



Aug 2, 2023

*Cape Fear River Fish Project – Data Update and Path Forward*

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# Project Information

## Overview

- PFAS are persistent contaminants that have unknown impacts in many environments.
- In North Carolina, the Chemours facility is one industrial source of PFAS contamination into the Cape Fear River.
- The Cape Fear River runs over 300km and serves as a drinking water source for NC residents.

## Goal

- To examine the extent of the PFAS contamination.
- To better understand bioaccumulation of PFAS.
- To collect fish tissue data for development of fish consumption advisories.

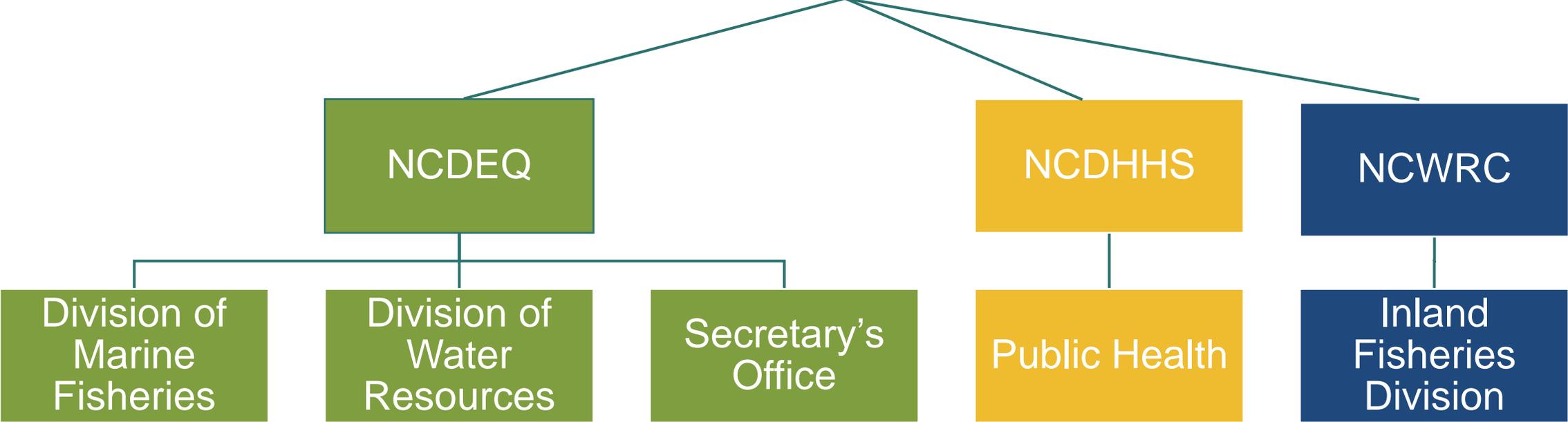
## Details

- June – August 2022: 278 fish across 14 species were collected from the Cape Fear River.
  - Most frequently caught and consumed fish species in the Cape Fear Region.
- The fish fillets were analyzed alongside water samples collected in situ for 56 different PFAS
  - to support bioaccumulation factor (BAF) calculations across trophic levels in NC.
  - to support NCDEQ standards development to protect public health and NC's water resources.
  - to support the NCDHHS in the development PFAS-specific fish consumption advisories.



