

North Carolina Pretreatment Consortium October 26, 2021

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Division of Water Resources**



Challenges and Strengths

- Response to COVID
 - Quick Overview of DWR :

Public Water Supply

Groundwater Resources

Regional Offices

Water Science Section

Permitting: NPDES, Non-discharge, 401 Buffer
program, Animal Operations

Planning





NPDES (National Pollution Discharge Elimination System)

- Treated water discharged directly to surface water
- Federal Program administered by NC (EPA 106 Grant)
- Program Divided three Units (Industrial, Municipal & Expedited)
- Individual NPDES permits are renewed every five years

NPDES Permitting:

-Individual Permits- 1,101 total individual permits

124 municipal WWTPs, 401 100% domestic WWTPs, 177 drinking-water treatment plants, 39 groundwater remediation sites, 142 industrial facilities,

-General Permits- 1762 Certificates of Coverage - 9 types from NCG50000 to NCG590000 (non-contact cooling water, pesticides, SFRs, etc.)

NPDES continued

Industrial Pretreatment.

- POTW

Compliance:

- Compliance Evaluation Inspections, NODs, NOVs, Civil penalties, Special Order by Consent, Remissions, Flow Moratoriums

Other Duties:

- Tax Certifications (determines exemption from certain NC taxes)

Collection systems



Water Planning Section

Basin Planning- responsible for the water quality and water quantity planning for river basins statewide.

Classification and Standards and Rule Review-

Development and assistance with interpretation and implementation of the state's surface water and groundwater quality standards

Modeling and Assessment - uses computer models to simulate and evaluate surface water resource

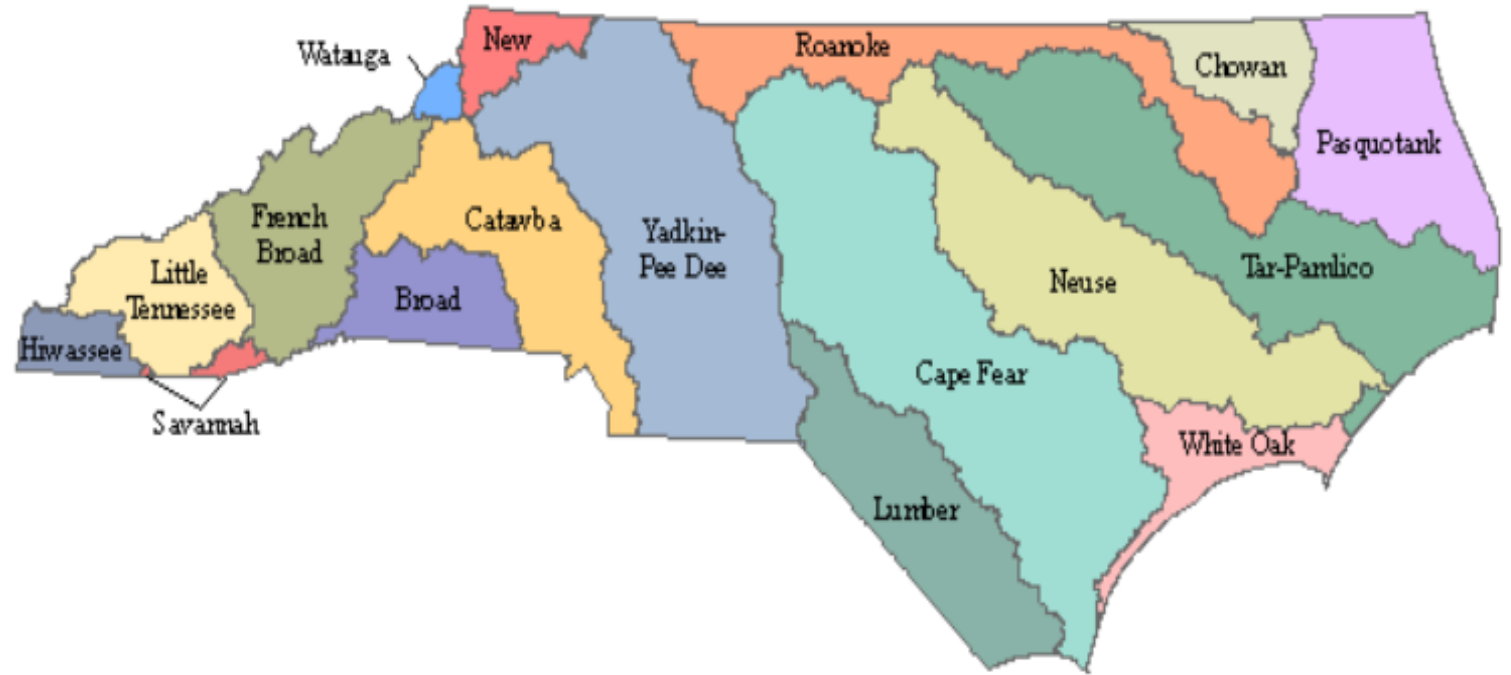
Non-Point Sources – address impairments due to non-point source

