

# PFAS in the Cape Fear

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Coastal Connections

April 24, 2025

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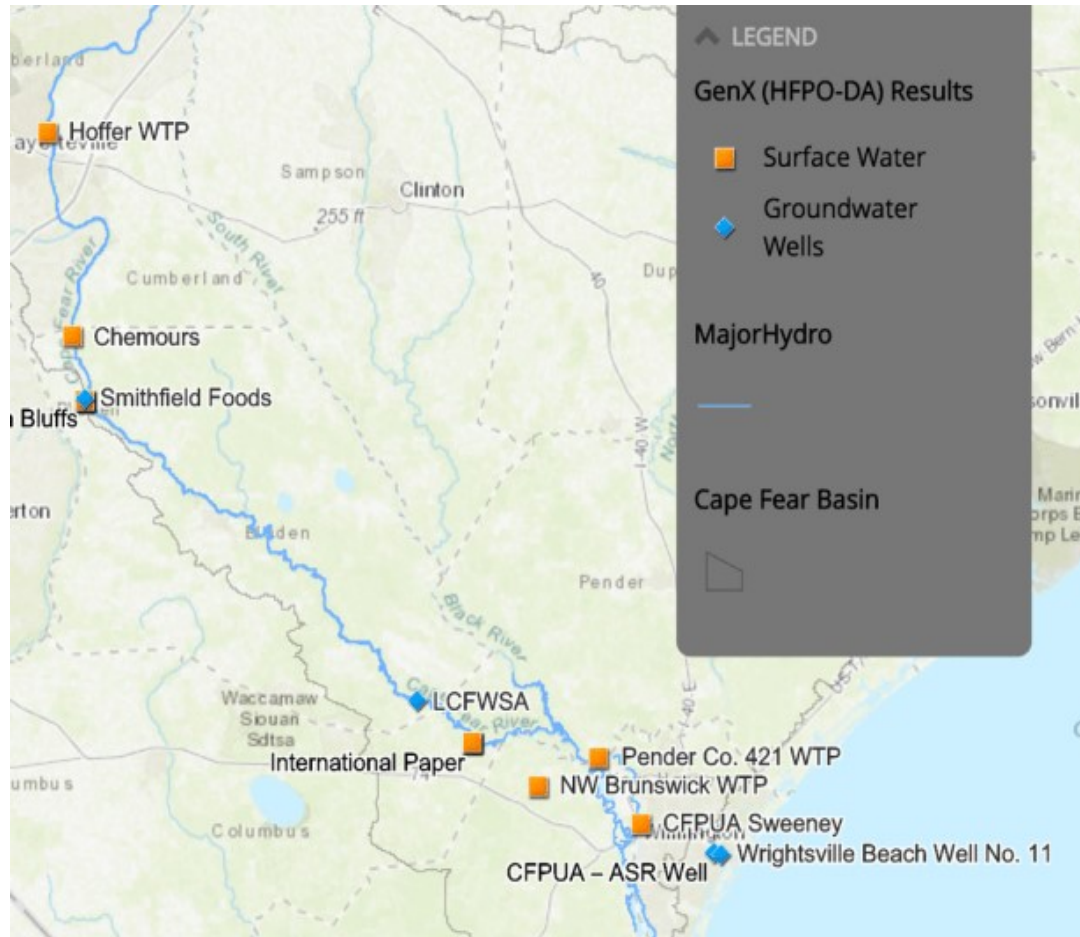
Much more info at:  
[capefearriverwatch.org/genx](http://capefearriverwatch.org/genx)

# **Toxin taints CFPUA drinking water**

WILMINGTON -- A chemical replacement for a key ingredient in Teflon linked to cancer and a host of other ailments has been found in the drinking water system of the Cape Fear Public Utility Authority (CFPUA), which cannot filter it.

Wilmington Star-News  
June 7, 2017

# Chemical Contamination of the Cape Fear



Source: NC Dept. of Environmental Quality

# The basics

## What are PFAS?



Image: Australian  
Government  
Dpt. of Defense

Per and poly-fluoroalkyl substances or PFAS, are man-made chemicals that resist heat, oil, stains and water.

