NCORR

Albemarle Algal Bloom Summit

November 3, 2023

Resiliency

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NORTH CAROLINA OFFICE OF RECOVERY AND RESILIENCY

Sea Grant
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ALBEMARLE RC&D
RESOURCE CONSERVATION & DEVELOPMENT

Green $aves Green

C3HE
A NOAA CAP/RISA team

ALBEMARLE COMMISSION
REGION R COUNCIL OF GOVERNMENTS
Rural Planning • Senior Services & Nutrition • Workforce & Economic Development

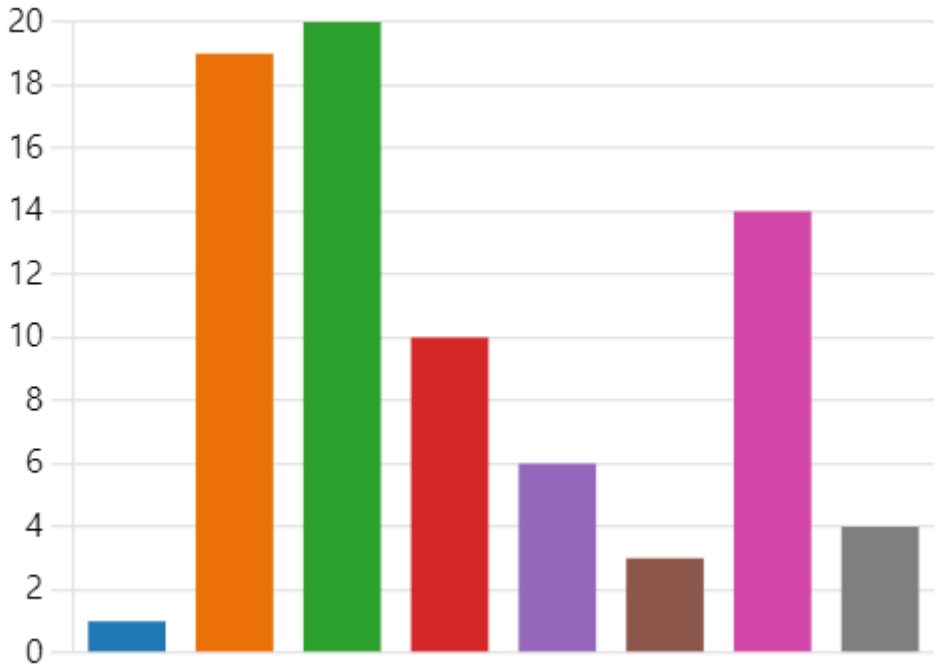
ARHS
Partners in Public Health

Albemarle - Pamlico
National Estuary Partnership

CEEG
CHOWAN EDENTON ENVIRONMENTAL GROUP

Algal Bloom Summit Attendance

Federal government	1
State government	19
Local government	20
Non-government organization, ...	10
Community organization	6
Community member	3
Academic organization	14
Other	4