Water Supply Planning – Water Supply assistance, water withdrawal, drought monitoring and management

Division of Water Resources

River Basin and Basinwide Plans

- A Basinwide planning is a watershed-based approach to identify areas across the state where water resource concerns should be addressed.
- The planning process identifies areas that need additional protection, restoration, or preservation to ensure waters of the state are meeting their designated use.
- The basin plan is a reflection of this planning process and serves as a summary document for the river basin.



What Is A basinwide Plan.

- Basin plans are required under North Carolina General Statute (NCGS) 143-215.8B and are approved by the Environmental Management Commission (EMC) every 10 years (Session Law 2012-200).
- Watershed-based approach to managing water resources -considers point and nonpoint sources
- - Basin plan required every 10 years ▪ Basin plan is not a rule.
- While these plans are prepared by the North Carolina Department of Environmental Quality's (NCDEQ's) Division of Water Resources (DWR), their implementation and the protection of water resources entail the coordinated efforts of federal and state agencies, local governments, and stakeholder groups across the state.



DWR Planning Section:

- Basinwide Plan Schedule

RIVER BASIN	PRESENT TO WQC	PRESENT TO EMC
Chowan	Sept. 2020	March 2021
Pasquotank	July 2021	Sept. 2021
White Oak	Sept. 2021	Nov. 2021
Cape Fear: Haw	Nov. 2021	Jan. 2022
Yadkin	Jan. 2022	Mar. 2022
Neuse	May 2022	July 2022
Broad	July 2022	Sept. 2022
Cape Fear: Deep; Upper; Lower (above Lock & Dam 1)	July 2022	Sept. 2022
Lumber	Sept. 2022	Nov. 2022



- The assessment of water quality in North Carolina is required under Sections 303(d) and 305(b) of the Clean Water Act and is to be reported on every two years.
- On June 21, 2021 – EPA approved NC's 303 (d) list. [NC DEQ: Integrated Report Files](#)
- Section 305 (b) reports provide information on the water quality status of all waters in the state,
- The term "303 (d) list" or “list” is short for a **state's list of impaired and threatened waters** (e.g. stream/river segments, lakes). States are required to submit their list for EPA approval every two
- These data also support several Division of Water Resources' water quality management programs including Basin Water Resources Plan development, biennial 305(b) and 303(d) reporting to the Environmental Protection Agency, Total Maximum Daily Load (TMDL) amounts, and development of NPDES permit limits.



Triennial Review

- **Triennial Review:** DEQ staff review current EPA guidelines, scientific data, and public comments and make recommendations for any changes of the water quality standards to the **North Carolina** Environmental Management Commission.
- Proposed the codification of 1,4-Dioxane into the [15A NCAC 02B .0200](#) Surface Water Quality Standards as part of the current 2020-2022 Surface Water Triennial Review.
[1, 4 Dioxane,](#)
 - Standard to codify = 80 ug/L • All surface waters for fish consumption
 - Standard to codify = 0.35 ug/L • Class WS waters (water supply)

Current Triennial review includes: E. coli, Cadmium, -Cyanide, 1, 4 Dioxane, Selenium, and Updates to rule regarding [Band of Cherokee Indians](#), Definitions, and Corrections



