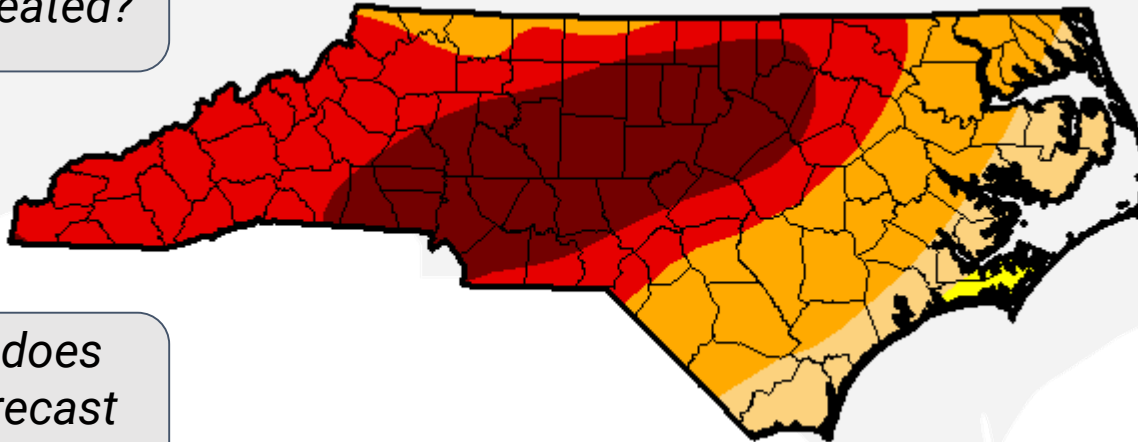
Project Background

How was this map created?

Who is discussing drought in NC, and how often?

*How is this affecting **my** sector?*

What does the forecast show?



How can I find out about local conditions?

*Why doesn't this map reflect conditions I'm seeing in **my** area?*

Project Background

Goal: Provide **relevant**, **accessible**, and **actionable** drought-related information to decision makers tailored to specific sectors

Official Title: *“Innovating Approaches to Drought Communications with North Carolina Decision Makers”*

Code Name: *Project Nighthawk*



The common nighthawk. Photo by Andy Reago and Chrissy McClarren, shared under CC BY 2.0.

Informed Consent

More information at <http://climate.ncsu.edu/nighthawk>

INNOVATING APPROACHES TO DROUGHT COMMUNICATIONS WITH NORTH CAROLINA DECISION MAKERS

Background | Why Nighthawk? | Objectives | Timeline | Our Partners | Funding Source | Contact Us | **For Participants**

Questions?

Project Nighthawk Phases



Fall 2018

Summer 2020

Phase 1

Identify

Refine priorities for new products with project partners and target audiences

Phase 2

Develop

Develop tailored information and communication prototypes

Phase 3

Evaluate & Refine

Assess prototypes with stakeholder assessment and engagement, refine and enhance information and communication deliverables

Phase 4

Implement & Integrate

Integrate and implement communication strategies

Phase 5

Evaluate

Evaluate project activities and outcomes

Water Resources Sector

Initial Project Survey

Sectoral Webinar

WRI Annual Conference

Agriculture/Forestry Sectors

Initial Project Survey

Sectoral Webinar

Extension Conference (TBD)

DMAC In-Person Meeting

Agriculture/Forestry and Water Resources Sectors

Combined Follow-Up Webinar

Final Project Survey

Key Project Tasks

Key Takeaways from Phase 1

- Users prefer at least partially translated information
- Current and short-range forecasts at county and basin scales are very useful for a majority of respondents
- Drought Monitor maps are widely used, but lots of uncertainty surrounds the drought monitoring process and its accuracy
- Room for improvement among current drought communications

Priorities for Prototype Development

- 01 Narratives to accompany NC Drought Map
- 02 Resources that relate anticipated short- and long-range conditions to drought conditions and local- and sector-specific effects in NC
- 03 Resources that aggregate statewide or basin-wide conditions
- 04 Resources that describe the NC DMAC, its purpose, its weekly drought monitoring process, and how this relates to the USDM

Priority 1

Narratives to Accompany the NC Drought Map

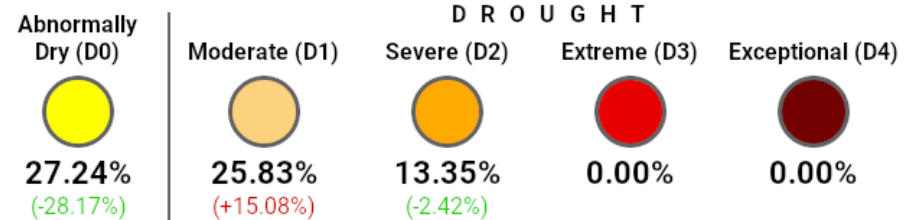
Examples

North Carolina Drought Update For the month of March 2017

Drought Monitor of NC Map, Released Mar. 28, 2017

From the US Drought Monitor, authored by Eric Luebehusen (USDA) with input from the North Carolina Drought Management Advisory Council

Current Coverage and Changes Since Feb. 28



Mountains improve, but drought persists

Severe Drought was upgraded to Moderate Drought in parts of the Mountains that received up to **3 inches of rain** last week, including northern Haywood and Swain counties.

