

# The North Carolina Monitoring Coalition Program

*Partnerships for  
Communication & Cost Savings*

**Carrie Ruhlman**

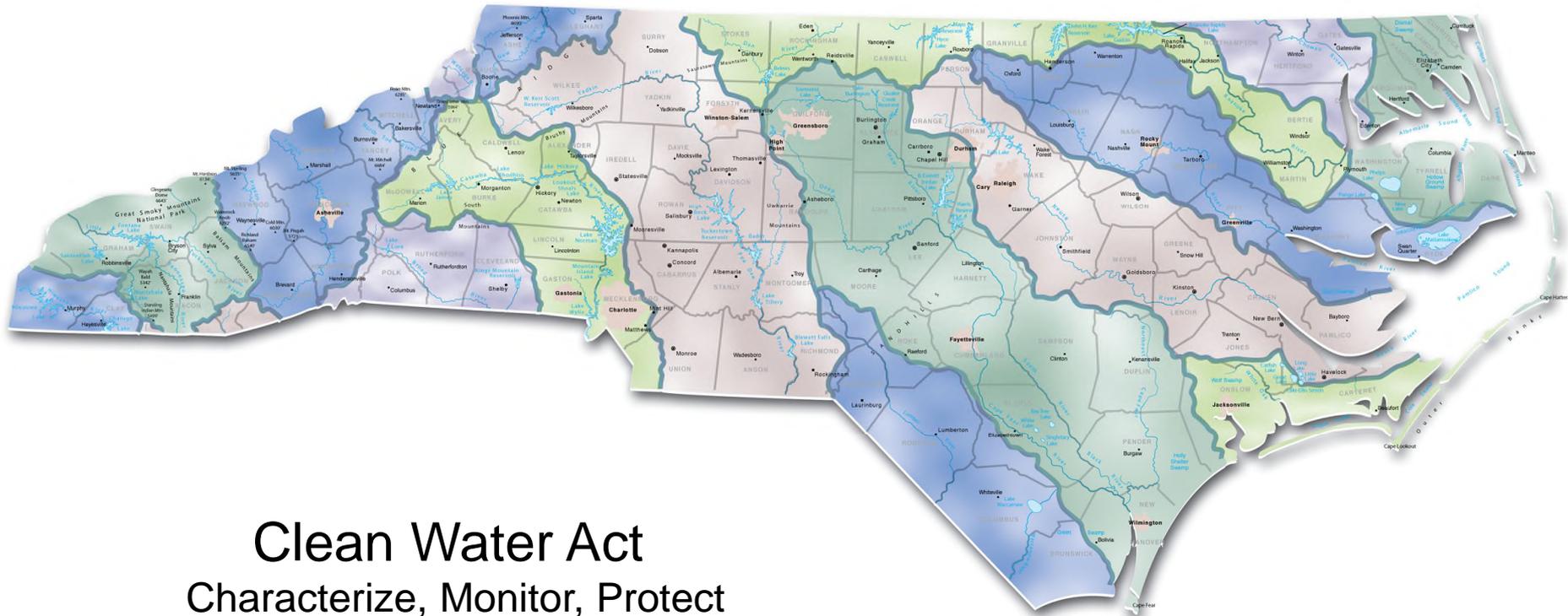
**Monitoring Coalition Coordinator**

**NC Dept. of Environment & Natural Resources  
Division of Water Resources**



# North Carolina

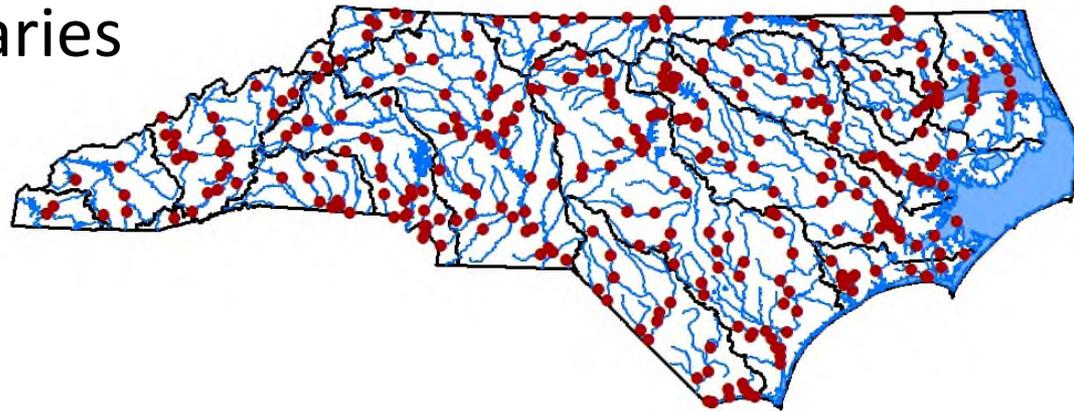
- 63,000 miles of streams
- 260,000 acres of lakes



