



North Carolina's Wetland Program Plan

*National Association of Wetland Managers
Wetland Program Plans
June 23, 2026*

*Steve Anderson, Wetland Scientist
Division of Water Resources*



Wetlands Science & Outreach Team



Science

Coastal Wetland
Change

Urban Wetland
Flood Storage

Mapping of
Wetlands in the
Mountains

Outreach

NCwetlands.org

Publicly Accessible
Wetlands Mapper

Field Guide to NC
Wetlands

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NC Wetland Program Plan

2015

North Carolina's Wetland Program Plan
2015-2019

Submitted by:
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October 2015



Cyndi Karoly *09.29.2015*
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Secretary, NCDWR Water Ecology Section

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2020

THE STATE OF NORTH CAROLINA
Wetland Program Plan



2021 - 2025

2025

THE STATE OF NORTH CAROLINA
Wetland Program Plan



2026 - 2030



Goals for WPP Updates






































Retain the readable and aesthetically pleasing plan

-  Albemarle-Pamlico National Estuary Partnership (APNEP)
-  Division of Coastal Management (NC DCM)
-  Division of Energy, Mineral, and Land Resources (NC DEMLR)
-  Division of Marine Fisheries (NC DMF)
-  Division of Mitigation Services (NC DMS)
- Division of Water Resources (NC DWR)**
 -  Water Planning Section
 -  Water Quality Permitting Section
 -  Water Quality Regional Operations Section
 -  Water Sciences Section



Theodore Roosevelt Natural Area in Pine Knoll Shores, NC

Table 2: NC DEQ Monitoring and Assessment Activities

ID	NC DEQ Monitoring and Assessment Activities	EPA Core Element Action ¹	NC DEQ Divisions/Sections
A*	Seek improvements for wetland predictive mapping (DCM: NC CREWS currently the best coastal maps; need updated estuarine shoreline maps, interested in the effects of salinity changes on shoreline forests)	Obj.1 Action c.	   
B*	Assess changes in the quantity and quality of coastal wetlands (e.g., sea level rise, wetland migration, general data, hotspots, landowners, and constitutional, financial, and legal implications)	Obj.2 Action e.	   
C*	Develop maps the public can access (e.g., wetland condition, conservation easements, assets, monitoring data interface)	Obj.3 Action d.	   
D*	Support the US Army Corps of Engineers' (Wilmington District) assessment of the ability of wetlands to limit the impacts of hurricanes and flooding in the Neuse, Tar-Pam, and Lumber River basins	Obj.2 Action e.	  
E*	Explore a program to create flood storage using nature-based solutions (DMS received legislative authority to develop a program which would create flood storage using nature-based solutions. The Division is establishing an Advisory Board and applying for grants to develop pilot projects and test cases. These efforts aim to determine the goals, strategies, and funding sources for this new program.)	Obj.3 Action c.	 
F*	Focus on improvements in stream water quality	Obj.3 Action d.	 
C*	Restore, enhance, and preserve wetlands to improve stream water quality	Obj.3 Action d.	 
H	Develop tools to assist with wetland evaluation	Obj.1 Action d.	  
I	Assess urban wetlands and their influence on water quality	Obj.2 Action b.	  
J	Research successful shoreline stabilization alternatives, with an emphasis on living shorelines	Obj.2 Action b.	 
K	Investigate current dam safety practices and sediment impacts on wetlands and streams below existing dams	Obj.2 Action e.	 
L	Watch for potential impacts to downstream wetlands from low and intermediate hazard dam removal projects that are exempt from state permitting	Obj.2 Action e.	 
M	Map and monitor coastal habitats (including wetlands) to assess status and regulatory effectiveness	Obj.2 Action e.	 
N	Continue to collect data on wetland condition and fish use at selected sites as part of the "Strategic Habitat Area" validation study (See Table 1)	Obj.2 Action b.	
O	Continue participation in EPA's National Wetland Condition Assessment	Obj.2 Action b.	

¹ EPA Core Element Framework: Monitoring and Assessment Objectives and Actions (US EPA 2009b) can be viewed at https://www.epa.gov/sites/production/files/2015-09/documents/monitoring_and_assessment_cef.pdf

* Greater than 50% of the 2020-2021 NC WPP stakeholder members agreed that NC DEQ's pursuit of that activity would be beneficial to their organization's members or constituents (based on a 2021 NC DWR survey).

