Project Nighthawk

DMAC Annual Meeting

September 29, 2020

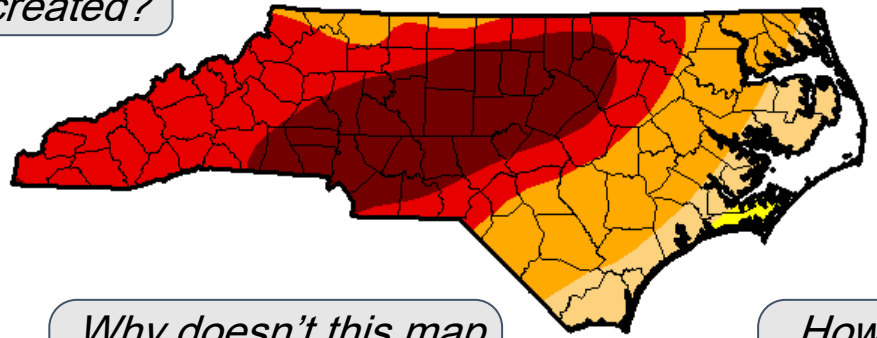
NORTH CAROLINA CLIMATE OFFICE

CISA

Project Background

Who is discussing drought in NC, and how often?

How was this map created?



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

What does the forecast show?

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

How can I find out about local conditions?

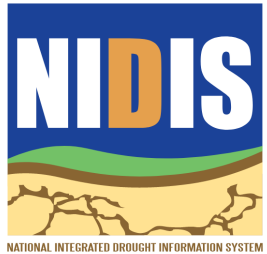
Official Project Title: *"Innovating Approaches to Drought Communications with North Carolina Decision Makers"*