Compounds of Emergent Concern

- PFAS – Per & Polyfluoroalkyl Substance. This represent a group of around ~5000 manmade chemical from the 1940s used in product to resist stains, degrease, and repel water. Examples include carpet, furniture, non-stick cookware, and AFFF (firefighting foam Or aqueous film forming foam)
- ECs like PFAS typically have little or no regulatory oversight instruments under current environmental laws due in part to limited specific health effects and exposure data.
- EPA published a PFAS Roadmap on 10/18/21

<https://www.epa.gov/pfas/epa-actions-address-pfas>



Water Sciences Section (WSS)

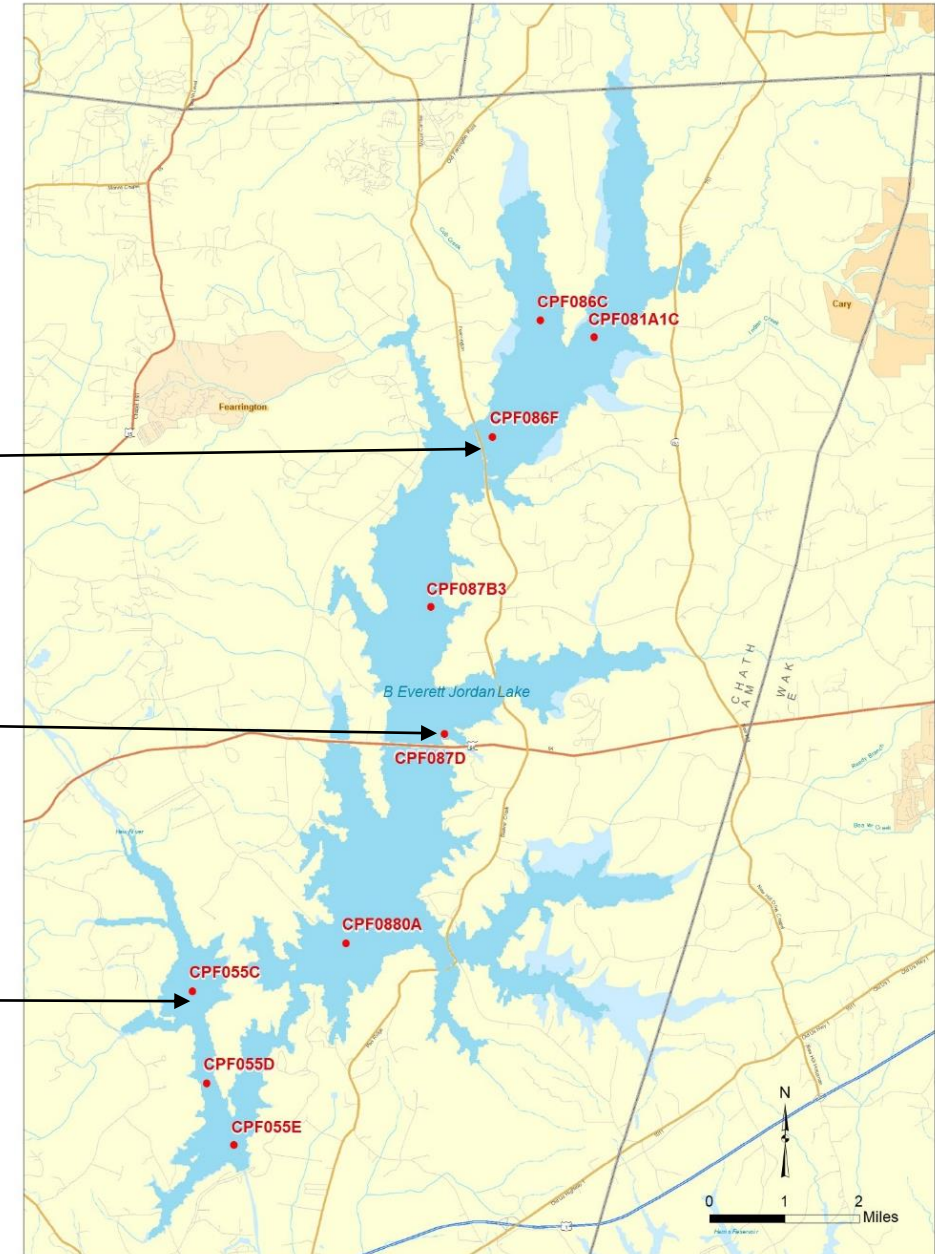
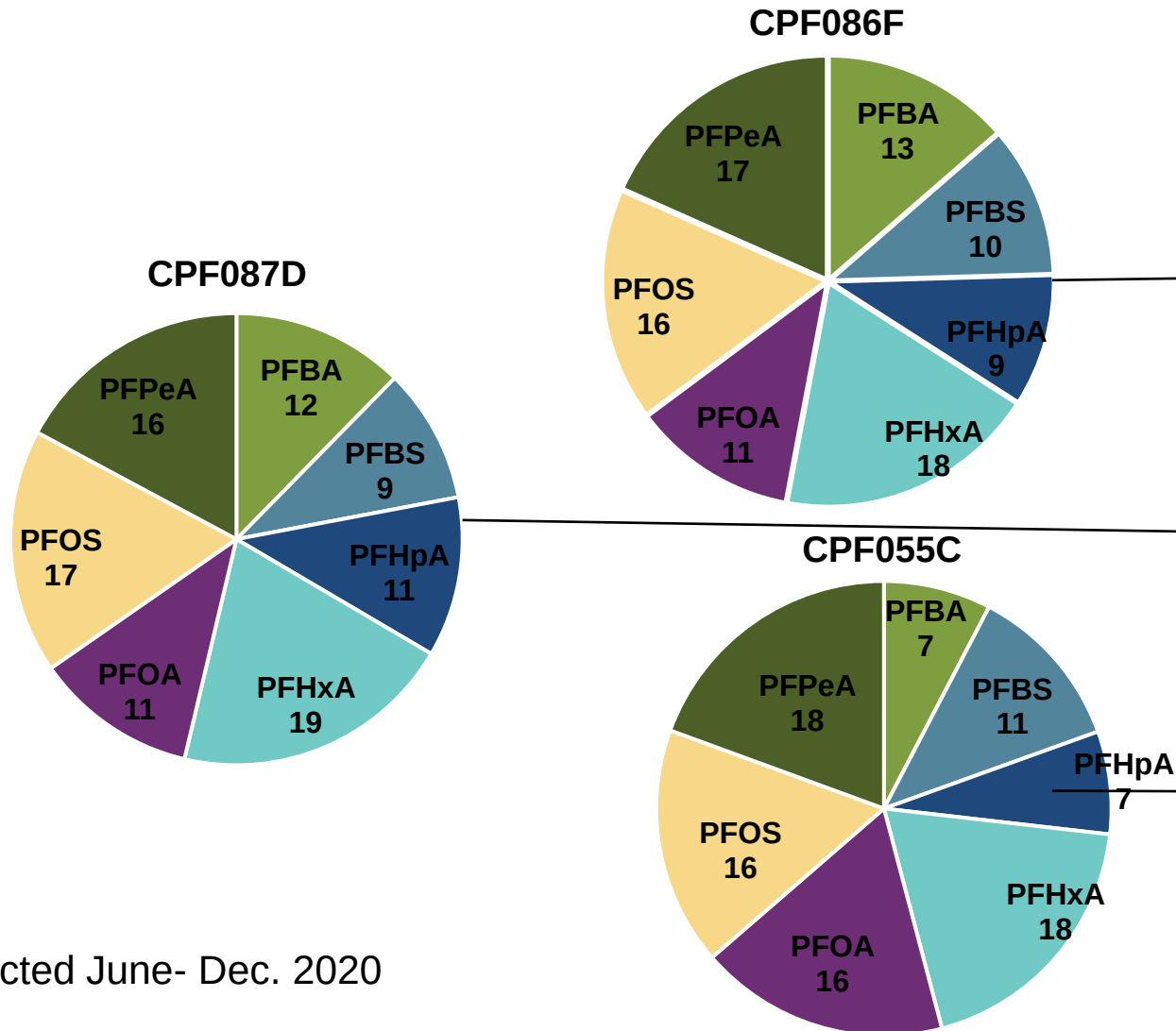
WSS have collected samples in Reservoir intakes in the Neuse Basin. Since January 2018 (and ongoing) they have been collecting samples in Jordan Lake. This summer – also collected samples at water supply intakes in the Yadkin-Pee Dee and Broad River Basins.