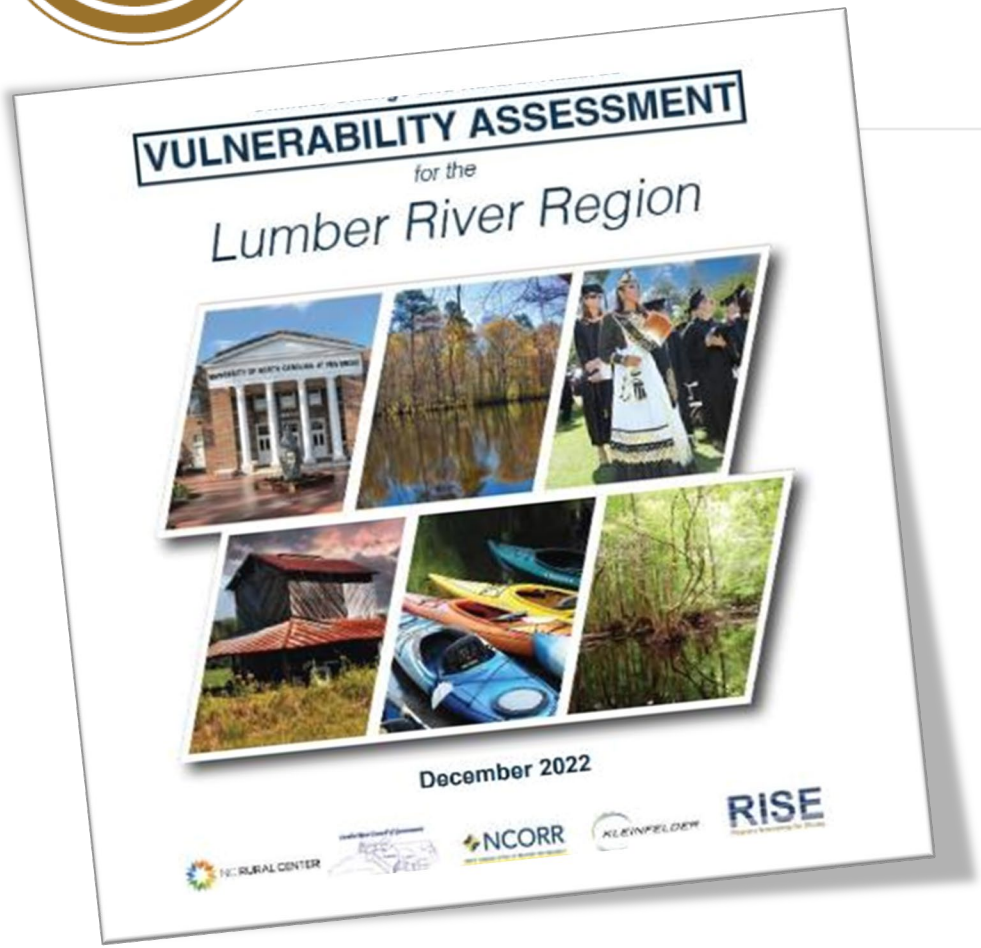
WHAT'S YOUR INTEREST IN ALGAL BLOOMS?

Resiliency

RISE
Regions Innovating for Strong Economies and Environment

Vulnerability Assessment	An analysis that brings science and local knowledge together to understand the region's greatest climate risks
Portfolio of Resilience Projects	A set of priority projects (capital or non-capital) with implementation pathways. Projects have some kind of regional benefit.
Stakeholder Engagement	Collective, informed, commonly-agreed-upon project portfolio. Stakeholder engagement strengthens working relationships and supports ongoing conversation about resilience in the region
Implementation Support	Help from NCORR staff to move projects toward implementation. May include holding meetings, researching options, providing written analysis, etc.

Resiliency



9 Regional vulnerability assessments

Portfolios of projects

55+ Total projects across nine regions

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Albemarle Portfolio

HARMFUL ALGAL BLOOMS RESEARCH, PREVENTION, AND IDENTIFICATION

Problem

The Albemarle Region is dominated by freshwater rivers and streams and brackish coastal waters. Contamination of these waterbodies can damage ecosystems, threaten fisheries, and negatively impact recreation and tourism. Algae blooms, especially those dominated by cyanobacteria (also known as blue-green algae), can occur when eutrophication occurs, resulting in rapid growth and reproduction of algae in what is commonly referred to as a "bloom." When waterbodies are inundated by water runoff with high levels of naturally occurring and manmade nutrients, the waterbodies become more vulnerable to algal blooms.

Algal blooms that cause adverse effects are known as Harmful Algal Blooms (HABs). When favorable environmental conditions exist, algae can reproduce rapidly and form blooms that appear as surface scums, water discoloration, or both. Blooms also cause major changes in water chemistry, including high pH and dramatic swings in dissolved oxygen. Lack of oxygen created by decomposing algal blooms sometimes results in fish kills and other aquatic life impacts.

Some algae, especially blue-green algae, can produce toxins. These toxins have been linked to adverse health effects in wildlife, domestic pets, and humans. The Division of Water Resources (DWR) currently tests samples for microcystin, one of the most common and well-studied algal toxins.

