

Project Nighthawk Takes Flight

Innovating Drought Communications with North Carolina Decision Makers - Phase 1 Summary

About The Project

This project focuses on assessing and improving the usability of drought-relevant information for the agriculture, forestry, and water resources sectors in North Carolina. Project Nighthawk's motivation stems from needs articulated by decision makers for improved drought information and communications. These needs include a better understanding of how drought is monitored, the climatic and environmental conditions that can cause or worsen drought conditions, and the effects of drought on North Carolina resources.

This project, which began in Fall 2018, has been designed as an iterative process that will engage decision makers through the various stages of product development, evaluation, refinement, and implementation. Goals during Phase 1 were to identify and refine priorities for enhancing existing or developing new resources and products.

Why "Project Nighthawk?"

Our project's name is inspired by nature. The common nighthawk, *Chordeiles minor*, is a bird species native to North Carolina that is one of nature's best examples of drought resilience. Just as these iconic birds have learned to live with and recover from drought, our goal in Project Nighthawk is to help decision makers across North

Carolina become better informed about and prepared to respond to drought and the weather and climate patterns that can cause and alleviate it. Learn more about the common nighthawk's inspiration at climate.ncsu.edu/nighthawk.



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Objectives

- Develop tailored, sector-specific information relevant for drought decisions in North Carolina
- · Deliver information in accessible and actionable formats
- Improve the transparency of the drought monitoring process

Phase 1 Activities

Who are we engaging?



In October 2018, we sent online surveys to extension agents, water resource managers, and NC Drought Management Advisory Council (DMAC) members to collect information about decision makers' current uses of and needs for drought information. 499 total surveys were disseminated, with a 28.1% response rate for all surveys and 14.8% response rate for fully completed surveys.

We conducted two follow-up webinars, one focused on agriculture and forestry (November) and one focused on water resources (December). Participants on the webinars (31 total) included NC DMAC members as well as Cooperative Extension personnel and water system managers. We shared results from the initial surveys and discussed preliminary ideas for resources and tools to develop as part of the project. Conversations with participants helped refine and prioritize the list of ideas. A post-webinar survey provided an opportunity for attendees to make additional recommendations.

Phase 1: What did we learn?

Communication Formats and Channels

Survey and webinar participants reported that they prefer:

- Translated or synthesized information, available in a variety of formats, ranging from alerts to factsheets to infographics
- · A balance of pushed and web-based content

Drought Monitoring Processes

- Survey respondents were almost evenly split between those who are aware of the NC drought monitoring process, the NC Drought Map, and/or the US Drought Monitor, and those who are unaware of these processes and products.
- Over half of respondents indicated that they consider the NC and US Drought Monitor maps only moderately accurate or are unsure about their accuracy.

Use of Drought Information

The most useful types of information include:

- Information about current and anticipated conditions (short-range forecasts, from several days to 1-2 weeks)
- Agriculture and forestry: precipitation and temperature observations and outlooks
- Water resources: 1-2 week precipitation forecasts and seasonal outlooks, and resources that provide information about streamflow and reservoir levels
- Local-level information: county-level for agriculture and forestry, basin-level for water resource managers

Key Needs and Priorities Identified

Phase 1 identified several key needs and priorities when it comes to drought information and communication:

- Information and formats that are clear, concise, and easily shareable through a variety of media.
- Information that better conveys forecasts, what those forecasts mean for going into (or out) of drought, and what to expect. Current drought maps and indicators are often retrospective, showing past conditions.
- Information that places drought into a geographic and water management context, while also conveying the "bigger picture."
- Better understanding and awareness of the NC drought monitoring process, how drought designations are determined, and where to find information.

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Next Steps

Phase 2 will begin in winter 2019 with a focus on prototype development. Prototypes will be evaluated during later project phases with information users from the agriculture, forestry, and water management sectors. Specific products will address the priorities identified in Phase 1:

- 1. Information in narrative form to accompany the NC Drought Map that synthesizes the weekly drought status in North Carolina and how this was determined
- 2. Resources that relate short- and long-range forecasts to drought conditions and local- and sector-specific effects in North Carolina
- 3. Agriculture and Forestry: Information that explains how to access, interpret, and apply more technical types of drought-related information

Water Resources: Resources aggregating statewide or basin-wide conditions including reservoir levels and precipitation totals

4. Resources that describe the NC DMAC, its purpose, its weekly drought monitoring process, and how this relates to the US Drought Monitor

For more information, please visit the project website (climate.ncsu.edu/nighthawk) or contact a project team member: Rebecca Ward (rebecca_ward@ncsu.edu), Corey Davis (cndavis@ncsu.edu), Kirsten Lackstrom (lackstro@mailbox.sc.edu), or Emily Foster (ekfoster@ncsu.edu).

For more information about Phase 1 activities and results, please see the full report: <u>climate.ncsu.edu/documents/nighthawk/Project_Nighthawk_Phase_1_Writeup.pdf</u>

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