Sample Site	Parameter	Sample Frequency	Matrix	Sample Type	Start Date	End Date
Jordan Lake (5 locations)	23 PFAS Analytes	1x/month	Surface Water	Grab	Jan. 2018 to	June 2018
					June 2020	Present
PWS reservoir intakes in Neuse (10 sites)	23 PFAS Analytes	1x/month	Surface Water	Grab	May 2020	Sept 2020
PWS reservoir intakes in Yadkin-Pee Dee and Broad basins (25 sites)	23 PFAS Analytes	1x/month	Surface Water	Grab	May 2021	Sept 2021

Top 7 PFAS Analytes: % Contribution to Detected PFAS Totals

Jordan Lake

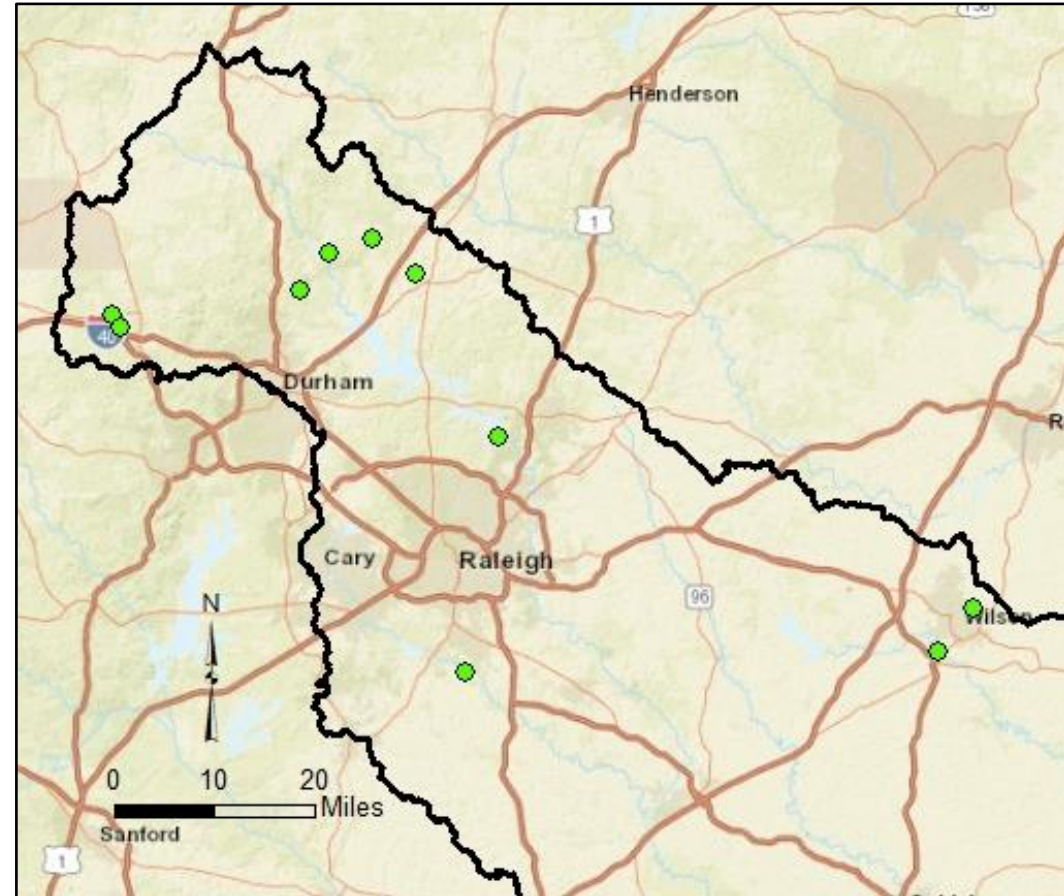
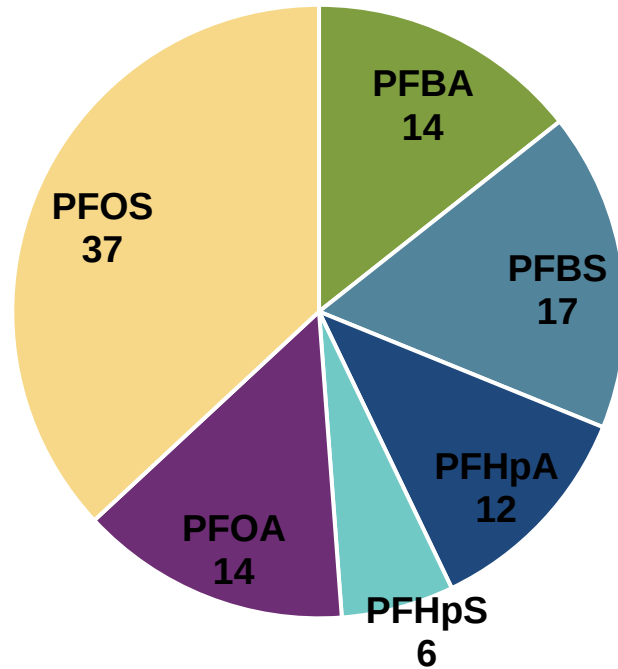
Approx. 90% of Total PFAS