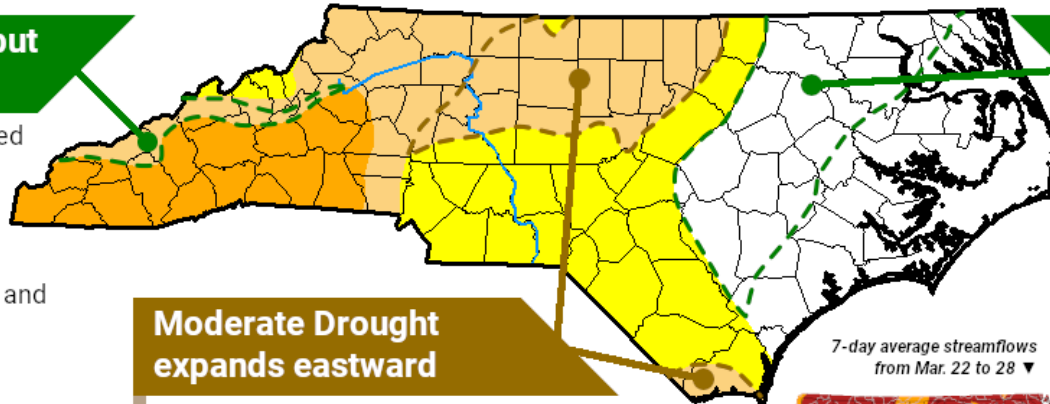
However, Severe Drought remains in the southern Mountains, which have seen **precipitation deficits of 4 or more inches** over the past 3 months and continue to have **near-record low monthly streamflow levels**.

Moderate Drought expands eastward

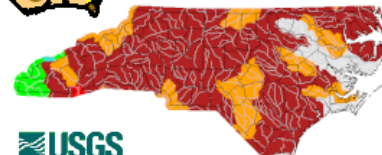
Due to **below-normal rainfall** over the past 1 to 3 months, **streamflows** have dropped much below normal in many areas, leading to **drought development** in the northern Piedmont and in Brunswick County

Northern coast no longer Abnormally Dry

A **wet start to March** replenished **soil moisture** and **groundwater** levels, especially north and east of Rocky Mount



7-day average streamflows from Mar. 22 to 28 ▼



USGS



This infographic is a product of



<http://climate.ncsu.edu/nighthawk>



Discussion Questions

- How familiar are you with the process by which the USDM is created?
- How much do you use or refer your customers/constituents to the NC DMAC website (ncdrought.org) for drought information?

Priority 2

Resources that relate anticipated short- and long-range conditions to drought conditions and local- and sector-specific effects in NC

Discussion Questions

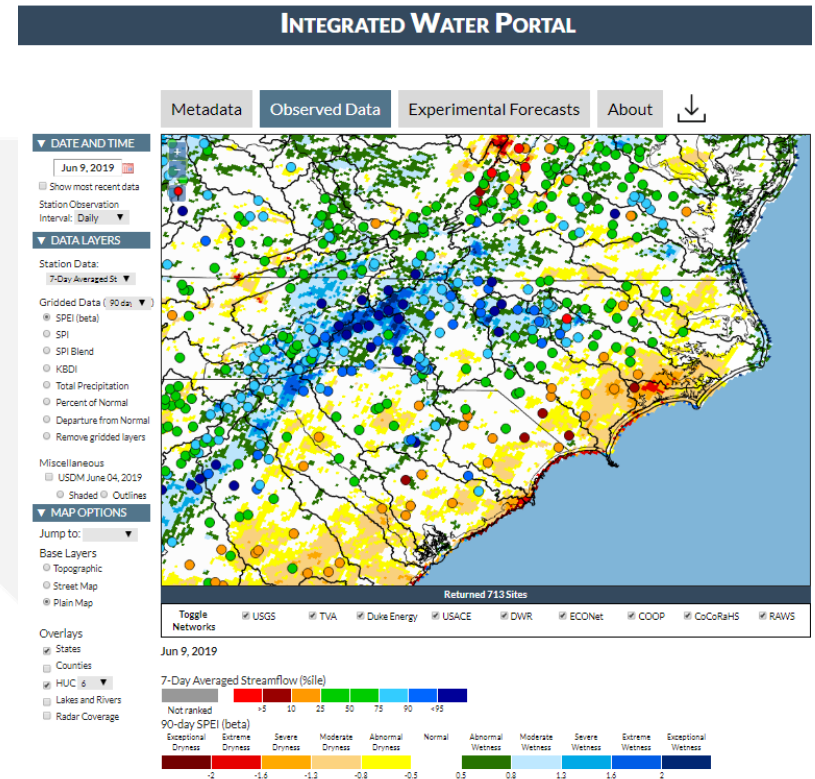
- What drought-related questions and concerns do you hear from your communities and constituents?
- What type of information is requested? Are you able to provide it?
- Is there a need for different types of information or formats than what is currently provided?

