



November 8/9, 2017

Department of Environmental Quality



*North Carolina Department of Environmental Quality,
Environmental Management Commission and Water Quality Committee
Division of Water Resources*

**Annual report to the General Assembly
Environmental Review Commission
Basinwide Water Management Plan
July 1, 2016 to June 30, 2017**

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Report on:

- 1) Progress on hydrologic model development
- 2) Progress in developing basin plans
- 3) Progress in implementing basin plans
- 4) Public involvement
- 5) Public education
- 6) All concentrations of heavy metals in surface waters - in the course of preparing or revising a basin plan
- 7) Other pollutants in surface waters identified – in the course of preparing or revising a basin plan



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North Carolina River Basins



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Basin Planning Schedule							
River Basin	Last EMC Approved Plan	Next Plan Update	NPDES Permits Renewal Year	Biological Basinwide Monitoring	Quantity Model Platform	Quality Model/ Strategy	Web Links to Executive Summary
Chowan	2007	2018	2017	2020	n/a	NSW	CHO
Pasquotank	2007	2018	2017	2020	n/a	NCDP	PAS
Watauga	2007	2018	2017	2018	OASIS		WAT
White Oak	2007	2018	2017	2019	n/a	New R.-NSW	WOK
Broad	2008	2018	2018	2020	OASIS		BRD
Neuse	2009	2018/ 2019*	2018	2020	OASIS	NSW	NEU
Cape Fear	2005	2018	2016	2018	OASIS	Haw R.-NSW; Mid CF - NCDP	CPF
Yadkin	2008	2018/ 2019	2018	2016		NCDP	YAD
Lumber	2010	2019	2019	2016			LBR
Catawba	2010	2019	2020	2017	CHEOPS		CAT
French Broad	2011	2020	2020	2017	OASIS		FBR
New River	2011	2020	2016	2018	OASIS		NEW
Hiwassee	2012	2021	2017	2019	TVA		HIW
Little Tennessee	2012	2021	2017	2019	TVA		LTN
Roanoke	2012	2021	2017	2019	OASIS	216 Study	ROA
Savannah	2012	2021	2017	2019	n/a		SAV
Tar-Pamlico	2015	2023	2019	2017	OASIS	NSW	TAR

NSW = Nutrient Sensitive Waters, NCDP = Nutrient Criteria Development Plan,
* NSW Strategy and regulatory update prior to NPDES permits renewal; Full plan completion 2019.
n/a – currently hydrologic models are not being developed for coastal areas.



Basin Plan Development

Of North Carolina's 17 river basins, seven water resource plans are currently under development:

1. Watauga River Basin – will be completed early 2018
2. Chowan River Basin – will be completed in 2018
3. Pasquotank River Basin - will be completed in 2018
4. White Oak River Basin – will be completed by 2018
5. Cape Fear River Basin - will be completed in late 2018/early 2019
6. Broad River Basin - will be completed in late 2018
7. Yadkin River Basin – will be completed late 2018/early 2019



Statewide water quality/quantity issues:

- Poor and degraded aquatic habitat
 - Increasing organic nitrogen
 - Turbidity
 - Stormwater runoff
 - Aging municipal wastewater systems
 - Pesticide and nutrient management issues
- Algal booms
- Increasing organic nitrogen
- Reduced streamflows (USGS)
- Incomplete water consumption and utilization data
- Emerging contaminants