Data collected June- Dec. 2020

Top 6 PFAS Analytes: % Contribution to Detected PFAS Totals in Neuse Basin PWS Reservoirs

Approx. 87% of Total PFAS



Data collected May – Sept 2020

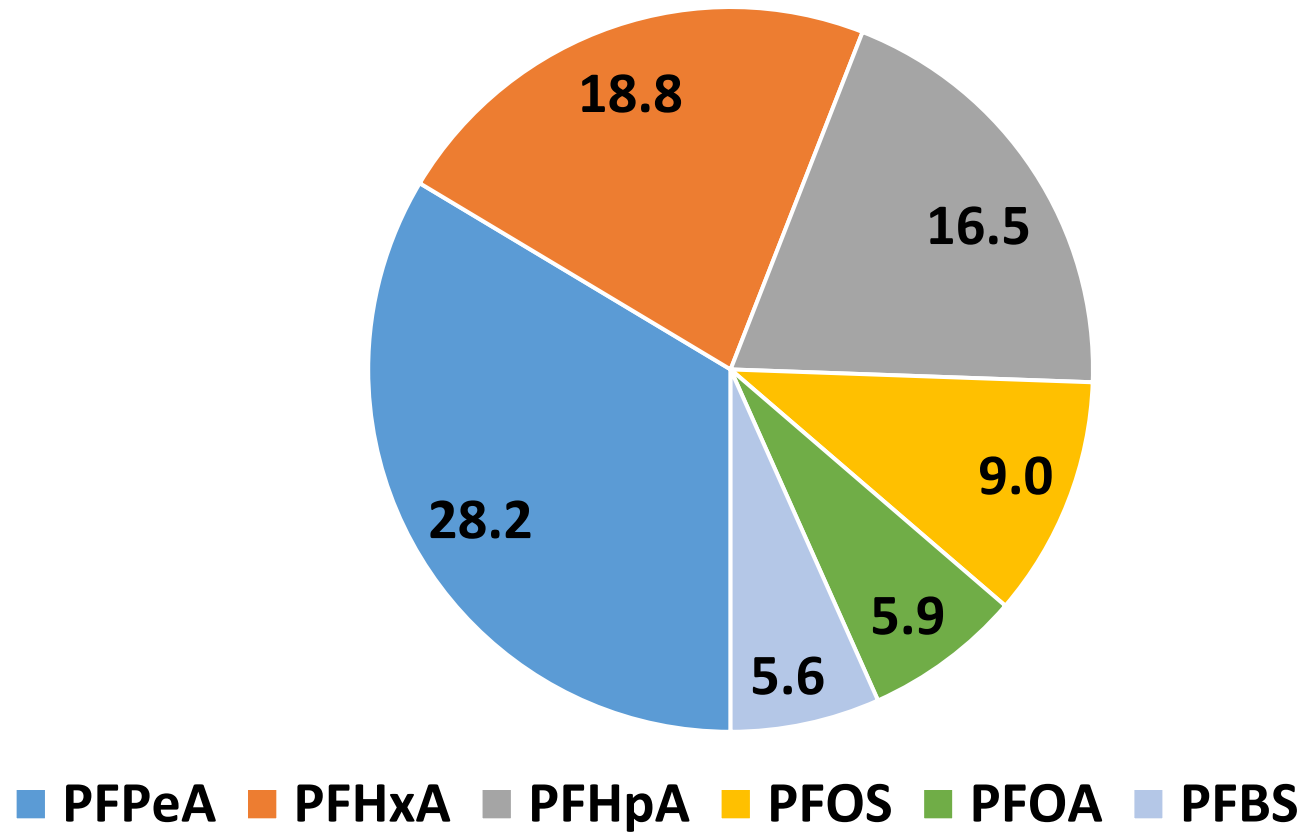
Water Quality Permitting

Cape Fear Basin - Emerging Compounds Investigation

- 2018, July: Initiated with Greensboro an Upper Piedmont Emerging Contaminants (UPEC) Workgroup
- 2019, May 21: Water Quality Permitting Emerging Compounds Workshop welcoming all POTWs but primarily POTWs with pretreatment programs in the Cape Fear River Basin
- 2019, Fall: Required 28 POTWs with a Pretreatment Program to perform influent screening on 1,4 dioxane and PFAS compounds