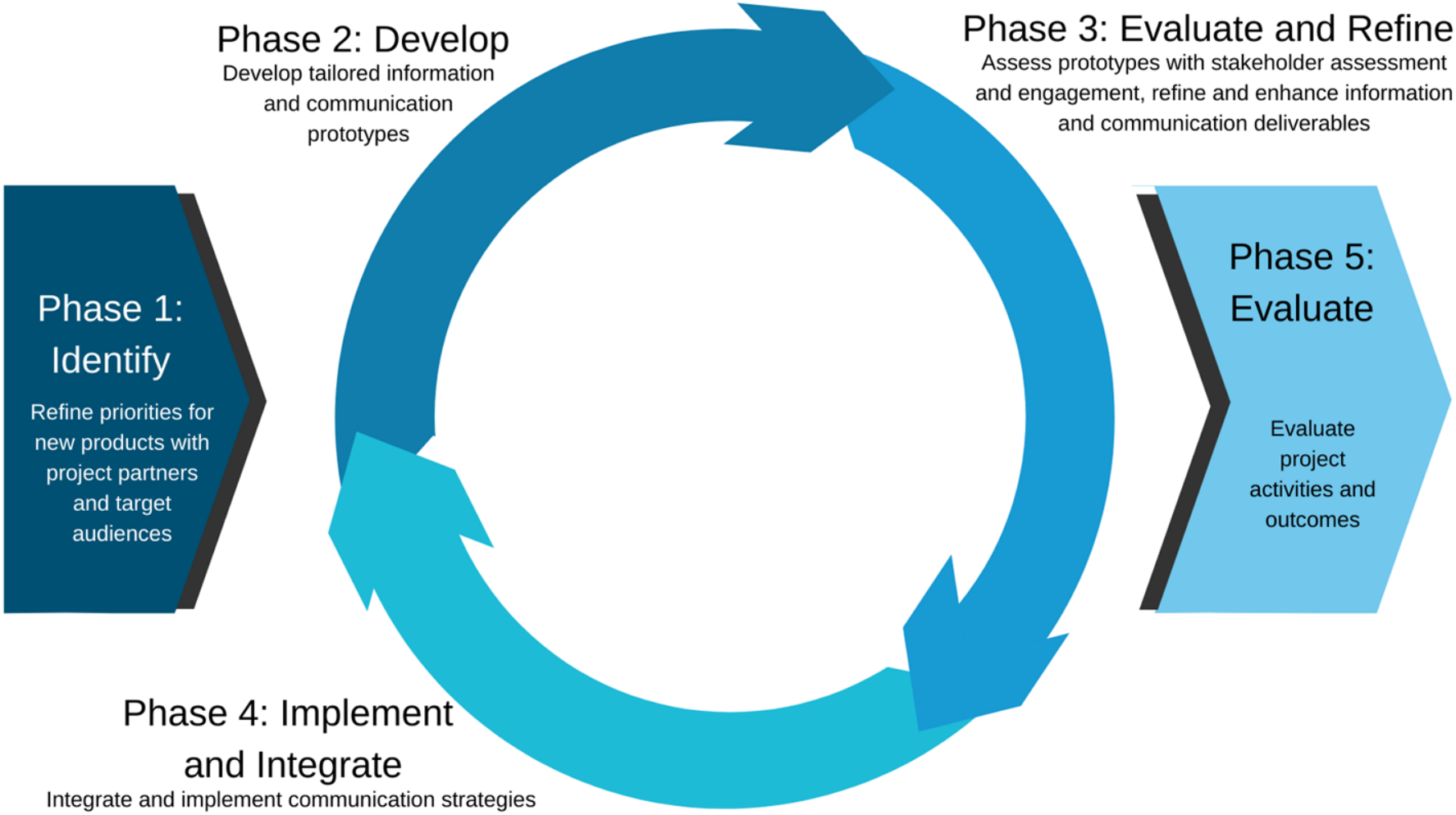
Code Name: *Project Nighthawk*

Funding:

SARP
Sectoral Applications Research Program

RISA
Regional Integrated Sciences and Assessments




Phase 2: Develop
Develop tailored information and communication prototypes
Phase 3: Evaluate and Refine
Assess prototypes with stakeholder assessment and engagement, refine and enhance information and communication deliverables
Phase 1: Identify
Refine priorities for new products with project partners and target audiences
Phase 5: Evaluate
Evaluate project activities and outcomes
Phase 4: Implement and Integrate
Integrate and implement communication strategies

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 and Refine

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

Phase 4: Implement and Integrate

Integrate and implement communication strategies

Phase 5: Evaluate

Evaluate project activities and outcomes

Key Findings

- *Use and Usability*: balance of visuals and translated text
- *Access and Discoverability*: “Tune in” to existing information channels
- *Transparency*: proactive (*vs. reactive*) communications

What to communicate?

1. What's the status? And *why*?
2. About the drought monitoring process
3. How does this affect me?
4. What can we expect in the future?

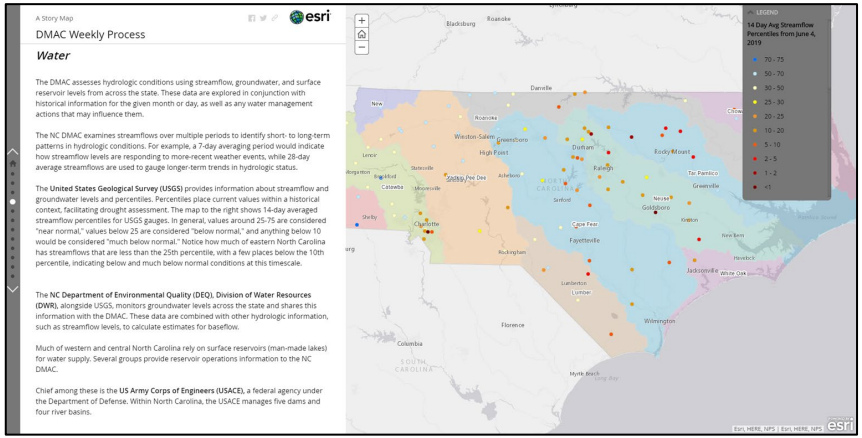
No “One Size Fits All”