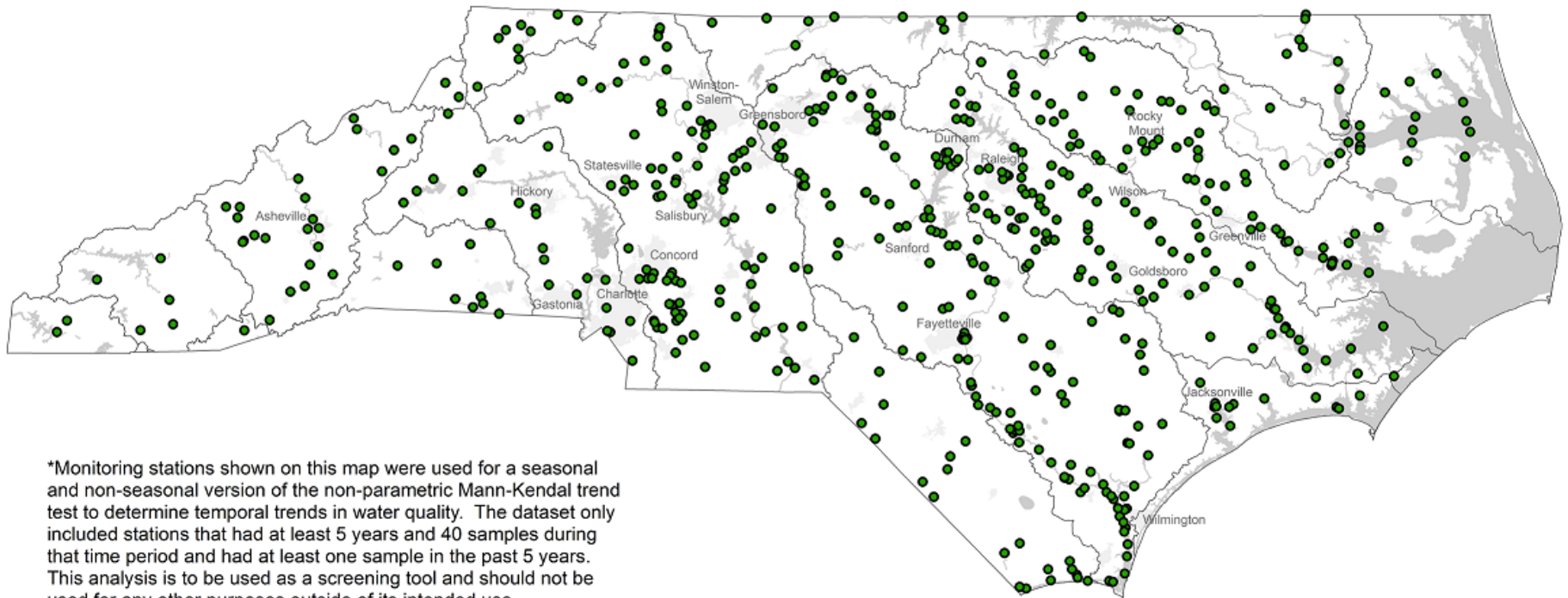


Key Challenges:

- Data availability
- Limited stream flow data
- Data acquisition and analysis
- Identifying entities willing and able to research sources of statewide organic nitrogen increases

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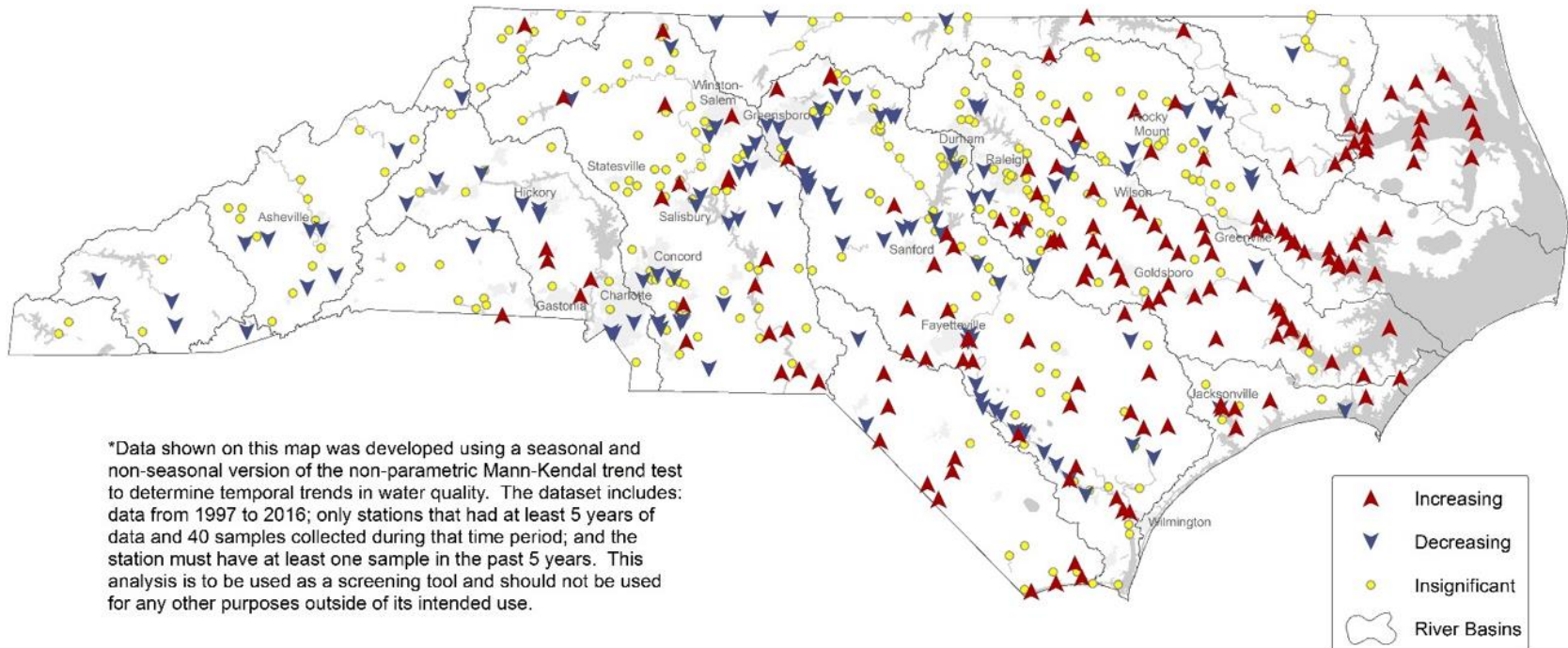
Statewide Screening Tool Monitoring Stations