Clean Water Act  
Characterize, Monitor, Protect

# DWR Monitoring

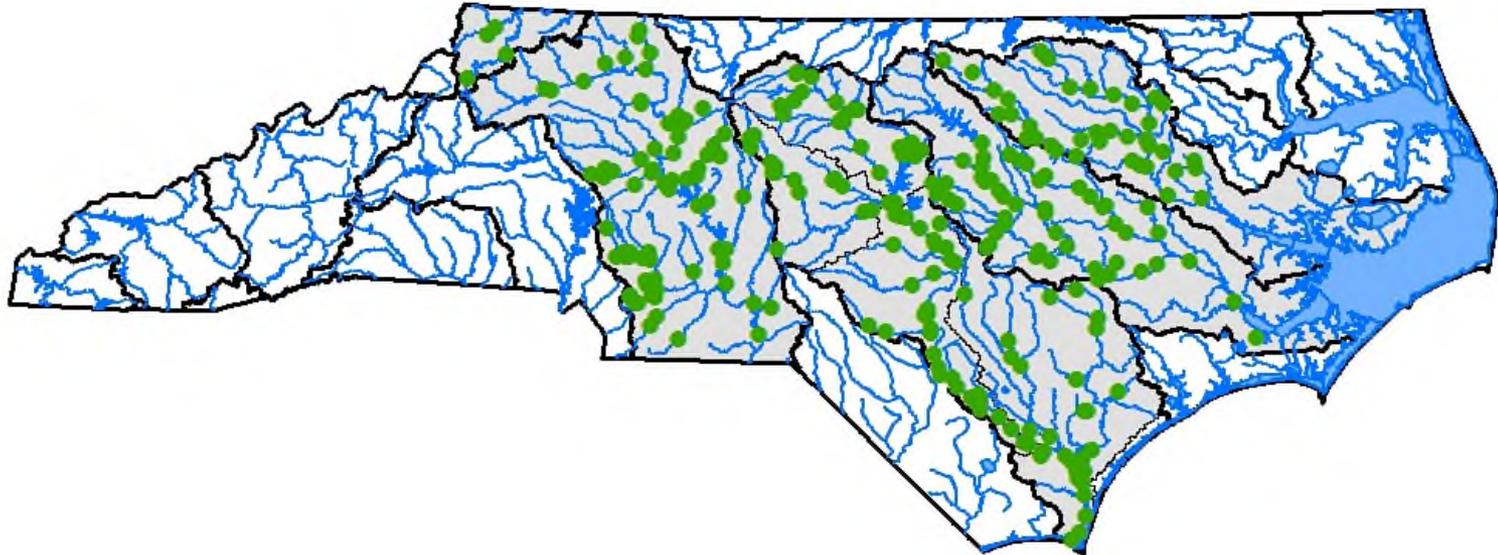
- Ambient Monitoring System (AMS)
  - Long-term, site-specific water quality data – 40+ years
  - Rivers, streams, estuaries
  - 323 active stations



- Random Ambient Monitoring System (RAMS)
  - Short-term water quality (2007 – current)
  - Small freshwater streams

# Coalition Monitoring

- Ambient monitoring
  - Long-term, site-specific
- Large and small streams
- 263 active stations



# Coalition History - Neuse River

- 1979 – 1<sup>st</sup> documented report of excessive algae on the Neuse
  - Persistent blooms
  - DO problems
- Continued through the 1980s and early 1990s



# Time to Take Action

- Neuse = 1<sup>st</sup> Basin-Wide Water Quality Management Study Area
  - NPDES upstream/downstream monitoring requirements
  - Compliance data review - **Could we do this better?**

Establish strategic monitoring program to replace routine compliance monitoring



# The 1<sup>st</sup> Monitoring Coalition

- Preserve the waters of the Lower Neuse River through innovative and cost-effective pollution reduction strategies
- Collect data to model the Neuse estuary