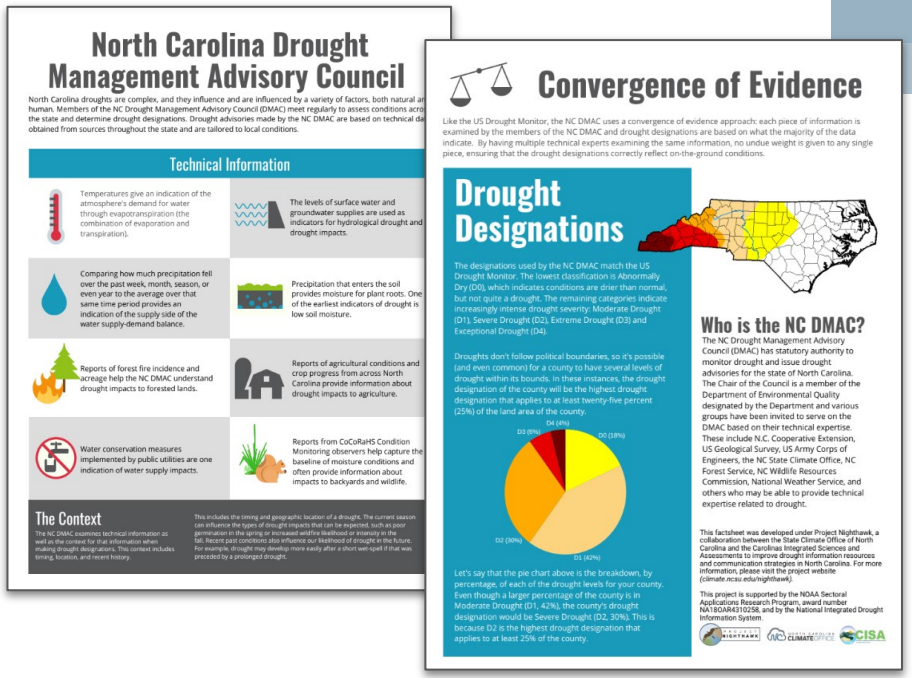
Water resources	Agriculture and Forestry
• When there is a drought • When the drought is affecting them	• When we’re in a drought or not • What to expect in the future? (forecast)

What did we create?

Story map describing NC DMAC and weekly process

Ideas for content and layout of ncdrought.org website

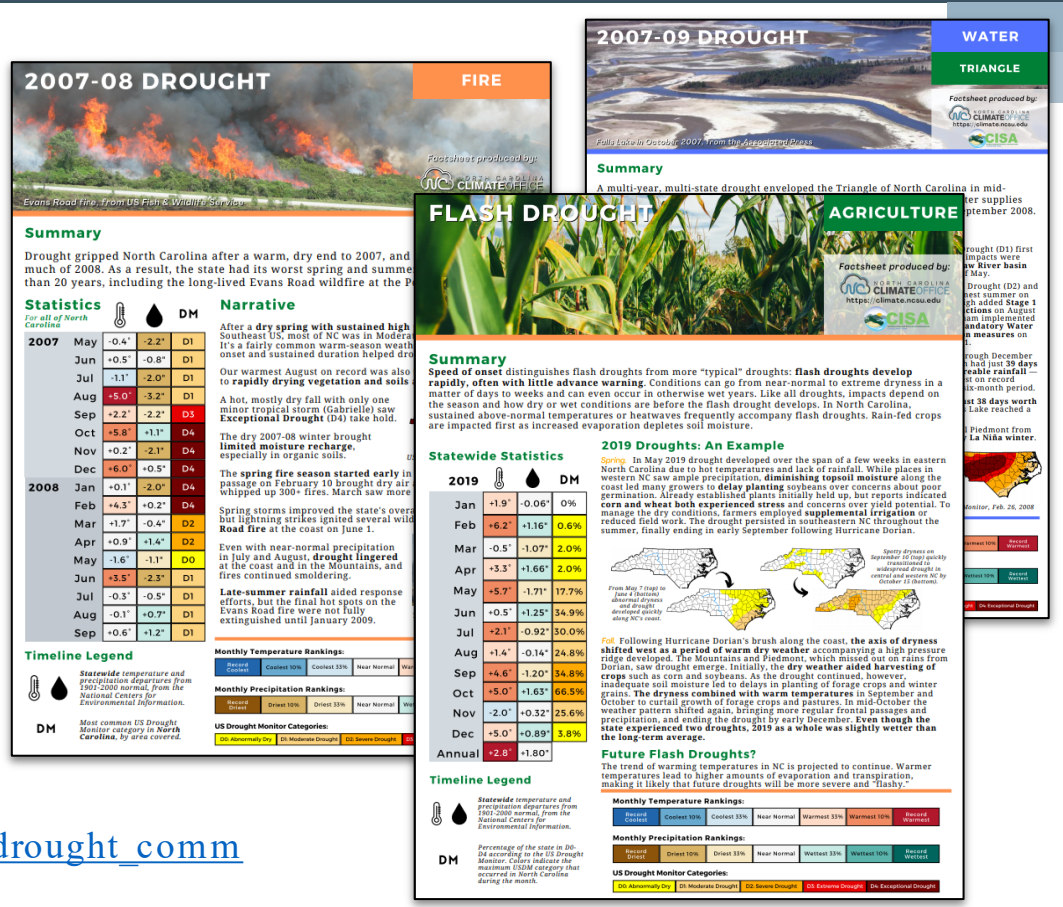




Factsheets describing the DMAC and drought monitoring process

Priority: NC DMAC descriptive resources

Factsheets Describing Past NC Droughts



Available online: https://climate.ncsu.edu/drought_comm

North Carolina Drought Update

For the assessment period ending May 19, 2020

*Note: updates will be issued monthly when the state is **not** experiencing dry or drought conditions.*

