



2021 Chowan River Basin Water Resources Plan - Draft

*Department of Environmental Quality
Division of Water Resources
Planning Section*



Chowan River Basin Water Resources Plan Outline

- ❑ General overview of the basin plan process and the Chowan River Basin Water Resources Plan.
- ❑ Review recommendations for protecting water resources in the Chowan River basin



Image Courtesy: Eric Fleek, Biological Assessment Branch NCDEQ

General Statute §143-215.8B
Basinwide Water Quality Management Plans

North Carolina General Statute Chapter 143, Article 21 ([§143-215.8B](#))

- a) The Commission shall develop and implement a basinwide water quality management plan for each of the 17 major river basins in the State. In developing and implementing each plan, the Commission shall consider the cumulative impacts of all of the following:
- 1) All activities across a river basin and all point sources and nonpoint sources of pollutants, including municipal wastewater facilities, industrial wastewater systems, septic tank systems, stormwater management systems, golf courses, farms that use fertilizers and pesticides for crops, public and commercial lawns and gardens, atmospheric deposition, and animal operations.
 - 2) All transfers into and from a river basin that are required to be registered under [G.S. 143-215.22H](#).



General Statute §143-215.8B
Basinwide Water Quality Management Plans

NC General Statute Chapter 143, Article 21 (§[143-215.8B](#))
continued...

b) Each basinwide water quality management plan shall:

- 1) Provide that all point sources and nonpoint sources of pollutants jointly share the responsibility of reducing the pollutants in the State's waters in a fair, reasonable, and proportionate manner, using computer modeling and the best science and technology reasonably available and considering future anticipated population growth and economic development.
- 2) If any of the waters located within the river basin are designated as nutrient sensitive waters, then the basinwide water quality management plan shall establish a goal to reduce the average annual mass load of nutrients that are delivered to surface waters within the river basin from point and nonpoint sources.



10 Year Cycle

Basinwide Sampling

- Biological
- Ambient
- Lake

5 Years

Data Gathering

- ESS Reports/Studies
- Statistical Trend Analysis
- Gathering other data and watershed reports

2 Years

303(d) Listing

1 Year

Grants/ ERC Report

8, 10, & 12-Digit Narratives / GIS

- Non-Statistical Trends
- Restoration Status
- Watershed Issues
- Collaboration with other interested parties
- Basin/Watershed Maps

Sampling Design

- Plan changes from current sampling plan
- Special Studies

Modeling

Permitting

- CAFOs
- NPDES WW & SW
- Non-Dischargers
- Trout Farms
- Etc.

5 Years

Finalize Plans

- Internal Review
- Public Review
- WQC Draft
- EMC Approval
- Post each version on web
- NSW follow-up

Recommendations/ Action Plans

- ID WQ needs at different scales
- Coordinate action plans internally and externally

Basin Planning



Basin Planning History

Currently Completing Cycle 4

➤ Cycle 1 (1993-1998)

- Focused on large basin-scale issues with the goal of communicating the state's rational, approach and recommended long-term water quality management strategies for each basin to policy makers, regulated communities and the general public.
- Improved program efficiencies, provided consistent decision-making for issuing permits on a basinwide scale and water quality improvement strategies, and promoted integration of point and nonpoint source pollution assessments and controls.

➤ Cycle 2 (1998-2003)

- Replaced much of the general basinwide information with more detailed subbasin specific information. Included development of use support/impaired waters assessment (used for generating EPA's 303(d)/305(b) list for the state) and emphasis placed on identifying causes and sources of pollution for individual streams in order to facilitate local restoration efforts.

➤ Cycle 3 (2002-2008)

- Similar to cycle 2, a major portion of the plan focused on development of use support for the EPA 303(d) impaired waters list, source identification, local initiatives and accounting of grant and cost share funds used to address pollution sources.



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➤ Cycle 4 (2009 - present)

- Early cycle 4 plans continued to focus on reporting use support and impaired water status as well as implementation measures and development of local recommendations. (Use support assessment was changed to a semi-automated statewide assessment in 2008. Use support now referred to as water quality assessments and no longer completed by basin planners).
- Transitioned to evaluating quantitative water quality changes and trends assessments, identifying causes and sources of pollutants where possible, working with local and resource agencies to focus on water quality implementation efforts as well as reviewing nutrient management strategies where applicable.
- Basin plans completed since 2014 also include an evaluation of water quantity in order to produce a comprehensive basin water resources plans.
- Six basins plans needed to complete cycle 4 include: Broad River, Cape Fear River, Chowan River, Pasquotank River, White Oak River and Yadkin-Pee Dee River.
- While these plans are prepared by the Division of Water Resources (DWR), their implementation and the protection of water resources entail the coordinated efforts of many agencies, local governments and stakeholder groups in the state. These plans are not a rule; however,