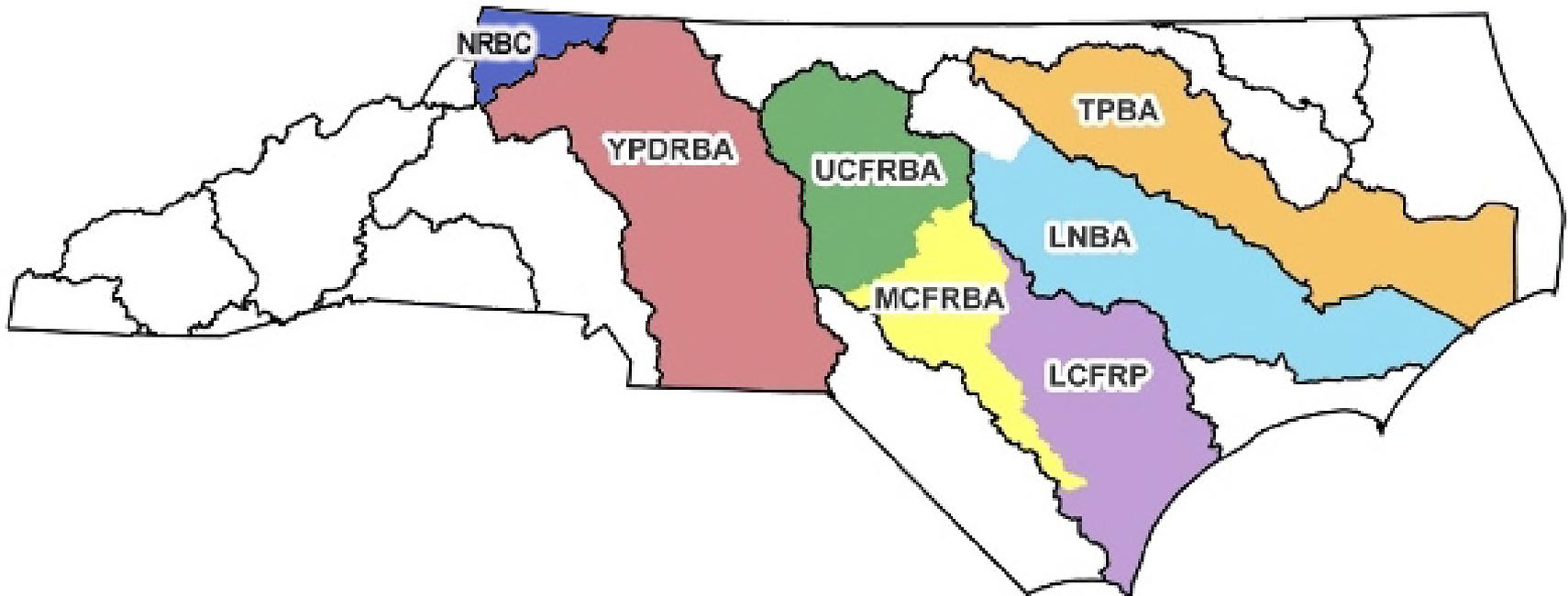
***Lower Neuse  
Basin  
Association, Inc.  
July 1994***

**LOWER NEUSE BASIN ASSOCIATION, INC.**

*Preserving the Waters of the Lower Neuse River*



# Current Monitoring Coalitions



**7 Coalitions in 5 River Basins**

# What are Monitoring Coalitions?

- Permitted dischargers & other stakeholders (coalition's discretion)
- Coordinate resources to collectively fund and perform a monitoring program



# Monitoring Coalition Program

- Voluntary ambient monitoring program
- Coalitions are managed by members
- Each coalition is unique
  - Watershed assessment
  - Coalition interests
  - Watershed specific issues

***Most effective and efficient use of  
available resources***

# Why Coalitions?

- Increased efficiency
- Consistent, quality data
- Improved communication & cooperation

***Ability to participate in watershed management with “minimal” financial investment***

***In-stream monitoring requirement waiver***

# How it works

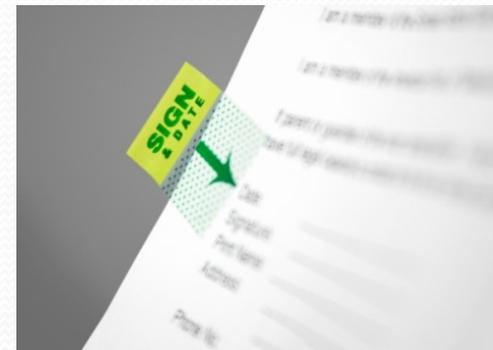
- Members agree to take financial responsibility for ambient monitoring program in their basin
- Negotiation
  - What is financially feasible?
  - What impacts are we looking to assess?
  - Is there a “good” place to monitor (gages, compliance points, etc.)?