- 2020, Spring: Required 8 Industries with a direct discharge to state waters to perform PFAS effluent screening
 - Based on results – additional sampling of PFAS levels in discharge (effluent) is being performed at 2 POTWs and 2 Industry.
- Regional staff are performing effluent sampling at six 100% domestic municipal facilities discharging < 1 MGD, two samples will be taken at each to determine background levels of PFAS (sampling not completed yet, Covid-19 slowed study initiated in Jan. 2020).

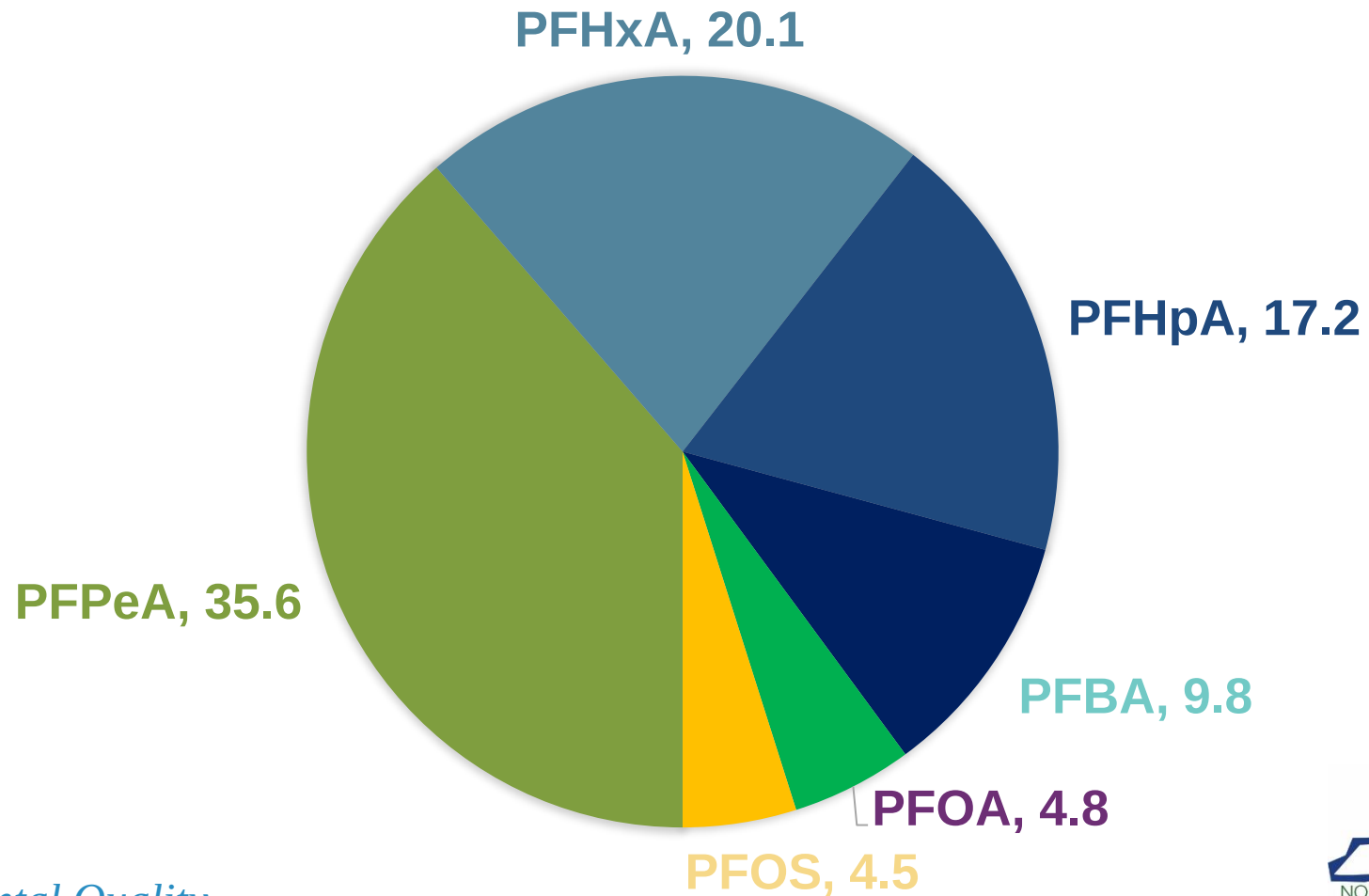
Top 6 PFAS Analytes: % Influent PFAS screening data - 27 Municipalities in the Cape Fear River Basin