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Basin Water Resources Plans

- Goals
 - Provide scientifically-based water quality and quantity analysis for planning purposes
 - Provide recommendations for implementation measures by water resource agencies and volunteer watershed groups
 - Provide ongoing support for watershed restoration and protection efforts
- Public education
 - Water quality and water quantity (water demand)
 - Point and nonpoint sources of pollution
 - Protection measures
- Provide guidance to support decisions about water resources management
 - Permitting strategies
 - Nutrient management strategies
 - Watershed restoration planning and implementation of best management practices
 - Water supply and demand



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Basin Water Resources Plans Outline



Basin Characteristics

- Geography
- Population and land cover
- Nonpoint source pollution



Monitoring Data and Water Quality Assessment

- Overview of biological, chemical and physical parameters



Permitted and Registered Activities

- General descriptions of existing water resource programs



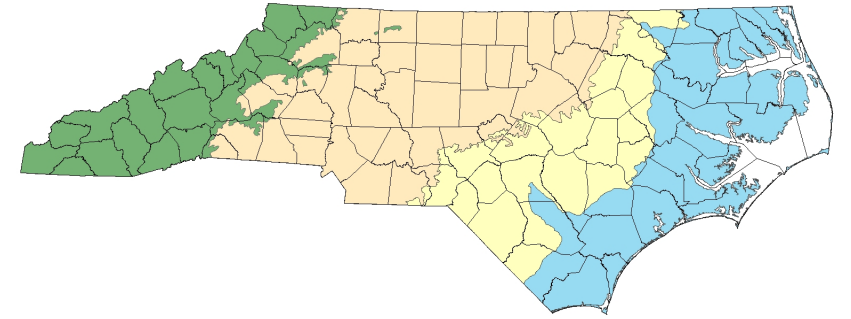
Water Use and Availability

- Summary of water use in the basin



Watershed Chapters (HUC 8)

- Watershed specific information and recommendations



Chowan River Basin Water Resources Plan Overview

- ❑ Chapter 1: Basin Characteristics
 - ❑ Geography
 - ❑ Population and land cover
 - ❑ Nonpoint source pollution
- ❑ Chapter 2: Monitoring Data and Water Quality Assessment
- ❑ Chapter 3 and 4: Watershed Chapters (HUC 10)
- ❑ Chapter 5: Nutrient Sensitive Water Summary
- ❑ Chapter 6: Water Quality Initiatives and Funding
- ❑ Chapter 7: Permitted and Registered Activities
- ❑ Chapter 8: Water Use and Availability



Chowan River Basin Water Resources Plan Recommendations

- Agriculture Best Management Practices (BMPs) and Waste Management
- Developed Areas
- Nutrients in the Chowan Basin and Albemarle Sound
- Interstate Cooperation
- Streamflow Research
- Administrative, Communication, and Public Relations
- Climate Change
- Forestry and Water Quality
- North Carolina Department of Environmental Quality
- Water Use and Demand



Chowan River Basin Water Resources Plan Recommendations

1. Identify and evaluate opportunities to continue promoting and implementing nutrient reducing BMPs throughout the basin.
2. There is a need to provide new financial support and additional staff to state agencies and review the Chowan River basin Ambient Monitoring System program.
3. Establish better communication between Virginia DEQ, North Carolina DEQ, and the Albemarle-Pamlico National Estuary Partnership.



Chowan River Basin Water Resources Plan Recommendations

5. Continue to support and expand the ambient monitoring of groundwater in the Chowan River basin and statewide through the Ground Water Management Branch.
6. Consider implementation of nonpoint source management strategies.
7. Consider financial incentives to promote strategic preservation or restoration of riparian areas.
8. Information about water use needs to be collected from all water user.
9. Continue to work with the Nutrient Criteria Development Plan Scientific Advisory Council to develop appropriate protective criteria.

Basin Water Resources Plans

River Basin	Present to EMC	Basin Planner(s)	EMC Basin Liaison
Chowan	January 2021	Shepherd/Raquet/Deamer	Harris
White Oak	May 2021	McMillan/Raquet/ Hoffman/Shepherd	Lazorick
Pasquotank	July 2021	Shepherd/Raquet/ Deamer (nutrients)	Arata
Neuse	March 2022	Oggeri/Deamer (nutrients)/Tarver	Upper – Anderson Lower - Keen
Roanoke	January 2024	Shepherd/Deamer	Carter
Tar-Pamlico	January 2026	Deamer/Raquet	Lazorick

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