This Week's Drought Monitor of North Carolina Map

From the US Drought Monitor, authored by Brian Fuchs (*National Drought Mitigation Center*) with input from the North Carolina Drought Management Advisory Council (ncdrought.org)

Reservoirs in the state are close to their guide curves. Operators are preparing for flood control as heavy rain continues this week.

Vegetation across the state is completing green-up this week. Combined with the recent rain, this effectively ends the spring fire season.

Streamflow levels in the western part of the state had risen to above- and much-above normal levels in response to the rainfall so far this week.

Parts of the Piedmont to northern Coastal Plain were experiencing slight dryness over the past week, including lawn growth slowing and newly planted plants needing watering. Ongoing rains this week are likely to lead to improvements.

Last Week's Drought Map

A Product of Project Nighthawk
https://climate.ncsu.edu/nighthawk

Statewide Condition Summary

What's Changed? Though the past couple of weeks were drier for some parts of NC, slightly **below-normal temperatures** and **antecedent wet conditions** managed to keep the state drought map blank.

What's New? **Tropical Storm Arthur** brought 2 to 4 inches of rain at the immediate coast, and a **slow-moving low pressure system** continues to soak the state. Overall, most places are expecting at least 2.5 inches, with some areas in the Foothills and Mountains seeing as much as 7 inches.

What's Next? Localized flash flooding is possible through the weekend. **Scattered showers and storms** will linger for much of next week, with our temperatures and precipitation similar to the **typical summertime pattern**.

Statewide Coverage By Category

Category	Coverage This Week	Change Since Last Week
D0: Abnormally Dry	0.00%	0.00%
D1: Moderate Drought	0.00%	0.00%
D2: Severe Drought	0.00%	0.00%
D3: Extreme Drought	0.00%	0.00%
D4: Exceptional Drought	0.00%	0.00%

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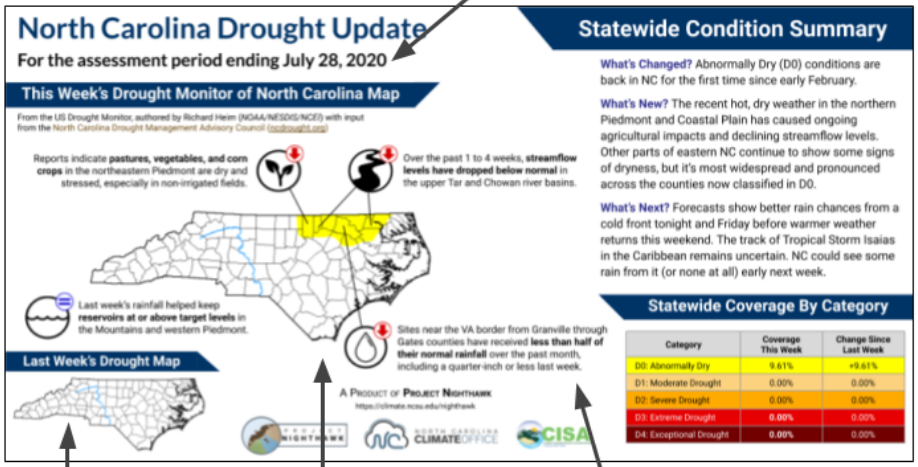
How It's Made: Drought Update Infographics

Example Infographic

The US Drought Monitor's weekly assessment period includes data through Tuesday morning.



Last week's US Drought Monitor map for North Carolina.

This week's US Drought Monitor map for North Carolina.

Indicators and impacts that explain the current drought status.

Key Elements

A summary of changes to the drought map over the past week and the current status across the state.

*Forecasts are **not** factored into the weekly drought status, but are included as a reference on these graphics based on user requests.*

The coverage of each US Drought Monitor classification, and percent changes from the previous week's map.

