

North Carolina's Basinwide Planning Program

Division of Water Quality
Department of Environment and
Natural Resources



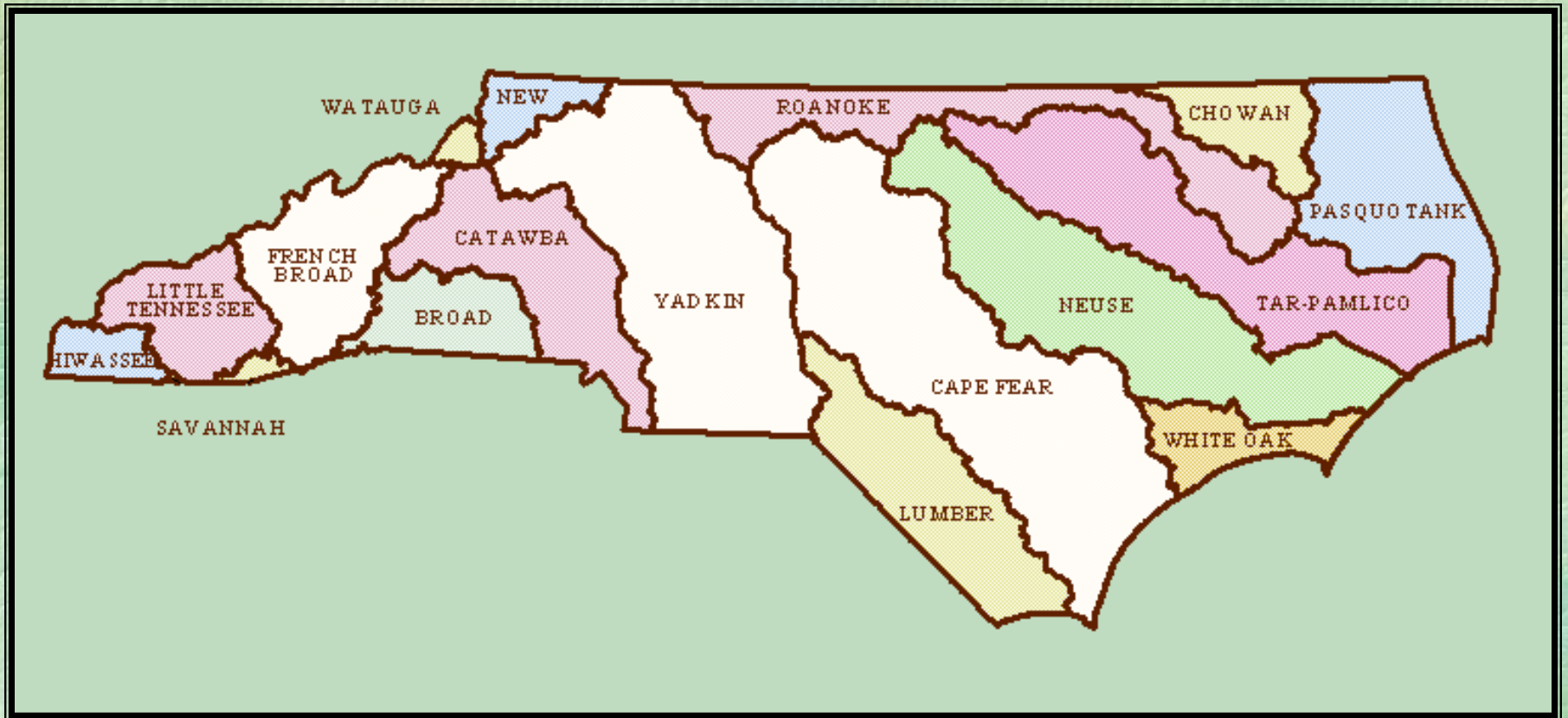
Presentation Overview

- Basinwide Planning Program
- Basinwide Plans
- Surface Water Classifications
- Use Support
- Roanoke, Chowan, Pasquotank River Basins



Basinwide Planning Program

Applies to All 17 River Basins



Basinwide Planning Goals

- Identify water quality problems and restore impaired waters;
- Identify and protect high value resource waters;
- Protect unimpaired waters and support responsible economic growth.

Basinwide Planning Objectives

- Work with other agencies to develop appropriate management strategies;
- Assure equitable distribution of waste assimilative capacity;
- Better evaluate cumulative effects of pollution; and
- Improve public awareness and involvement.