Priority 3

*Resources that aggregate
statewide or basin-wide conditions*

Discussion Questions

Would a resource that shows or aggregates a range of indicators be useful for communicating about drought for the Catawba-Wateree basin?



Example of existing resource that could be modified/tweaked:
Integrated Water Portal (<http://climate.ncsu.edu/water/map>)

Priority 4

“About the NC DMAC” Resources

"About the DMAC" Resources

North Carolina Drought Management Advisory Council History

A main purpose of the DMAC is to provide consistent and accurate information on drought conditions in the state to the U.S. Drought Monitor, the Environmental Management Commission, the Secretary of the Department of Environment and Natural Resources, the Environmental Review Commission, and the public.

Monitoring Drought

- 1992** Formation of NC Drought Monitoring Council. The Drought Monitoring Council, an inter-agency coordination, is created in 1992.
- 1999** Creation of the US Drought Monitor. The US Drought Monitoring Council began offering USDM authors local and state-level input.
- 2002** Drought Monitoring Council is Recognized. The NC General Assembly gives the Drought Monitoring Council an official statutory base and changes its name to the North Carolina Drought Management Advisory Council (DMAC) to reflect its broader role, which extends beyond monitoring drought conditions. The Chair of the Council is a member of the Department of Environmental Quality designated by the Department.
- 2003** A New Role. A new statute charged the DMAC with issuing official state drought advisories based on technical data to address varying conditions throughout NC.
- 2004** Annual Reports. The General Assembly began requiring the Council to submit an annual activities report to the Secretary, the Governor, and the Environmental Review Commission. The report includes a review of the Council's activities and recommendations to improve coordination.
- 2008** New Participants. The NC legislature passed a law geared toward improving drought preparedness and response, including defining the DMAC's membership. Various groups were invited to send a representative to serve on the council due to their expertise in areas relevant for drought monitoring.

1998-2003 Drought

Statewide drought heavily impacted the forestry and agriculture industries. More than 200 municipalities were under some sort of water conservation efforts.

October 15, 2002

Drought Classifications

- D0 - Abnormally Dry
- D1 - Moderate Drought
- D2 - Severe Drought
- D3 - Extreme Drought
- D4 - Exceptional Drought

2007-2008 Drought

North Carolina experienced one of the worst droughts in its modern history. At its peak in December 2007, the US Drought Monitor classified 66% of the state in Exceptional Drought. Visible impacts could be seen across NC, such as low levels in Falls Lake (pictured below, image from Southeast Regional Climate Center).

Who serves on the NC DMAC?

Logos for participating organizations: NC Environmental Quality, TNA, NC CLIMATE OFFICE, USGS, COOPERATIVE EXTENSION, NC STATE UNIVERSITY, US Army Corps of Engineers, and others.

Drought Designations

Using Drought with Technical Information (continued)

Drought, but even these can become... information about the impacts of water can also become impacted as... information about the impacts from...

What's my designation?

Droughts don't follow political boundaries, so it's possible (and even common) for a county to have several levels of drought within its bounds. In these instances, the drought designation of the county will be the highest drought designation that applies to at least twenty-five percent (25%) of the land area of the county.

Drought Designation	Percentage
D0	18%
D1	42%
D2	30%
D3	6%
D4	4%

Let's say that the pie chart above is the breakdown, by percentage, of each of the drought levels for your county. Even though a larger percentage of the county is in Moderate Drought (D1, 42%), the Severe Drought (D2, 30%). This is because D2 is the highest drought designation that applies to at least 25% of the county.

D0, indicates areas that might be out of drought. Examples of growth of crops (going into water deficits (coming out of drought, but even these can become... information about the impacts of water can also become impacted as... information about the impacts from...)