For more about our drought communication efforts including these infographics, visit: **https://climate.ncsu.edu/drought_comm**

The Drought Map Explained

North Carolina's drought monitoring process considers conditions across multiple sectors and timescales, from short-term (over the past week) to long-term (over the past 6 to 12 months). Key impacts are highlighted on each infographic with descriptions, icons, and tendency indicators.

Precipitation, including recent amounts and departures from normal

Reservoir levels and inflows compared to seasonal targets

River and streamflow levels, real-time and over the past 7 to 28 days

Soil moisture and groundwater conditions

Crop & vegetation reports from sources such as ag extension agents

Forest conditions such as seasonal green-up and leaf drop

Observed fire activity and estimated fire danger

Tendency Indicators

- *Improving dryness*
- *Worsening dryness*
- *Conditions holding steady*
- *Mixed wet and dry conditions*

Available online: https://climate.ncsu.edu/drought_comm

Priority: Relate forecasted conditions to drought, local- and sector-specific effects

A Warmer Weekend, then Seasonable

High temperatures on Saturday will reach the mid-80s as a jet stream ridge builds over the Southeast coast. By Memorial Day, highs should relax into the upper 70s -- about average for late May -- and hover near 80°F for most of the week.

Gradually Drying Out

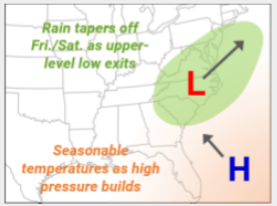
The upper-level low that has brought heavy rain across the state this week will slowly move out

Forecast Confidence

We're moving into a calmer pattern than the storm-soaked past week. The chances for afternoon showers are the main area of uncertainty.

Short-Range Outlook for North Carolina

Week 1:
May 21 to 27, 2020



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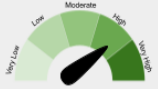
Gradually Drying Out

The upper-level low that has brought heavy rain across the state this week will slowly move out on Friday. Some showers and storms will linger during the day on Saturday, with lower rain chances as we head through next week.

Forecast Confidence



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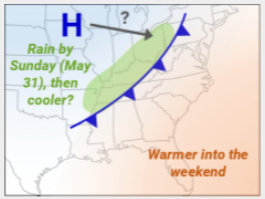
Week 2:
May 28 to June 3, 2020



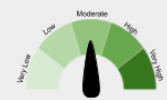
Late May Warmth, Early June Uncertainty

Weak ridging should remain over the east coast through next weekend, putting highs into the 80s. A brief cooldown is possible around June 1 if Canadian high pressure moves in. Temperatures could drop into the 60s with northeasterly winds.

A Weekend Rain Event?

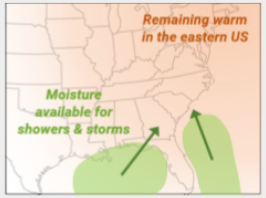
A possible cold frontal passage on May 30-31 could bring rain across the state. Beyond that, expect chances of afternoon showers almost daily as we continue moving into a summer-like precipitation pattern.

Forecast Confidence



The large-scale jet stream pattern favors ridging over the eastern US, but the potential for cooler high pressure moving in makes our local temperature forecast less certain.

Weeks 3-4:
June 4 to 17, 2020



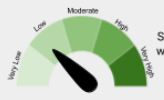
Jumping Into June-Like Weather

Most models favor temperatures generally a few degrees above normal in North Carolina with jet stream ridging continuing over the eastern US. The best chances for warmer weather look to be in Week 4 approaching mid-June.

Tropical Moisture Fuels Rain Chances

Moist air moving in from the Atlantic and Gulf of Mexico should continue to support afternoon showers. Some models hint at tropical activity offshore similar to Arthur, but it's too early to tell if and when such systems might take shape.

Forecast Confidence



Some models show more Gulf moisture moving across the Southern Plains than the Southeast, which might lower our rain chances. Otherwise, the low confidence is typical of this time of year.

A Product of Project Nighthawk
https://climate.ncsu.edu/nighthawk

This infographic is based on forecast and outlook guidance from the National Weather Service.

Sustainability and Access

Resources available on:

- https://ncdrought.org

Project archive:

- https://climate.ncsu.edu/drought_comm

What's next?

- Internet of Water - Water Supply Dashboard
- Weekly Drought Update and Short Range Outlook Infographics
- Future funding opportunities

Thank you!

https://climate.ncsu.edu/drought_comm

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