# Project Partners

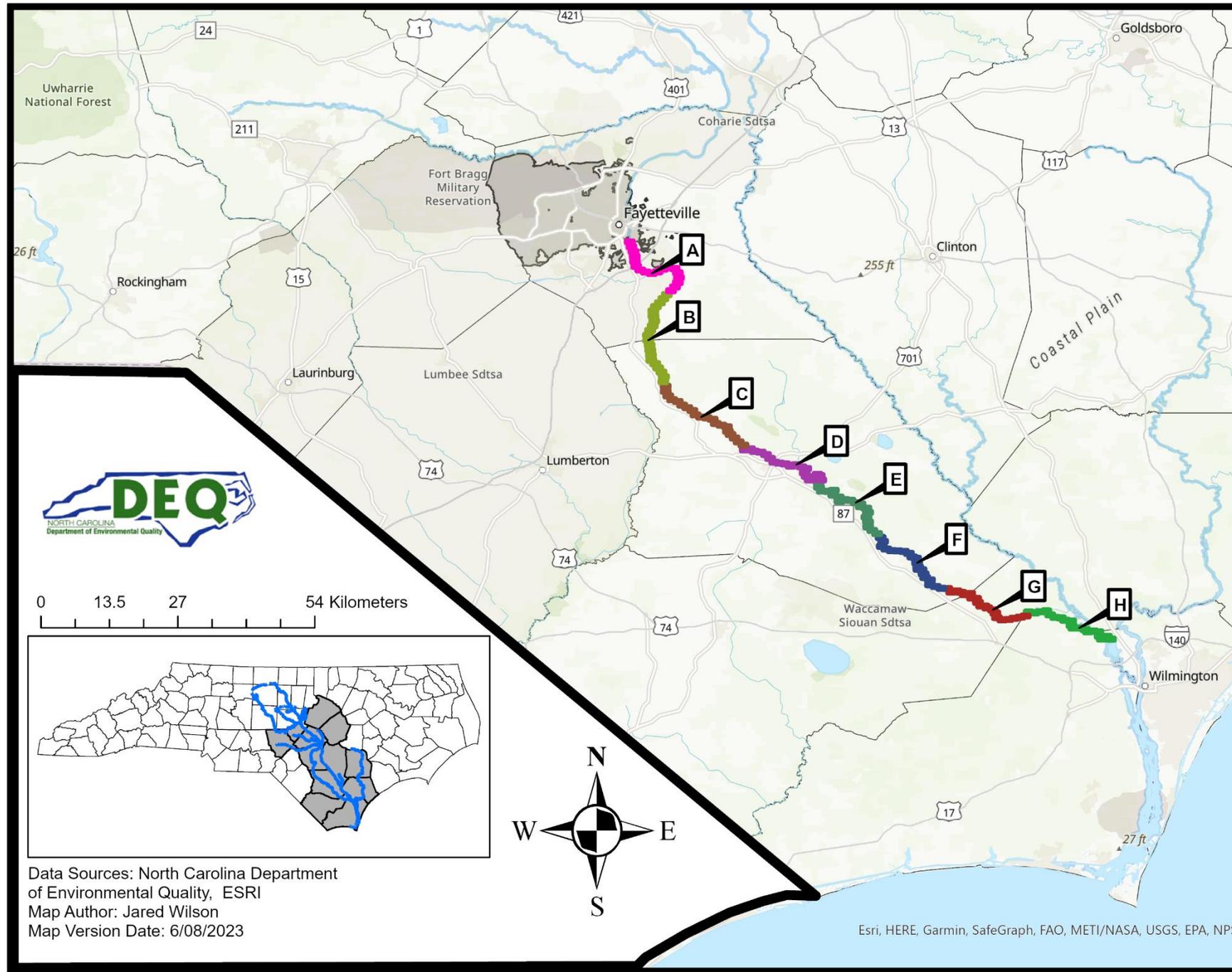
## 2022 Fish & Water Collection Project



# 2022 Fish & Surface Water Collection Project

## Freshwater Collection Locations

The Cape Fear River was divided into eleven 20km segments beginning south of Fayetteville, NC.