Goals for WPP Updates

Expand perspective and expertise
of the stakeholder committee

2020-2021 NC WPP Stakeholder Group

Albemarle-Pamlico National Estuary Partnership
Carolina Wetlands Association
Duke University – Nicholas School of the Environment
NC Association of County Commissioners
NC Association of Environmental Professionals
NC Association of Floodplain Managers
NC Coastal Federation
NC Department of Transportation
NC Division of Water Resources - Water Planning Section
NC Division of Mitigation Services
NC Division of Water Resources - Water Quality Permitting Section
(401 & Buffer Permitting)
NC Environmental Restoration Association
NC Farm Bureau Federation
NC Forestry Association
NC Home Builders Association
NC League of Municipalities (Regulatory Action Committee)
NC Regional Councils (COGs)
NC Wildlife Resources Commission
North Carolina State University
Professional Engineers of NC
RTI International
The Nature Conservancy
University of North Carolina - Wilmington
US Army Corps of Engineers
US Fish and Wildlife Services – Asheville

Department of Environmental Quality

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Patsy Pond Nature Trail, Croatan National Forest, Newport, NC

Goals for WPP Updates

Engage tribes and tribal organizations in the planning process



Great Coharie River, Sampson County



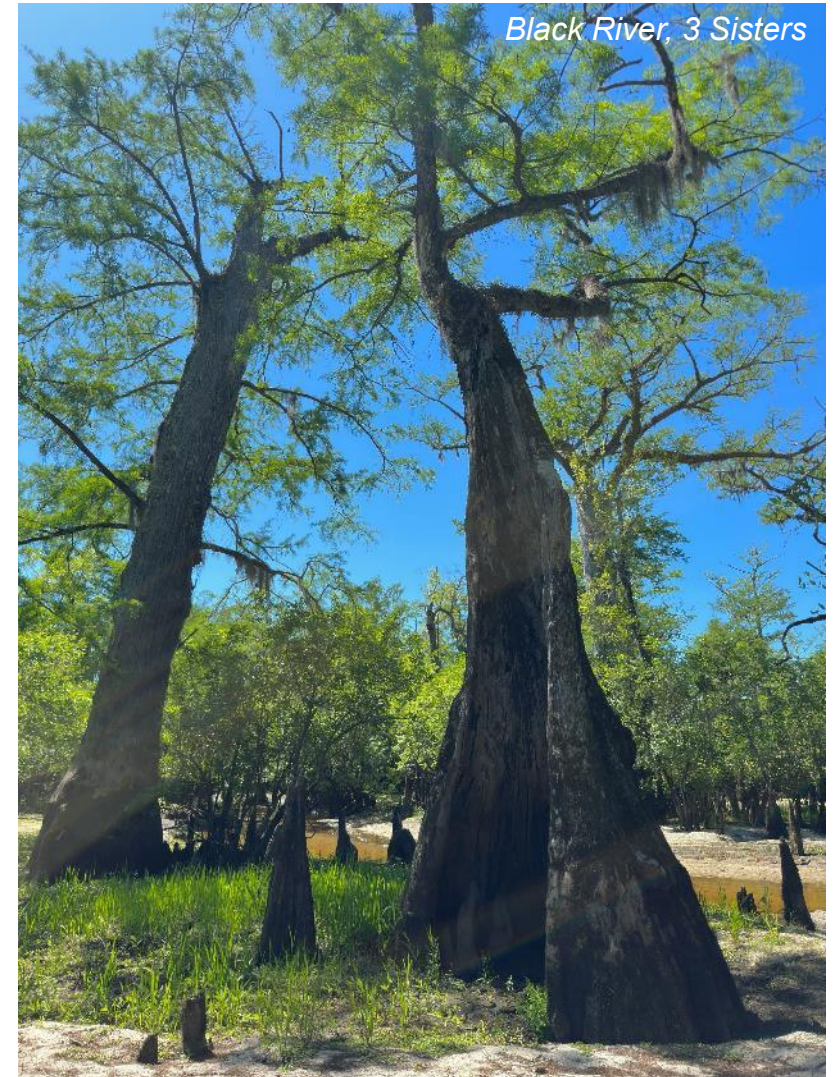
Great Coharie River, Sampson County

Update Process

- Frequency – Update ever 5 years with EPA Wetland Program Development Grants
- Approach – Holistic; dept. does not govern the activities listed in the plan; selects stakeholder led activities
- Follow-up – Challenging to retain membership and encourage engagement throughout WPP cycle