Basinwide Planning Benefits

- Fosters public participation
- Focuses resources
- Fosters comprehensive NPDES permitting
- Uses sound ecological planning
- Integrates and coordinates programs and agencies.

Basinwide Plans Contain:

- Specific management strategies for point sources
- General recommendations for nonpoint sources
- Collaboration by nonpoint source agencies, voluntary initiatives, local governments and other citizens
- Guidance for obtaining funds for projects

Basin Plan Structure

General Information about the Basin,
Impacts and Solutions

Subbasin and Watershed Information
Water quality data & watershed specific
recommendations

Current and Future Initiatives
Current initiatives, success stories, and
future initiatives

Public Input - 5 year

- Help define critical issues
- Assist in identifying problem areas
- Help develop and implement pollution control strategies
- Identify others that should be involved

Public Input on Draft Basin Plan

- Seek input on Draft Basin Plan
- At least 30 day comment period
- Comments accepted by mail & email
- Revisions are made as needed to enhance, correct or clarify the plan.

Ongoing Initiatives

- Emphasize the vital role of public participation
- Focus on implementation
- Foster program linkages
- Improve use support methodology
- Conduct additional monitoring

Other Involved Agencies & Organizations

- *DENR Agencies & Divisions:*
 - Coastal Management
 - Soil and Water Conservation
 - Forest Resources
 - Environmental Health
- *APNEP*
- *Ecosystem Enhancement Program*

- *Federal Agencies:*
 - USACE
 - USFWS
 - USGS
 - NRCS
- *Council of Governments*
- *CWMTF*
- *Watershed Organizations*
- *Academia*
- *State of VA – DCR, DEQ*



Water Quality Classifications

Primary Classifications

Fresh Water- C, B, WS I-V

Salt Water- SC, SB, SA

Supplemental Classifications

NSW - Nutrient Sensitive Waters

HQW - High Quality Waters

ORW - Outstanding Resource Waters

Sw – Swamp Waters

- Example: New River - C NSW, SB NSW, SC NSW and SA HQW



Class C: Aquatic Life Protection & Secondary Recreation



Class B: Primary Recreation & Class C Uses



**Class SA:
Commercial
Shellfish
Harvesting
and Primary
Recreation**

Photo By: Bob Williams



WS-I through WS-V: Water Supplies

What Are 'Designated Uses'?

Based on NC Surface Water Classifications:

- protection and propagation of aquatic life
- recreation
- shellfish harvesting
- fish consumption
- water supply

Uses are defined in rules as:

- narrative and numerical standards

DWQ Data Collection

- Aquatic Macroinvertebrates
- Fish Community Assessments
- Ambient Sampling
- Fish Tissue Analyses
- Toxicity Tests
- Lakes Assessment

Aquatic Macroinvertebrates



Number of Insects
Diversity of Species

Abundance of Species
Pollution Tolerance



Fish Community Assessments



Ambient Monitoring Data

.....



Samples Collected Monthly,
27 Parameters Analyzed

Toxicity Testing & Fish Tissue Analyses



Lakes Assessments



Determining how well a water supports its designated uses (based on its classification) is a means of interpreting data and assessing water quality.

These assessments result in use support ratings.

Use Support Categories

Aquatic Life - Applies to all waters

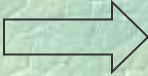

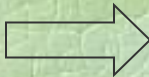
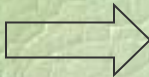
Recreation - Applies to all waters

Shellfish Harvesting - Applies to SA waters only

Fish Consumption - Applies to all waters

Water Supply - Applies to WS waters only

Use Support Ratings

- **Supporting**  **Criteria Not Exceeded**
- **Impaired**  **Criteria Exceeded**
- **Not Rated**  **Inconclusive Data**
- **No Data**  **No Assessment Made**