*2022  
Fish &  
Surface Water  
Collection Project*

**Targeted for Sampling at all Locations**



**Freshwater Species**

**Largemouth Bass**

**Blue Catfish**

**Flathead Catfish**

**Redear Sunfish**

**Bluegill Sunfish**

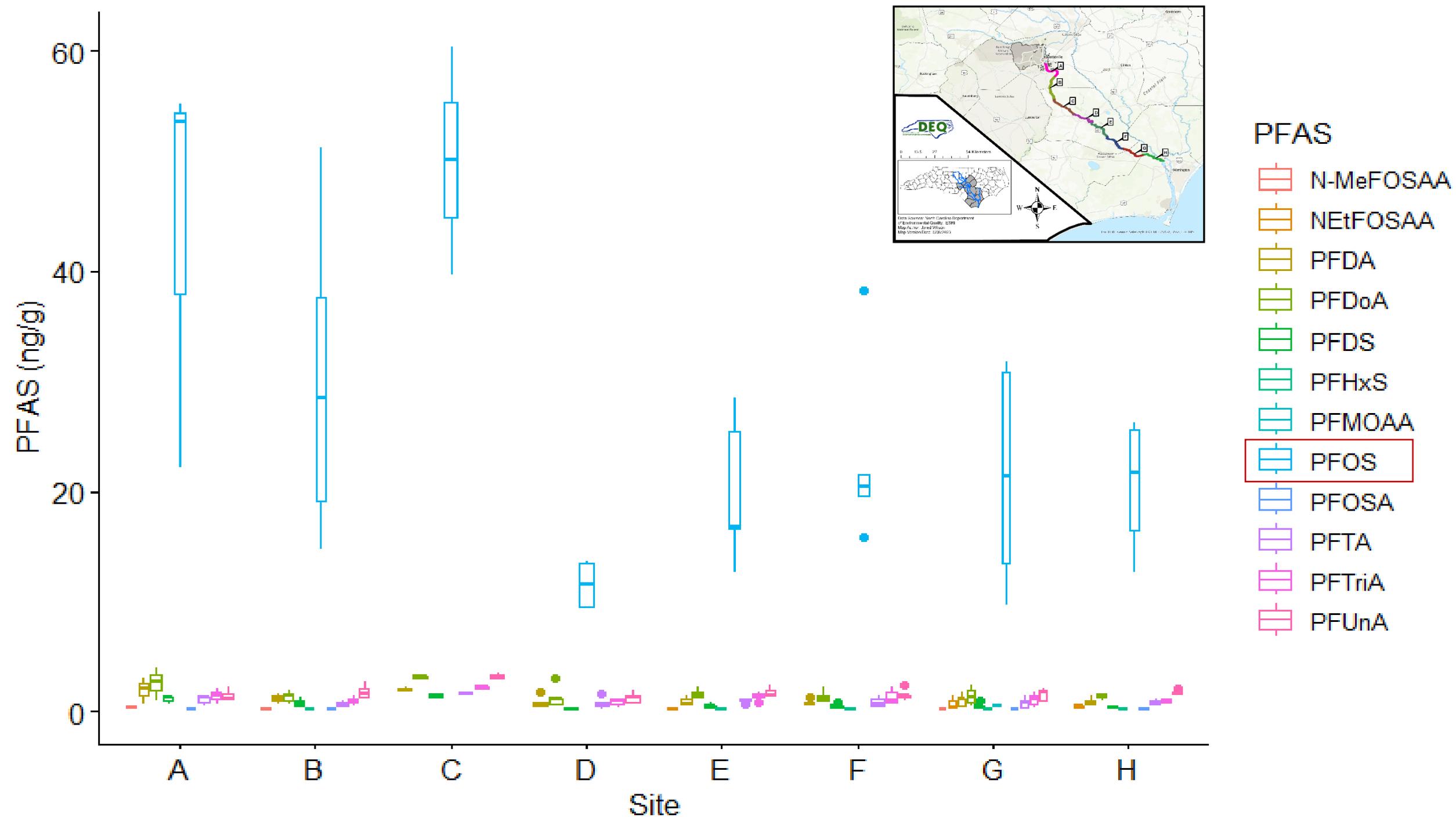
**Channel Catfish**

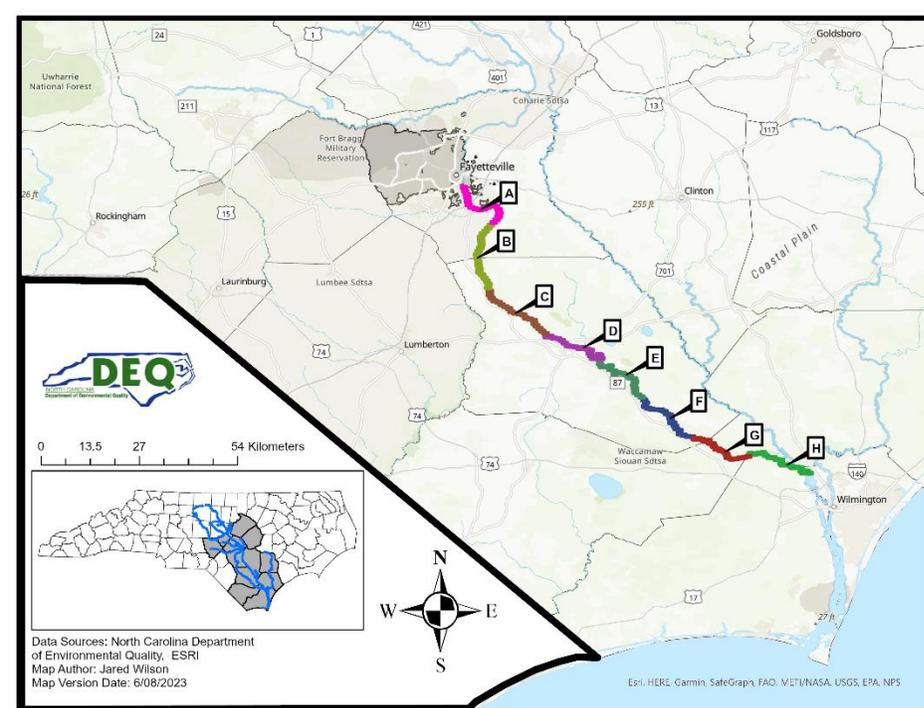
**American Shad**

**Striped Bass**

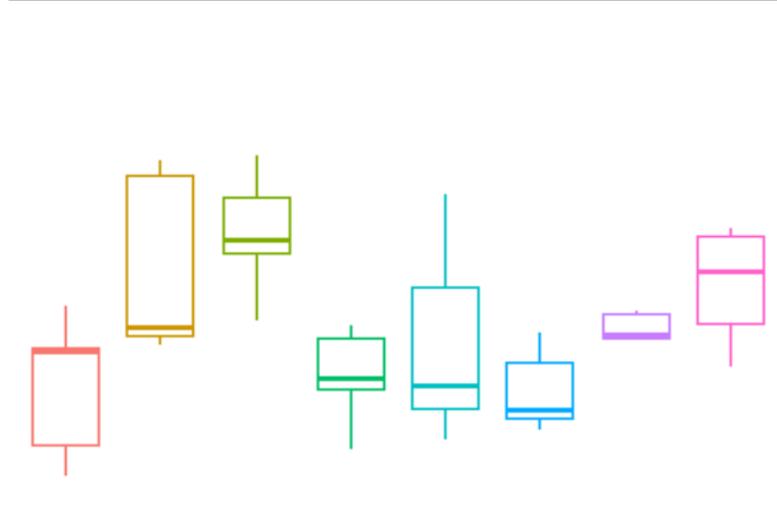
**Opportunistically Sampled**



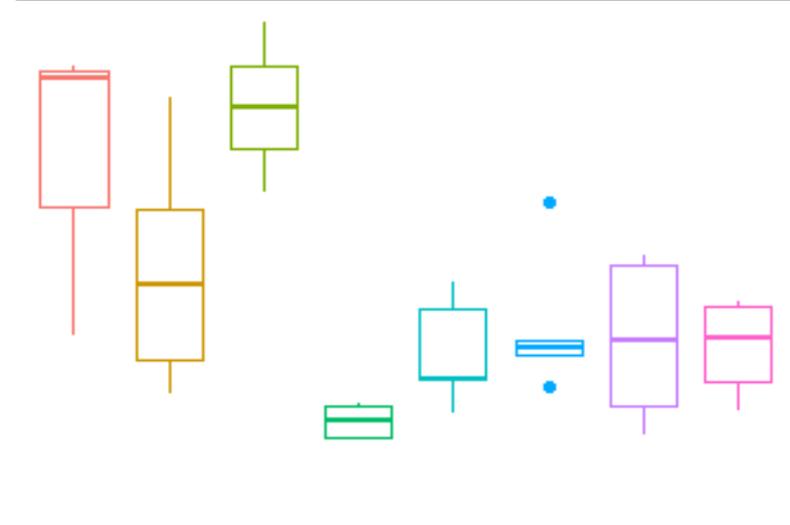




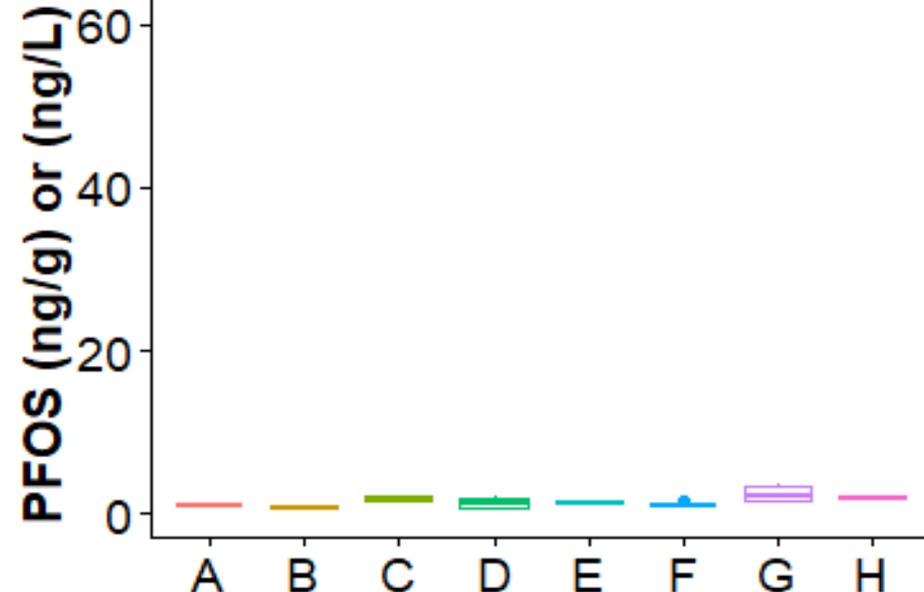