D1, indicates areas that might be out of drought. Examples of growth of crops (going into water deficits (coming out of drought, but even these can become... information about the impacts of water can also become impacted as... information about the impacts from...)

D2, indicates areas that might be out of drought. Examples of growth of crops (going into water deficits (coming out of drought, but even these can become... information about the impacts of water can also become impacted as... information about the impacts from...)

D3, indicates areas that might be out of drought. Examples of growth of crops (going into water deficits (coming out of drought, but even these can become... information about the impacts of water can also become impacted as... information about the impacts from...)

D4, indicates areas that might be out of drought. Examples of growth of crops (going into water deficits (coming out of drought, but even these can become... information about the impacts of water can also become impacted as... information about the impacts from...)

Evidence

Drought designations are based on what the majority of the data indicate. Experts examining the same information, no undue weight is given to any drought designations correctly reflect on-the-ground conditions.

Discussion Questions

- CW-DMAG Communications - What works? What doesn't work?
- How will or can Nighthawk products assist?

Project Nighthawk Next Steps

Phase 4

Implement & Integrate

Integrate
and
implement
communication
strategies

- Revise prototypes based on Phase 3 feedback
- Complete “About the DMAC” resources and share for review
- Begin testing Weekly Drought Updates
 - Seeking representatives from each sector to receive these and share feedback

Project Nighthawk Next Steps

Phase 5

Evaluate

Evaluate project activities and outcomes

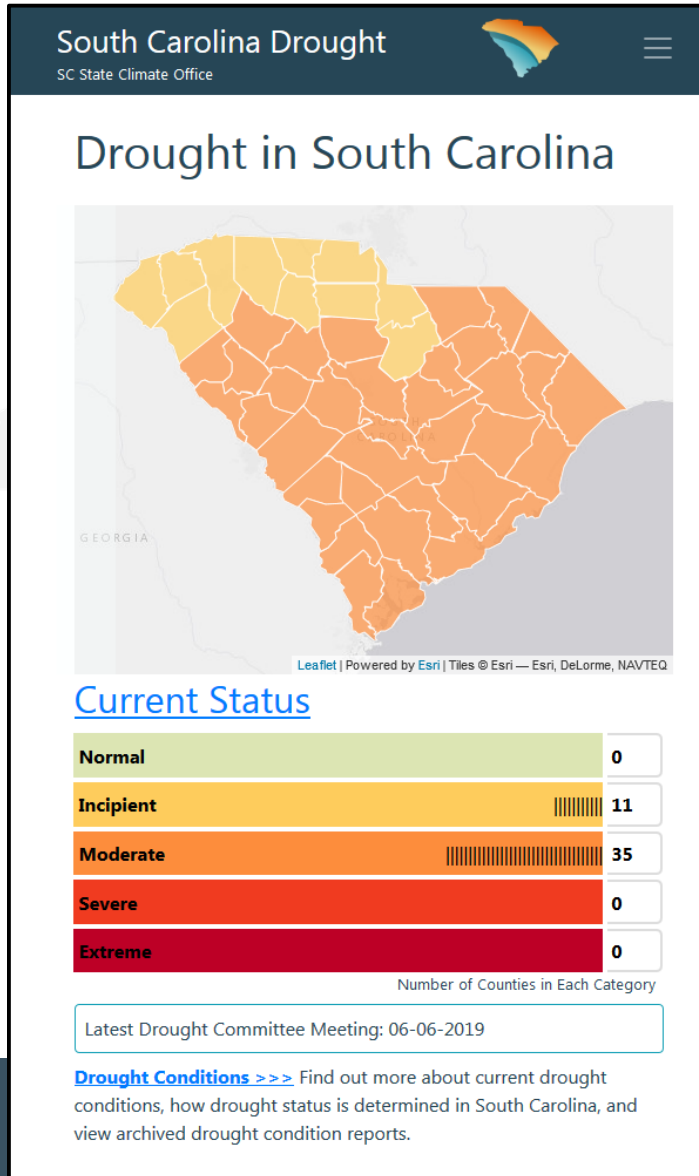
- This fall and winter, we'll evaluate what we've done
- Seeking additional feedback opportunities for ag, forestry, and water resources
 - Could you recommend any conferences or events to attend for *your* sector or organization?

Agriculture/Forestry and Water Resources Sectors

Combined Follow-Up Webinar

Final Project Survey

South Carolina Resources



Tabletop Exercise

July 24, 9:30-3:30

SC Emergency Operations Center

Organizers: SC DNR/SCO, CISA, SC EMD,

SC Water Resources Center

2019-sc-drought-ttx.eventbrite.com





Questions or Suggestions?

<https://climate.ncsu.edu/nighthawk>