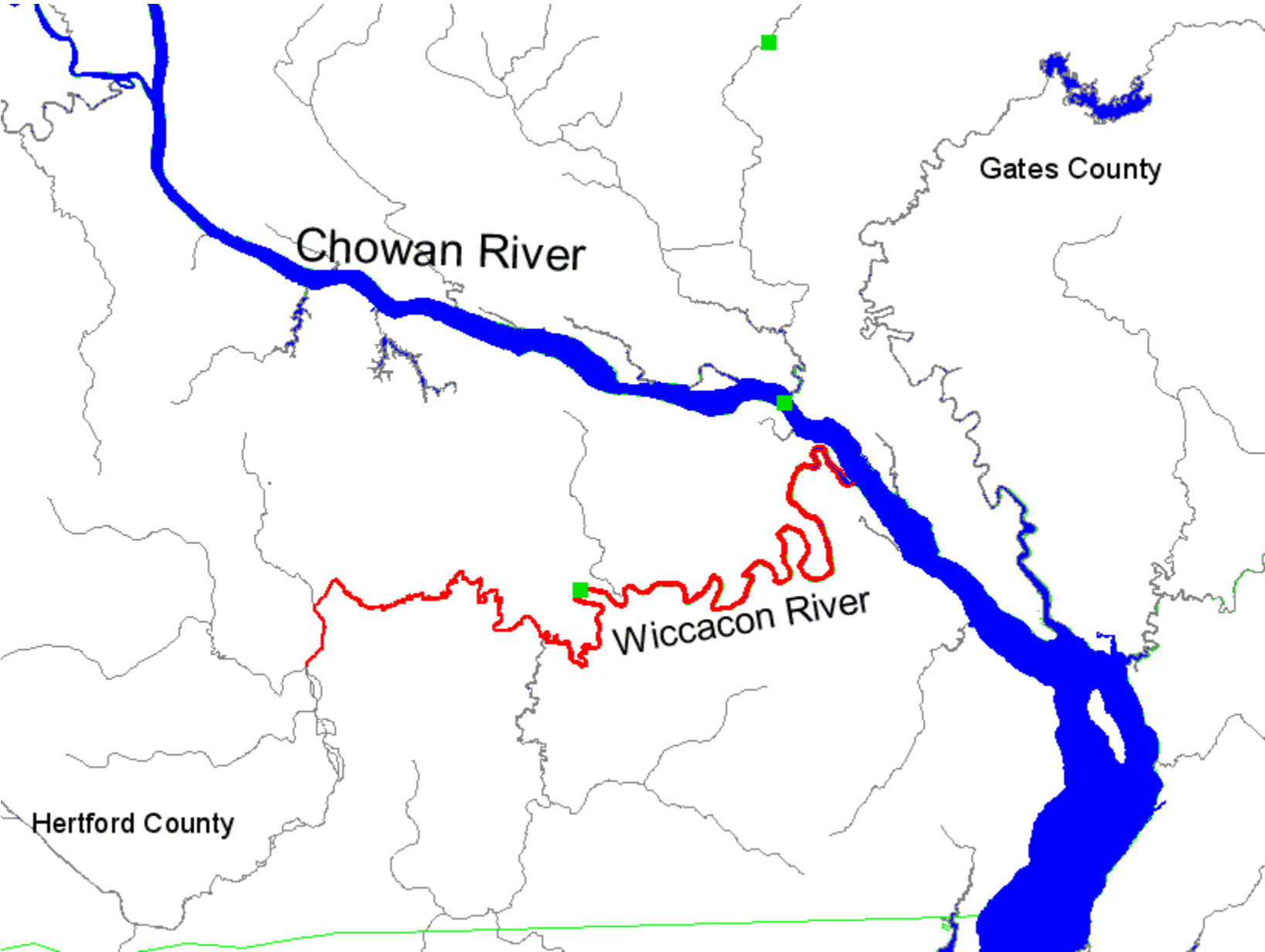
Aquatic Life

Assessed for All Waters -
C, SC, B, SB, SA, WSI-WS-V

Use Support Assessment based on:

- Biological Monitoring Data - Direct Measure of aquatic life
- Ambient Monitoring Data - Numerical Measure (criteria based on standards)

Example: Impaired for Aquatic Life



Aquatic Life

Ambient Monitoring Criteria based on Standards

Parameters Assessed:

DO, pH, Chlorophyll *a*, Turbidity

- Waters that exceed standard in greater than 10% of samples are **Impaired**.

Recreation

Assessed for All Waters -

C, SC, B, SB, SA, WSI-WSV

Parameter Assessed: Fecal Coliform Bacteria

- Ambient Monitoring Stations
- DWQ Special Studies
- DEH Recreational Monitoring Advisories (RECMON)

Recreation

- Fecal coliform criteria exceeded when annual evaluation shows geometric mean >200 or 20% of samples >400 colonies/100 ml.
- Class B, SB and SA waters that exceed fecal coliform criteria are prioritized for resampling to assess the standard.
- Class C, SC and WS waters that exceed fecal coliform criteria receive lower priority for resamples and are Not Rated.