### Bluegill Sunfish



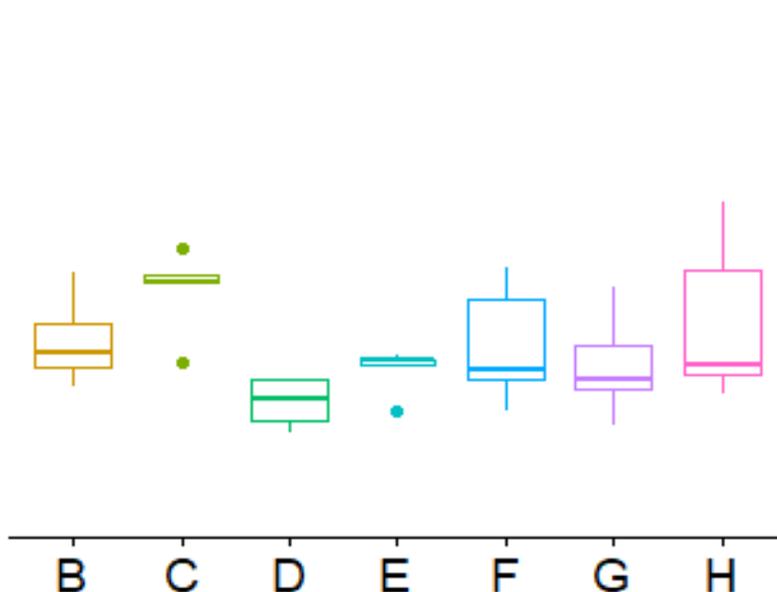
### Largemouth Bass



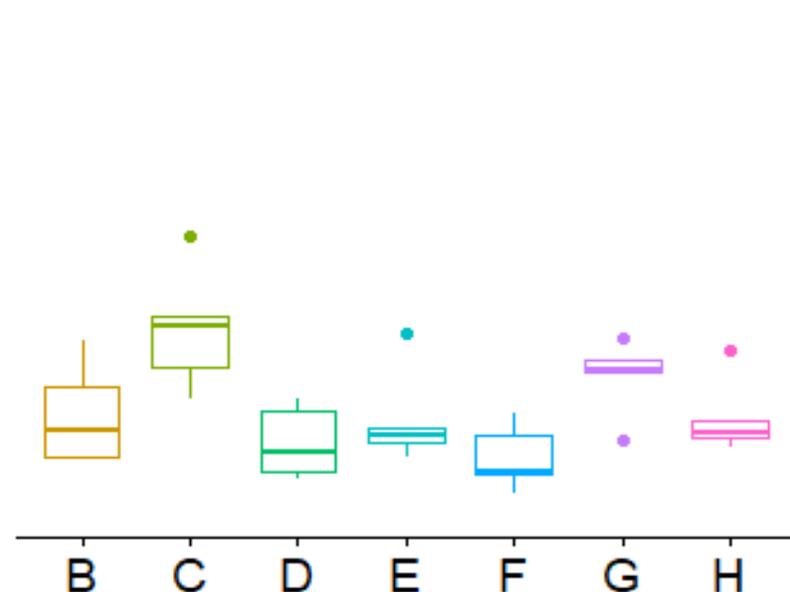
### Blue Catfish



### Redear Sunfish



### Flathead Catfish



# *Summary and Next Steps*

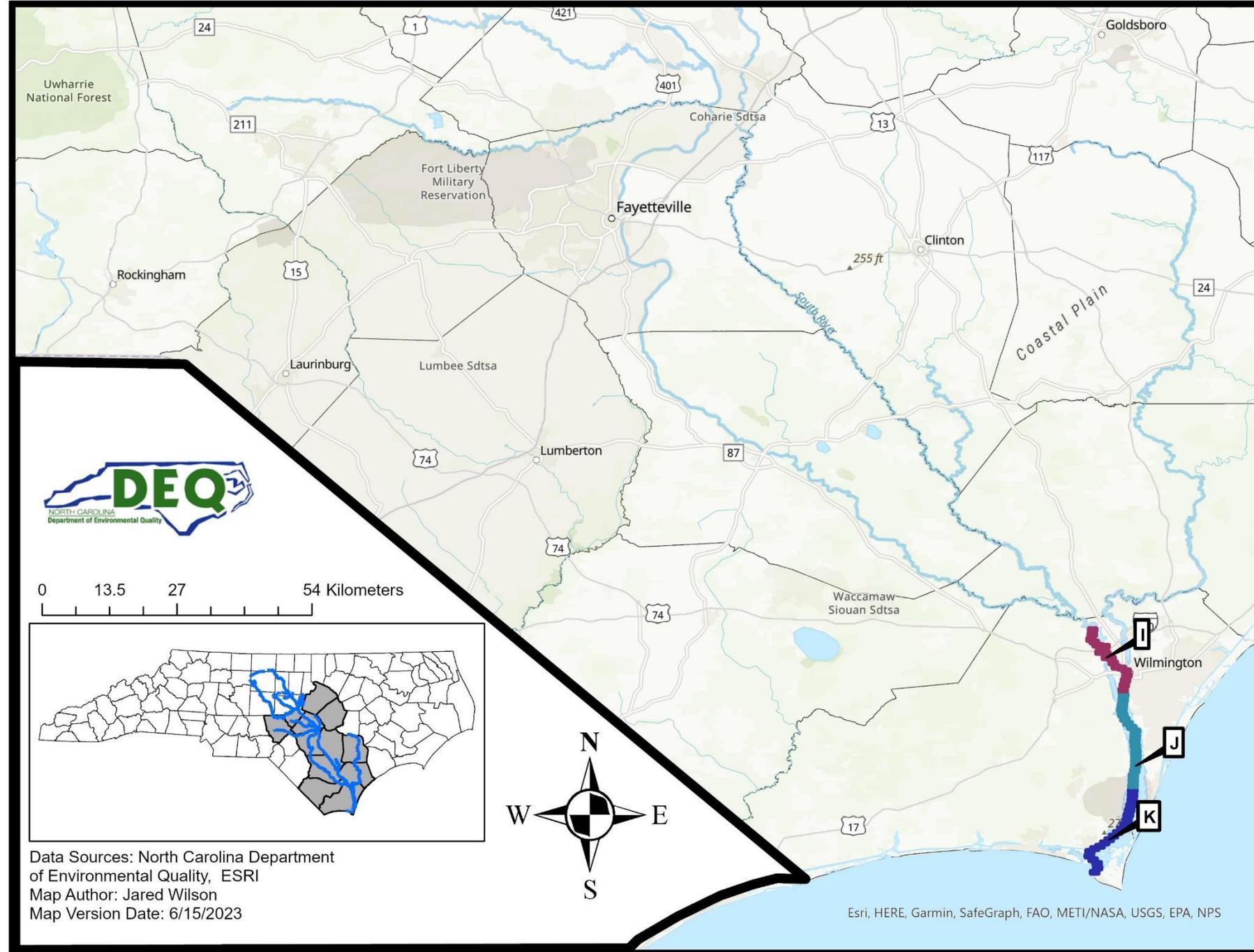
## *Freshwater Fish*

- Summary
- Altogether, the data collected in this study will inform current activities in NCDEQ and NCDHHS and will provide a comprehensive data set to inform additional PFAS fish studies.
- Of all PFAS measured, PFOS was the leading compound in fish fillets from the Cape Fear River
