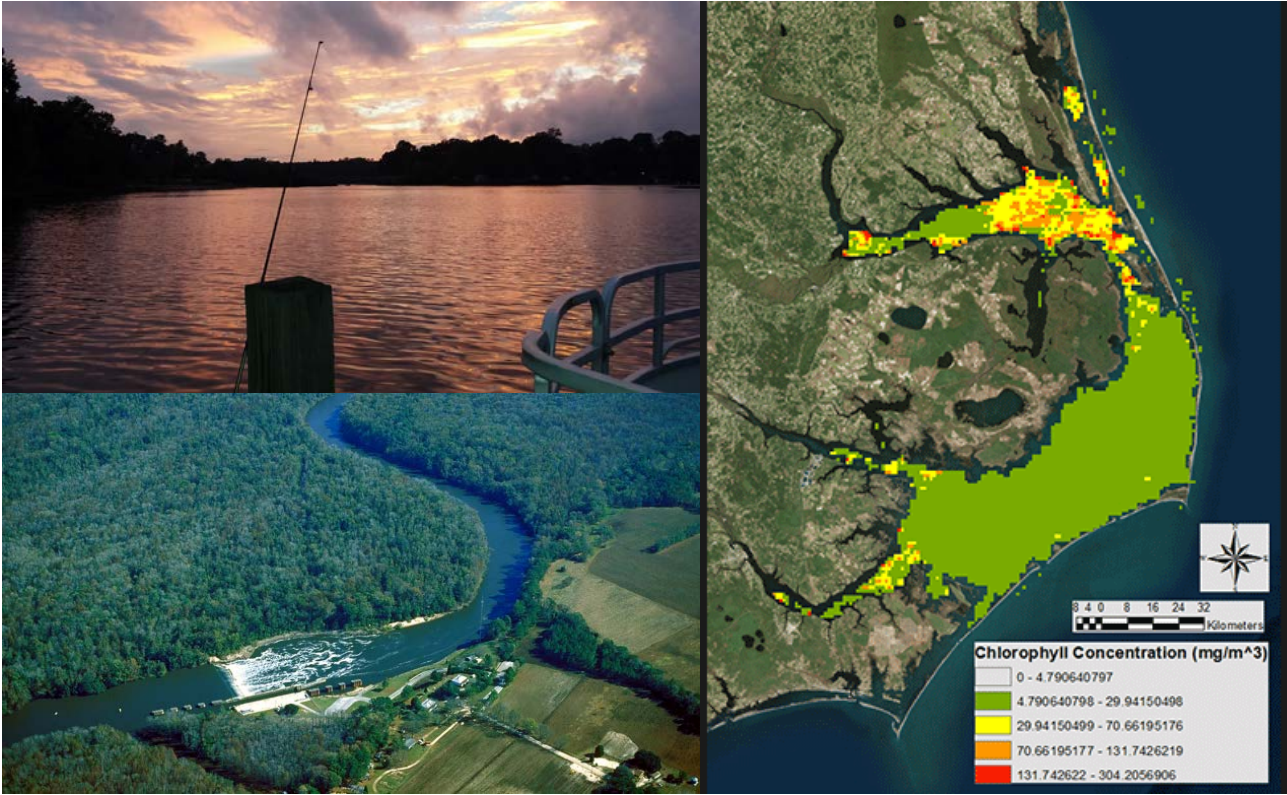


NC's Nutrient Criteria Development Plan: A Summary and Status Update



Brian Wrenn
N.C. Division of Water Resources
December 1, 2017

Talking Points

- History and background of nutrient criteria development in NC
- Roles of the Scientific Advisory Council and Criteria Implementation Committee
- Current Status of NCDP
 - High Rock Lake
 - Central Cape Fear
 - Albemarle Sound



Nutrient Criteria Development in NC

- 2001 - Federal Register notice, states encouraged to develop nutrient management plans.
- 2004 - NC developed the Nutrient Criteria Implementation Plan (NCIP)
- 2011 - EPA memo to regions placing new emphasis on nutrient reductions
- 2012 - NC Forum on Nutrient Over Enrichment
- 2014 - Nutrient Criteria Development Plan (NCDP)



FEDERAL REGISTER
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Nutrient Criteria Development Plan