*Monitoring stations shown on this map were used for a seasonal and non-seasonal version of the non-parametric Mann-Kendal trend test to determine temporal trends in water quality. The dataset only included stations that had at least 5 years and 40 samples during that time period and had at least one sample in the past 5 years. This analysis is to be used as a screening tool and should not be used for any other purposes outside of its intended use.

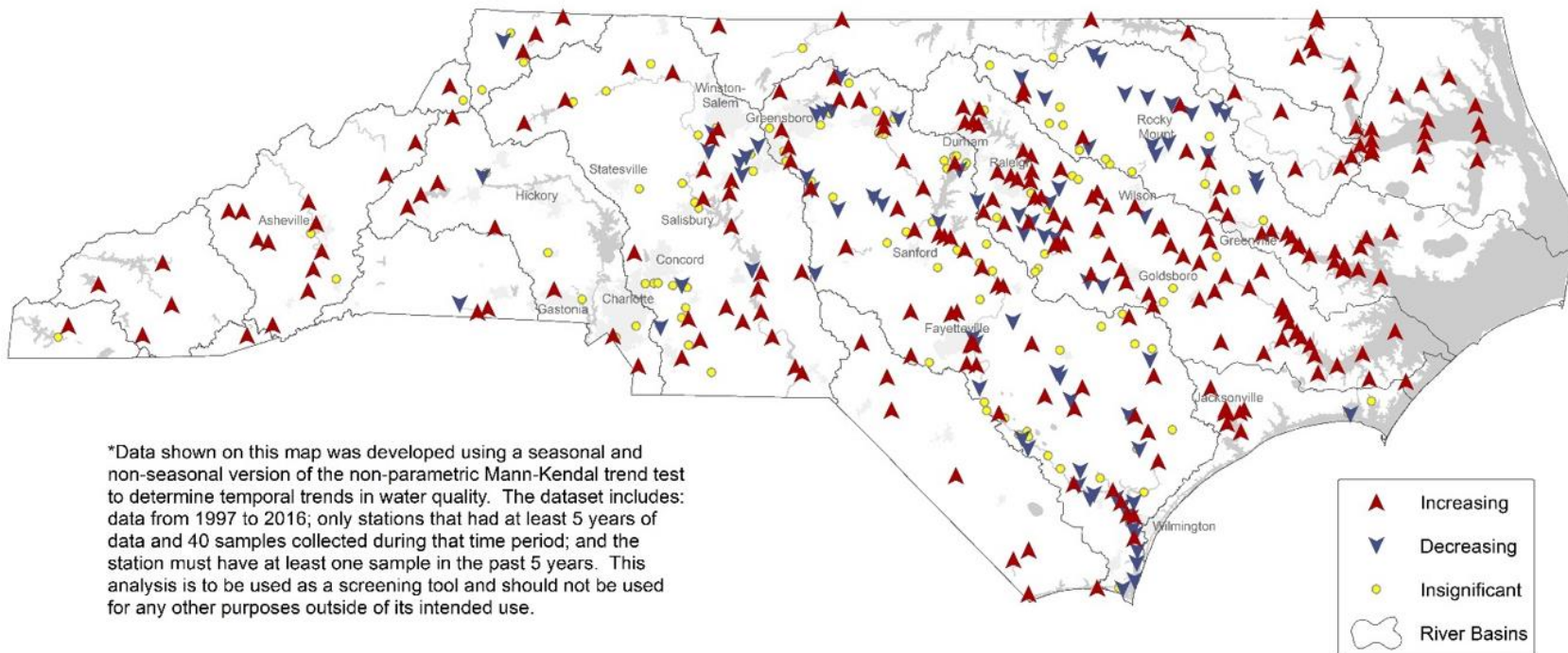
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Turbidity Trend* (1997-2016)