  - Many other studies show PFOS present in fish fillets
- Preliminary statistical analysis show that species is the most significant factor in predicting PFOS concentration in fish fillets.
  - Likely linked to diet and trophic position
  - Length, Weight, and Site/Location were not good indicators of PFOS concentrations
  - 211 total fish, across 8 species.
- Next Steps
- Use data in regulatory activities.
- NC DHHS Fish Consumption Advisory – released July 13!

# 2022 Fish & Surface Water Collection Proje

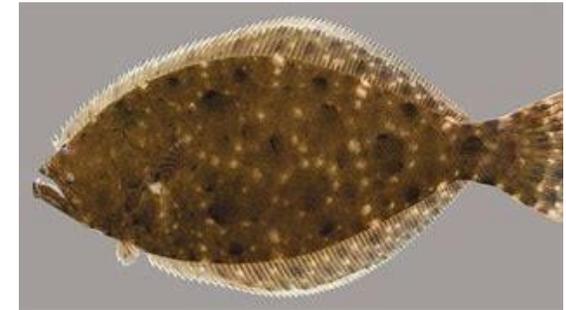
## Saltwater Collection Locations

The Cape Fear River was divided into eleven 20km segments beginning south of Fayetteville, NC.



2022  
*Fish &  
Surface Water  
Collection Project*

Targeted for Sampling at all Locations



Saltwater Species

Black Drum

Red Drum

Southern Flounder

Sheepshead

Atlantic Croaker

Blue Catfish

Flathead Catfish

Speckled Trout

Striped Bass

Opportunistically Sampled



# *Summary and Next Steps*

## *Saltwater Fish*

- Summary

- Many diverse species were collected in the saltwater locations (67 total fish, across 9 species).
- Fish tissue and water samples have been processed and sent to the lab for analysis of 56 PFAS compounds.
- Lab data has begun to be received, still waiting on some samples to be analyzed.

- Next Steps

- Quality Check the fish tissue and surface water data prior to analysis.
- Analyze the data and present to the SAB in Fall 2023/Winter 2024.
- Use data in DEQ's regulatory activities, where required.
- Use for a DHHS Fish Consumption Advisory, where applicable.

*Thank you*



*Department of Environmental Quality*