Recreation (DEH RECMON)

- Criteria are exceeded when DEH closes a swimming area more than 61 days of the 5- year assessment period.
- Swimming areas closed more than 61 days are **Impaired**.

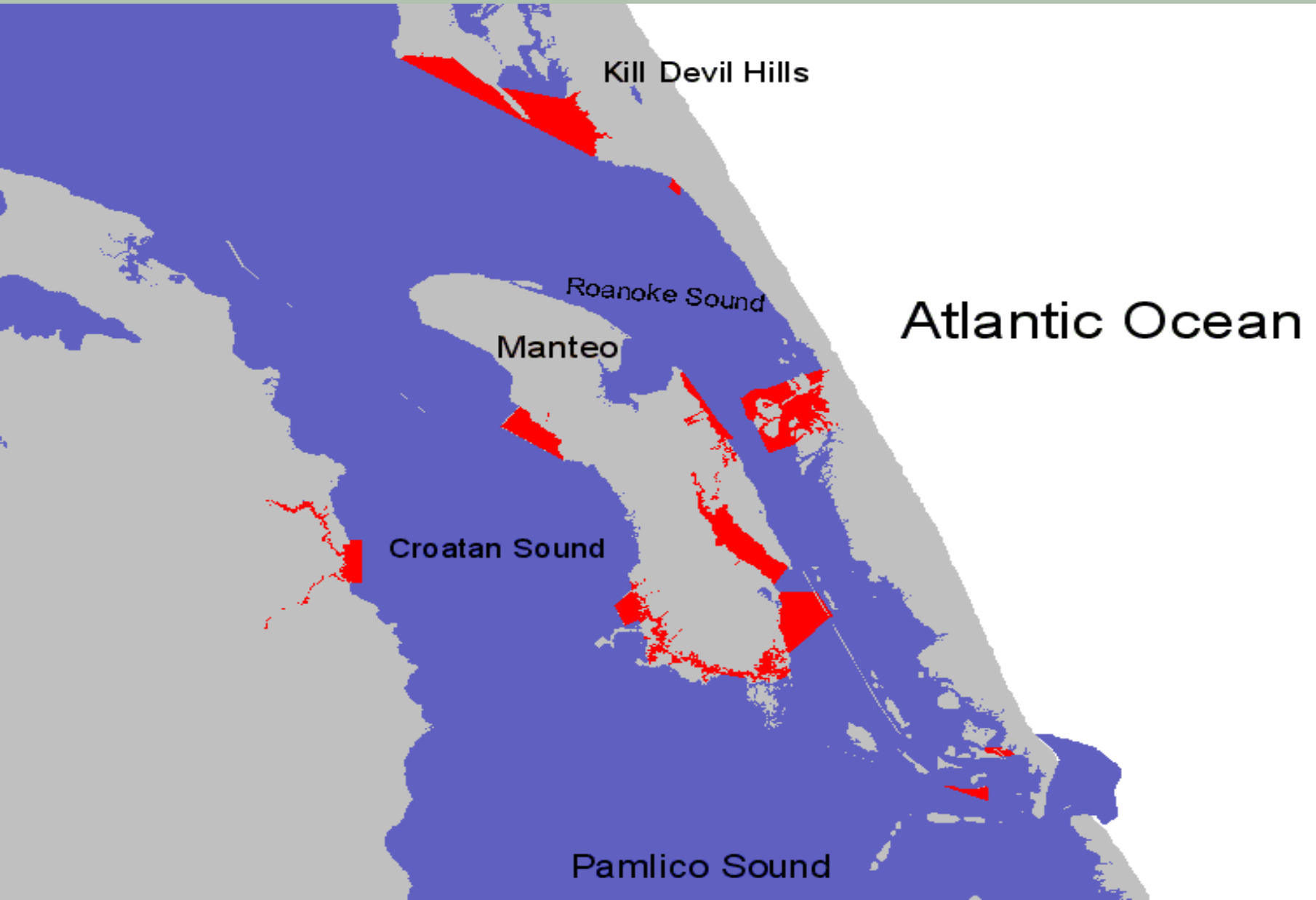
Shellfish Harvesting

Assessed for Class SA Waters –

Criteria based on DEH growing areas.