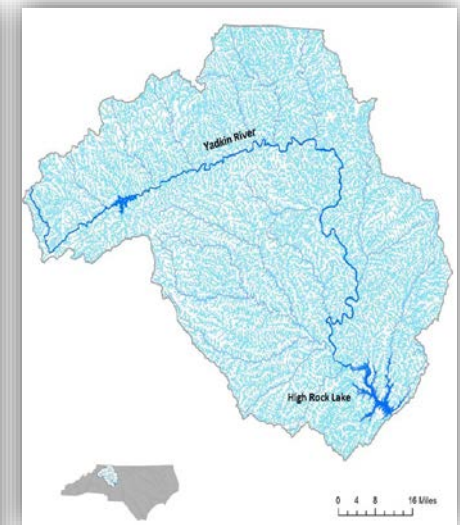
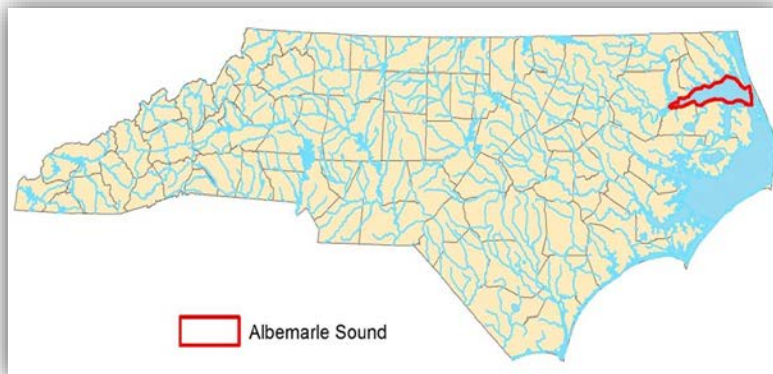


- Links nutrient concentrations with protection of designated uses including downstream uses
 - Fishable, swimmable, boatable
 - Trout waters, public water supply, primary nursery areas, etc.
- Evaluate causal and response variables (nutrients, chlorophyll *a*, pH, dissolved oxygen, etc.)
- Express numerically or in narrative form with a numerical translator
 - Concentration
 - Mass quantities or loadings



Nutrient Criteria Development Plan

- Develop criteria for three water body types
 - Landscape position, flow dynamics, sensitive species
 - Lakes/reservoirs, rivers and streams, estuaries
- Specific water bodies
 - High Rock Lake
 - Central Cape Fear River
 - Albemarle Sound



SAC and CIC

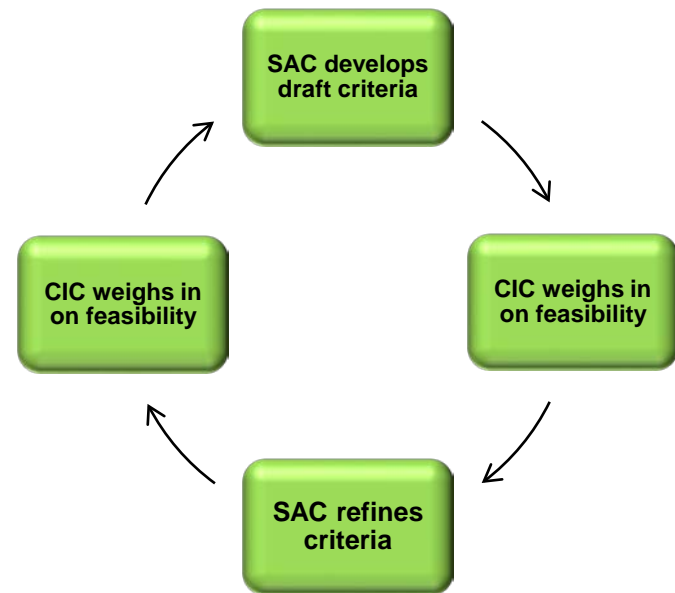
- Scientific Advisory Council (SAC) created

- Tasked with developing scientifically-defensible nutrient criteria
- Made up of experts in water quality, nutrient management, nutrient abatement

- Criteria Implementation Committee (CIC) created

- Tasked with commenting on the social and fiscal impacts of draft nutrient criteria on stakeholders

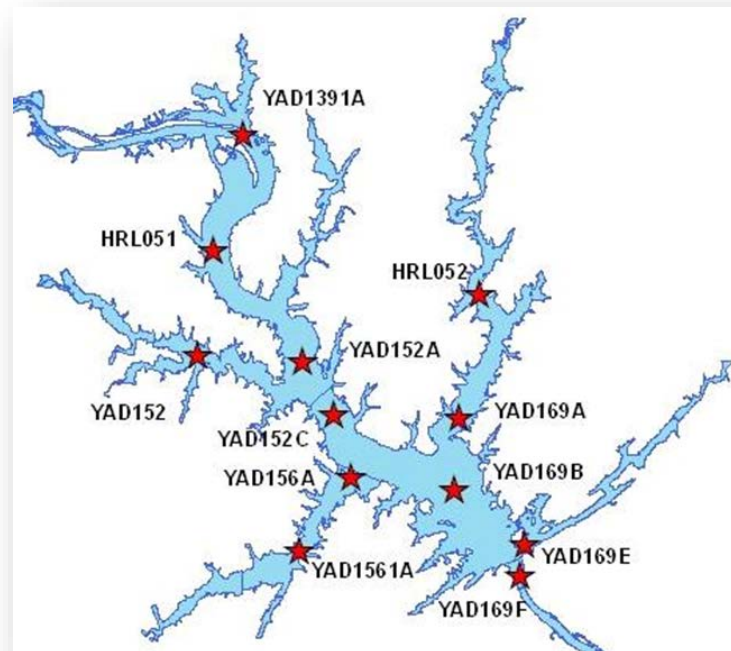
- Made up of economists, stakeholder representatives, and academics



Status Update: High Rock Lake



- SAC has met 17 times with discussions focused on High Rock Lake (HRL)
- Supporting research efforts completed
- Conceptual model developed
- Working through criteria development for each parameter



Estimated HRL Timeline

- Complete draft numeric nutrient criteria in mid to late 2018.
- CIC input by Spring 2019.
- Presentation of draft criteria to EMC in late 2019.
- Adoption of criteria into administrative code by July 2021.