Municipal PFAS Top 6 Contributors



Top 6 PFAS Analytes: % Effluent screening PFAS data - Industrial Direct Dischargers in the Cape Fear

INDUSTRIAL PFAS TOP 6 CONTRIBUTORS



Summary – Overview of Top 6 PFAS analytes

Chemours-Outfall 002		Neuse – PWS reservoirs	Jordan Lake- CF	Municipalities - CF	Industries - CF	XYZ POTW
Analyte	% of total detected PFAS	% of total detected PFAS	% of total detected PFAS	% of total detected PFAS	% of total detected PFAS	% of total detected PFAS
GenX	32					
PFESA BP1	21					
PFESA BP2	12					
PFMOAA	6					
PFMOPrA	4					
PFMOBA	3					
PFOS		37	17	9	4.5	5
PFOA		14	11	5.9	4.8	5.3
PFBA		14	12	4	9.8	
PFBS		17	9	5.6		
PFH ₂ PA		12	11	16.5	17.2	17
PFH ₂ PS		6				
PFPeA			16	28.2	35.6	17
PFHxA			19	18.8	20.1	18.8
6:2 FTS						34.6

- Chemours top 6 analytes are specific to their industry.
- The Neuse-PWS, Jordan Lake, and the Cape Fear Municipalities and Industries all showed legacy PFOS and PFOA and PFH₂PA in their top 6-7 analytes.
- Specific to the Cape Fear samples, Jordan Lake and the Cape Fear Municipalities and Industries showed PFPeA and PFHxA as their top 2 analytes except XYZ POTW which showed 6:2 FTS as its most prevalent PFAS.



DWR Water Quality Regional Operations Section



7 Regional Offices



Emergency Response

Respond to emergencies and assess impacts

Hurricane Florence impact to swine farm and wastewater treatment facility (FRO)



Seven Regional Offices

- Ashville Regional Office (828) 296-4500
- Fayetteville Regional Office (910) 433-3300
- Morrisville Regional Office (704) 663-1699
- Raleigh Regional Office (919) 791-4200
- Washington Regional Office (252) 946-6481
- Wilmington Regional Office (910) 796-7215
- Winston Salem Regional Office (366) 776-9800



Protection of Surface Waters