- Prohibited, Restricted and Conditional - SA waters are **Impaired**.
- Approved SA waters are **Supporting**.

Example: Impaired for Shellfish Harvesting



Fish Consumption

Assessed for All Waters -

C, SC, B, SB, SA, WSI-WS-V

- Criteria based on DHHS fish consumption advice and specific advisories.
- Waters with specific advisories are **Impaired**.
- Waters in basins south and east of I-85 are **Impaired** based on regional advice for mercury.

Water Supply

Assessed for WS Waters -

- Criteria based on the ability of water treatment plants to deliver potable water; not on standards for raw water.
- Regional water treatment consultants provide water quality related intake closure information.
- All WS waters are **Supporting** on an Evaluated basis.

TMDLs and Management Strategies

- Required for waters on the state's 303(d) List of impaired waters
- A TMDL must be developed for each problem parameter on the list
- Each TMDL must take into account all potential sources of pollution
- TMDLs can be qualitative or quantitative
- A TMDL can address a small stream segment, larger watershed, or an entire river basin

*** Note that use support assessment methods are always draft and are likely to change based on better data availability and technology, as well as changes in EPA guidance.**

What is a Watershed?



- ***What is a River Basin?***

All the land draining to a major river system.

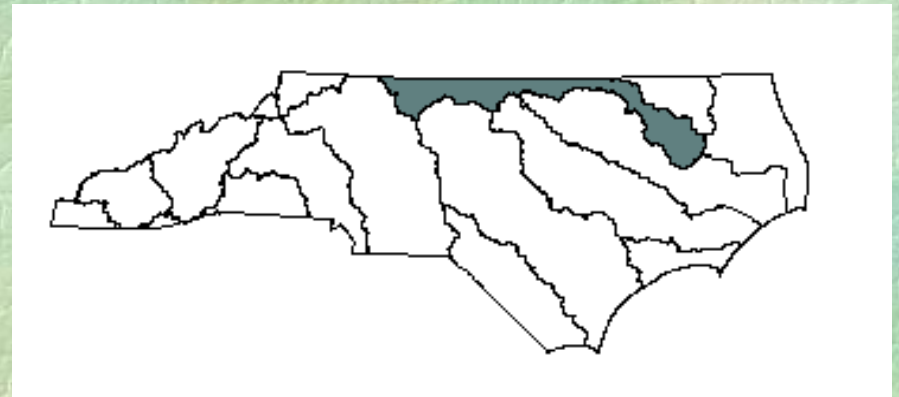
- ***What is a Watershed?***

The land area draining into a smaller body of water, such as a creek, stream, pond, etc.

There are many watersheds in each river basin.

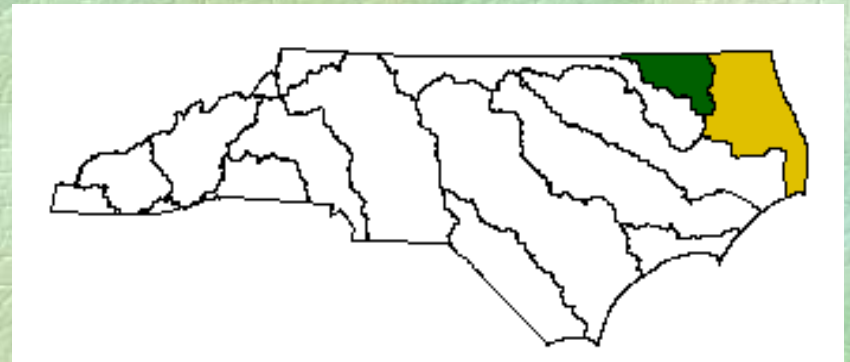
Roanoke River Basin

- Current Roanoke River Basinwide Water Quality Plan 2001
- Revision to Plan 2006
- DWQ collected biological data – summer 2004
- Coordination with NC - VA agencies and organized groups.



Chowan and Pasquotank River Basins

- Current Basinwide Water Quality Plans - 2002
- Revision to Plans 2007
- DWQ to collect biological data – summer 2005
- Implementation & Coordination
- VA facilitation



**Basinwide Planning Program Website:
<http://h2o.enr.state.nc.us/basinwide>**

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