Status Update: Central Cape Fear



- SAC beginning discussions of nutrient criteria development for Central Cape Fear River (CCFR)
- DWR Nutrients/DO model development to support NCDP
- Monitoring for model to begin early 2018
- Periphyton monitoring project started Fall 2017
- Applied university research underway



Estimated CCFR Timeline

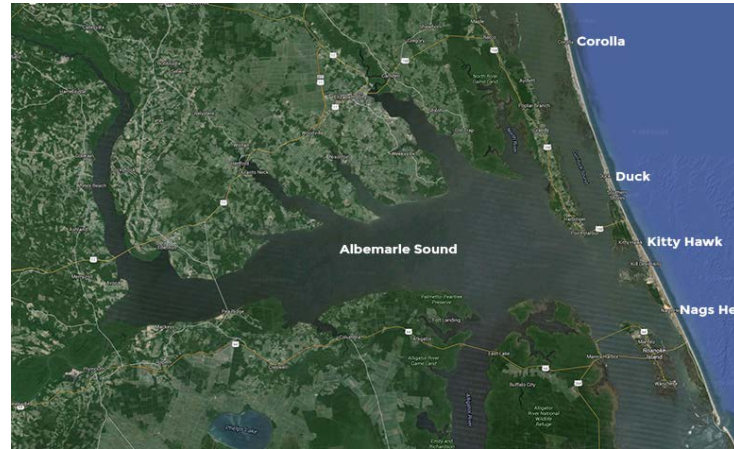
- Nutrient monitoring and bioassay studies to began late 2017-early 2018
- Criteria evaluations begin late 2018
- CIC input by mid 2021
- Draft criteria presentation to EMC by late 2021



Status Update: Albemarle Sound



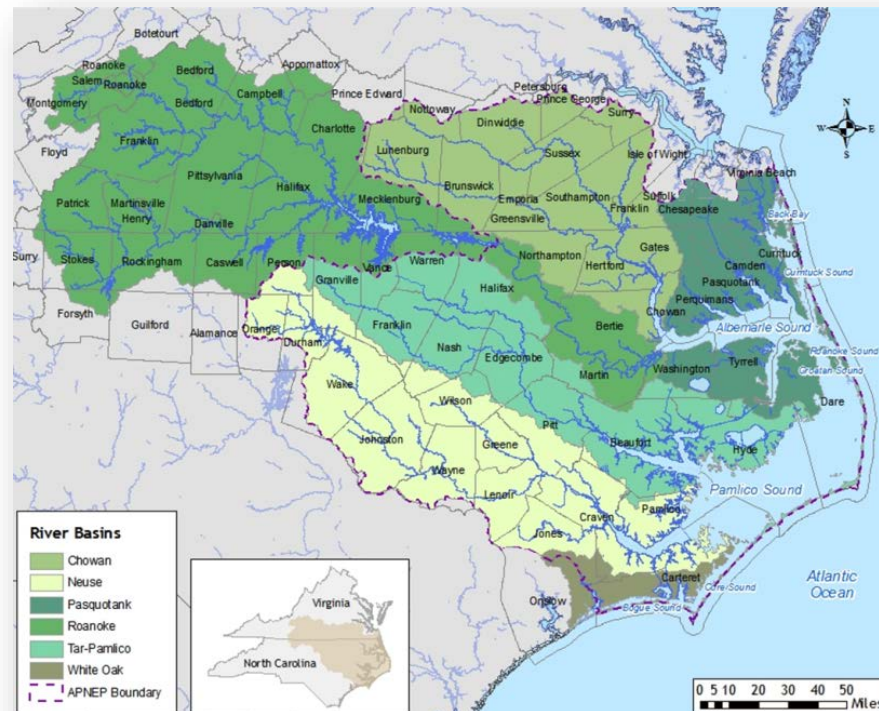
- Two Phase approach identified in NCDP document
- Phase I
 - Each potential criteria parameter to be discussed and prioritized
 - Additional research needs to be identified during evaluation process
- Albemarle-Pamlico National Estuary Partnership (APNEP) began Phase I in mid-2014
- Met 9 times
- Phase I report pending



Status Update: Albemarle Sound



- Additional research underway with priority areas of investigation including bioassays, investigation of light attenuation models
- Phase II reevaluation of Albemarle Sound criteria to be conducted by SAC/CIC beginning mid-late 2018.



Questions?

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