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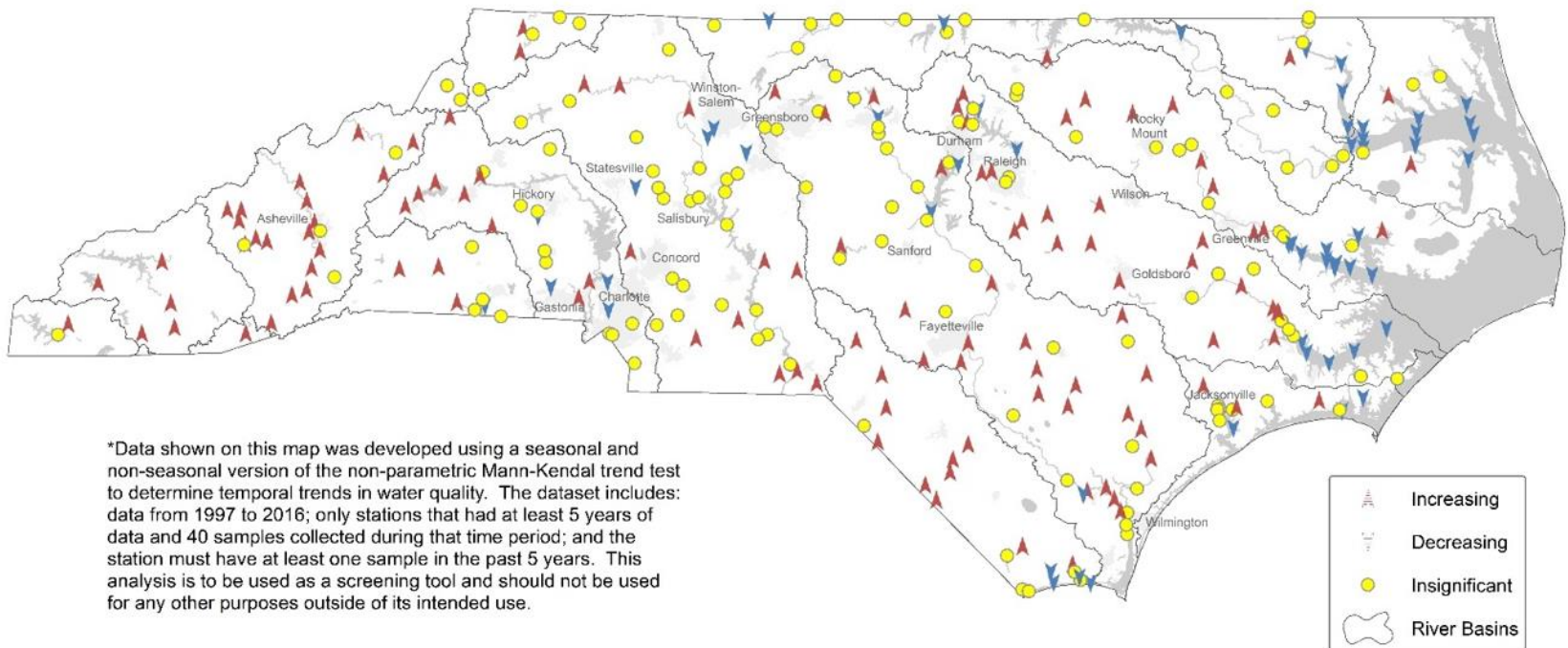
TKN Trend* (1997-2016)



*Data shown on this map was developed using a seasonal and non-seasonal version of the non-parametric Mann-Kendal trend test to determine temporal trends in water quality. The dataset includes: data from 1997 to 2016; only stations that had at least 5 years of data and 40 samples collected during that time period; and the station must have at least one sample in the past 5 years. This analysis is to be used as a screening tool and should not be used for any other purposes outside of its intended use.