***GOAL = Maximize resources, expand coverage,  
produce quality data***

# Documentation

## Memorandum of Agreement (MOA)

- Sampling locations
- Parameters
- Sample collection
- Monitoring frequency
- Analysis
- Data/Reporting
- 5-year cycle
- Waive in-stream requirements



# Sample Collection

- Contracted
- Monthly/EOW Summer
- Bridges/overpasses
- Field Monitoring Guidance Document
- 10% overlapping stations



# Laboratory Analysis

- DWR-certified lab
- Approved methods
  - 40 CFR part 136
  - Other DWR certified methods



## Field Parameters

Temperature  
pH  
Dissolved Oxygen  
Conductivity

## Nutrients

Ammonia  
Total Kjeldahl Nitrogen  
Nitrate/Nitrite  
Total Phosphorus

## Others

Turbidity  
Total Suspended Solids  
Chlorophyll a  
Fecal Coliform

# Data

- Consistent
- Comparable
- Compiled
  - DWR Database
  - EPA STORET Database



***Not used for NPDES compliance***

# Data Usage



- DWR – Regulatory & Non-Regulatory
  - Basin Assessment Reports & Basin Plans
  - Integrated Report/303(d)
  - Regional office projects
  - Permitting
  - 319 projects/research

- Coalition Members
  - TMDL participation
  - Support for grants
  - Support academic research
  - Monitor facilities, NPS impacts and BMPs

# Constant Change

- Interests change
- Members change
- Issues change
- Waters change

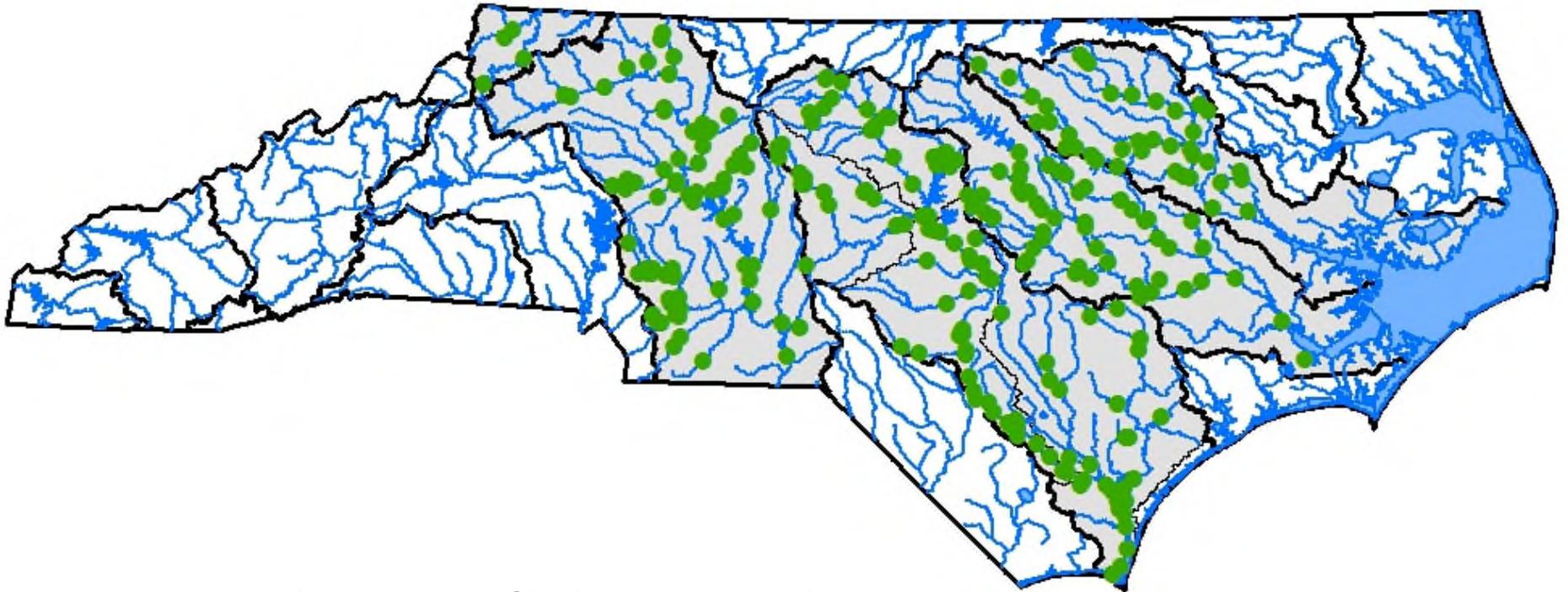


# Adapt and Evolve

- Re-evaluate stations at least every 5 years
- MOA = “living ” document
- Move, re-arrange, negotiate



# Current Coalition Monitoring



**263 Active Coalition Stations**

**Carrie Ruhlman**

**DWR Monitoring Coalition Coordinator**

**Water Sciences Section**

**[carrie.ruhlman@ncdenr.gov](mailto:carrie.ruhlman@ncdenr.gov)**

**(919)743-8411**

<http://portal.ncdenr.org/web/wq/ess/eco/coalition>