Lessons learned/Tips

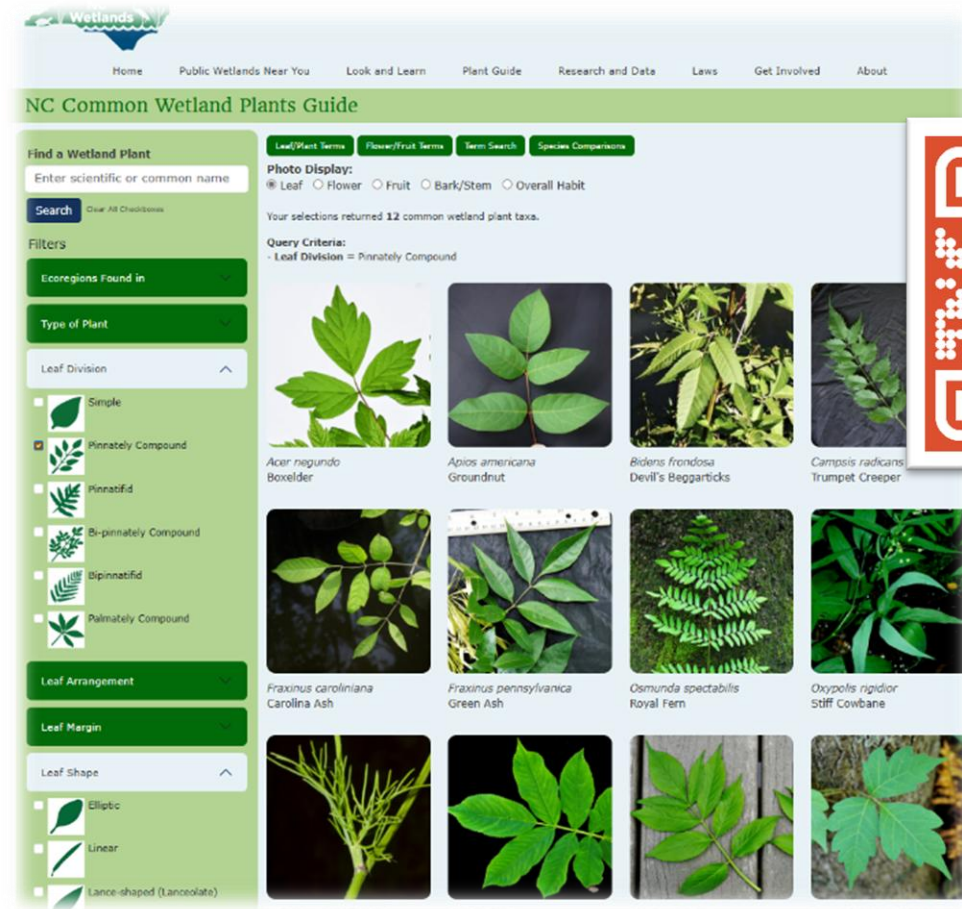
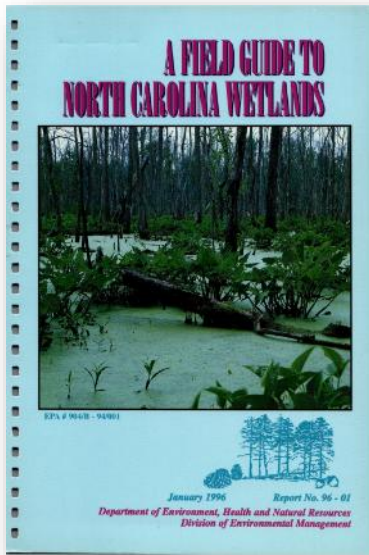
1. Patience and Attentive – *extend timelines!*
2. Continue with what has worked, and adapt to what has not worked
3. Consider innovative approaches



Highlighting Outcomes: Outreach

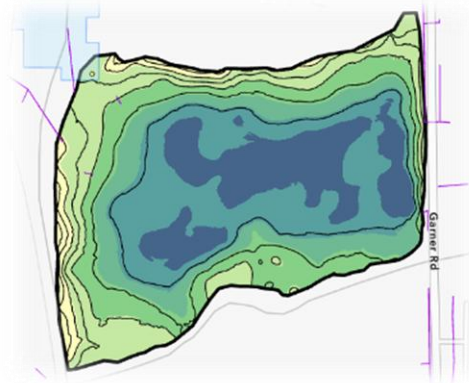


1. NCwetlands.org
2. Publicly accessible wetland mapper
3. Wetland health rapid assessment database
4. Digital Wetland Plant Guide
5. Guide to NC Wetlands



Highlighting Outcomes: Scientific Studies

1. Coastal wetland Change research – Story Map
2. Urban wetland water quality and flood water storage volume and attenuation
3. Ground-truthing wetland mapping in NC Blue Ridge ecoregion





NCwetlands.org

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