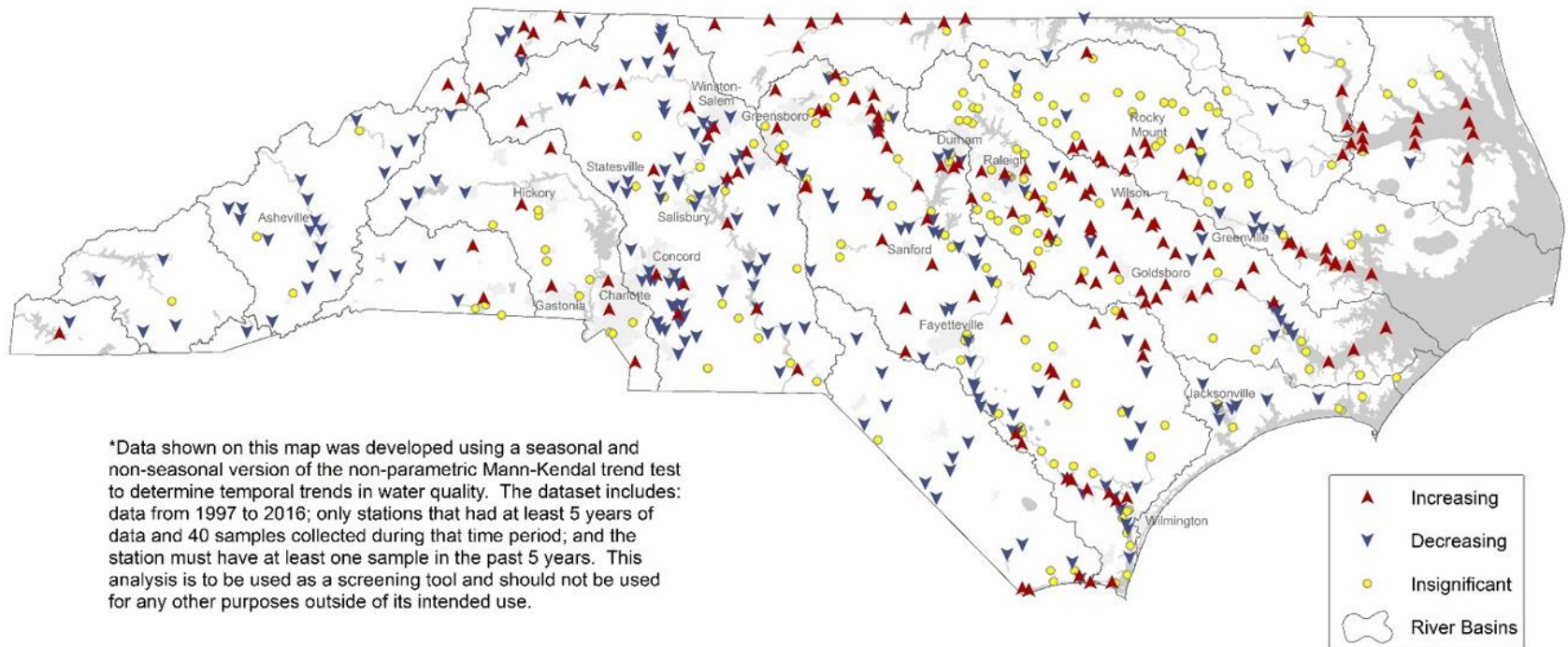
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Fecal Coliform Bacteria Trend* (1997-2016)



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pH Trend* (1997-2016)



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Division's Basin Planning Program's Stakeholder Input

- Hydrologic Modeling Stakeholder Meetings
- Basin Plan Public Comment Process
- Joint Basin Planning Branch/NPDES Complex Permitting Branch Meetings
- Watershed Associations
- Land Trusts
- Water Quality Monitoring Coalitions
- Soil and Water Conservation Districts
- Public Water Systems
- Other federal, state and local agencies



Branch Goals

- Help facilitate development of a statewide integrated data management system to replace the current, segmented, disjointed, inefficient and severely outdated data management system.
- Strive to increase public awareness and participation.
- Evaluate statutes specific to basin planning and how to integrate water quality and quantity planning into one report.



Contact Information



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