When public health concerns arise from algae blooms, local health departments and the N.C. Department of Health and Human Services determine an appropriate response with technical support from DWR. Common actions include swimming closures, contact advisories, and the issuance of public notifications. In addition to

Harmful algal blooms, or HABs, can take on a variety of forms including discolored water or surface scums that can appear bright green, blue, red, or brown in color; floating or submerged clumps, flecks, or mats; or milky blue/white surface scum. Suspected algal blooms should be reported to the North Carolina Division of Water Resources using the Fish Kill/Algal Bloom Reporting App.

environmental and public health concerns, blooms can lead to economic losses due to increased drinking water treatment costs, decreased tourism and recreation, remediation efforts, fisheries losses, and decreased property values.

During the 2015 to 2022-timeframe, multiple occurrences of algal blooms in the Chowan River, Perquimans River, Little River, and Pasquotank River, and Albemarle Sound were documented. As temperatures warm, and increased heavy rainfall events combine with increased development, the frequency and duration of HABs may become more commonplace. Equal to the complexity of the problem are the number of efforts and organizations working to address this problem. While there has been a great deal of effort working on the blooms in the region, increased collaboration across interested stakeholders is needed to determine a cause of the blooms and what next steps are needed.

Albemarle Portfolio

Steps for Implementation

There has been a great deal of work and effort on this project within the last five years involving many stakeholders.

The Chowan and Pasquotank River Basin Water Resources plans outlines relevant information specific to implementation of this project including various related initiatives, involved stakeholders, and funding. There are recommendations specific to algal blooms that support the project including:

- expanding education and outreach to improve digital bloom reporting;
- tracking health-related algal events including closures and advisories;
- developing/expanding local capacity to monitor for algal blooms and algal toxins; and
- coordinate and facilitate semi-annual meetings between state agencies, local agencies, and stakeholders to discuss water quality concerns.

The Albemarle Resources Conservation and Development Council (Albemarle RC&D) website also has a very succent summary of recent events and stakeholders, including minutes and presentation from recent actions and general outreach for residents.

Implementation for this project should support, not duplicate, efforts already underway.

Step 1: Meeting and Assessment: In Step 1, the Albemarle Commission, in conjunction with Albemarle RC&D and other key stakeholders, will invite supporting agencies, local governments, and other stakeholders to attend a meeting to discuss the current status of research and efforts by all the engaged groups and stakeholders. The goal of meeting will be to learn about all the status of recent efforts, informational needs, data gaps, target audiences, and outreach strategies surrounding HABs in the Albemarle Region. This meeting could mirror and update action since the last major meeting in the region, February 2020 (see minutes on the Albemarle RC&D website). The group should explore and determine next steps to work cooperativity to manage and address the algal bloom problem. This should include some type of outreach to the public. The group could consider setting up a more routine meeting schedule and determine when the group will meet again. It may be helpful if the group can determine a way to communicate the status of actions with the entire group after the initial meeting such as an email group or Teams Group.

Step 2: Meeting Follow Up and Next Steps. At the initial meeting, the group should have identified next steps. The Albemarle Commission and Albemarle RC&D should communicate regular updates and collect status on action items. These items could be posted on a website in a central location. Additionally, project leads could discuss and decide how to outreach updates not only to the stakeholder group, but local governments, their elected body, and any other important identified groups or parties. Project leads should host another meeting at the identified time.

Implementation Timeframe

This project has a short implementation timeframe. Convening of Phase 1, Meeting and Assessment should be able to be completed within the 2023 year.

Integration with Existing Plans, Programs, and Policies

Next steps actions, identified by the stakeholder group could be integrated into local government land use, comprehensive, hazard mitigation, stormwater, or similar planning efforts. Any updates in policy or findings should be integrated in the Chowan and Pasquotank River Basin Plans.

Resiliency

"…the planning effort from the very beginning discouraged people from pointing fingers at a single source of the blooms. The partnership has always stated that everyone is a part of the problem, and that everyone will be part of the solution."

Mark Powell, Past ARCD Executive Director

Want to know more? Reach out!

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