- The first PFAS (PCTFE) was discovered in Germany in 1934.
- 1936: PTFE was accidentally discovered by DuPont chemists, used in Manhattan Project to help build the atomic bomb.
- 1945: DuPont trademarks PTFE as Teflon.
- 1945 3M buys a PFAS production process and upscales production.
- 1951 DuPont begins Teflon Production in Parkersburg, VA using PFOA as an important additive.
- 1953 3M creates PFOS, to be used for years in products like Scotchguard and firefighting foam.

PFAS are resistant to thermal, chemical, and biological degradation.

<https://www.manufacturingdive.com/news/the-history-behind-forever-chemicals-pfas-3m-dupont-ptfe-pfoa-pfos/698254>



# The basics

## NARRATIVE that Needs to Change:

From: “Essential Use PFAS Products”

To: Products may be deemed essential, but is it essential that PFAS is in them?

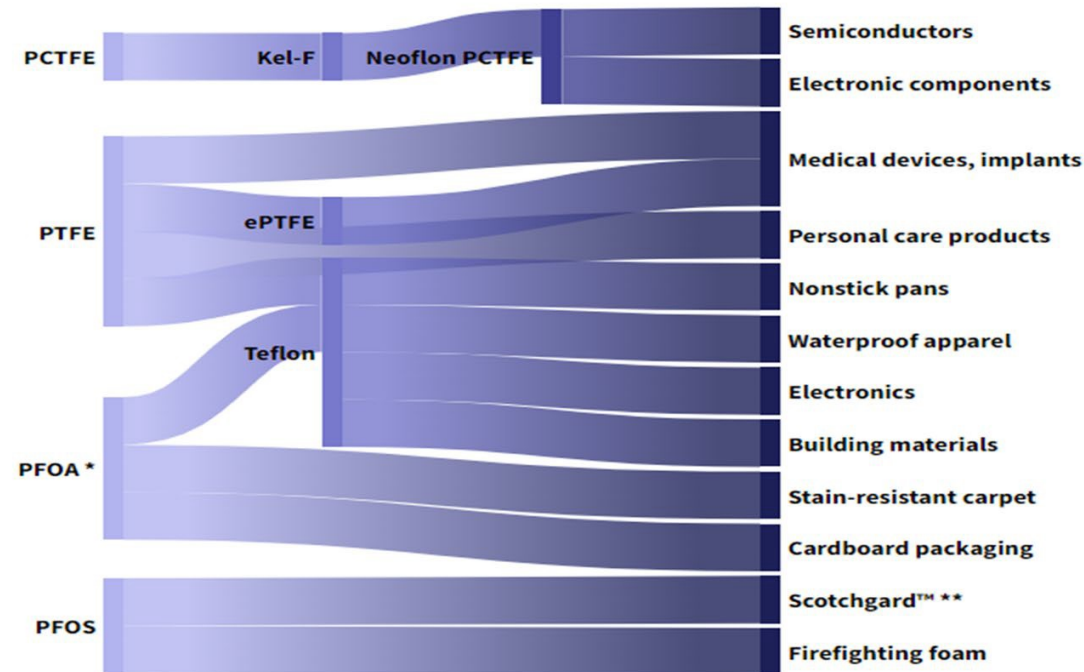
## STRATEGY that Needs to Change:

From: Filtration

To: R&D to find alternatives for ‘essential uses’ and stop production for all others

### How PFAS evolved from unbranded chemicals to components in everyday items

Four key types of PFAS that have been pervasive in the past 50 years, their commercial forms and some of the products in which they have been used.



Source: Chart: Jasmine Ye Han/Manufacturing Dive •

\* U.S. manufacturers have largely phased out the use of PFOA in commercial products

\*\* 3M began phasing out the use of PFOS from Scotchgard in 2000

# The basics

—— High certainty  
----- Lower certainty

Developmental effects  
affecting the unborn child

Delayed mammary gland development

Reduced response to vaccines

Lower birth weight

Obesity

Early puberty onset

Increased miscarriage risk  
(i.e. pregnancy loss)

Low sperm count and mobility

Thyroid disease

Increased cholesterol levels

Breast cancer

Liver damage

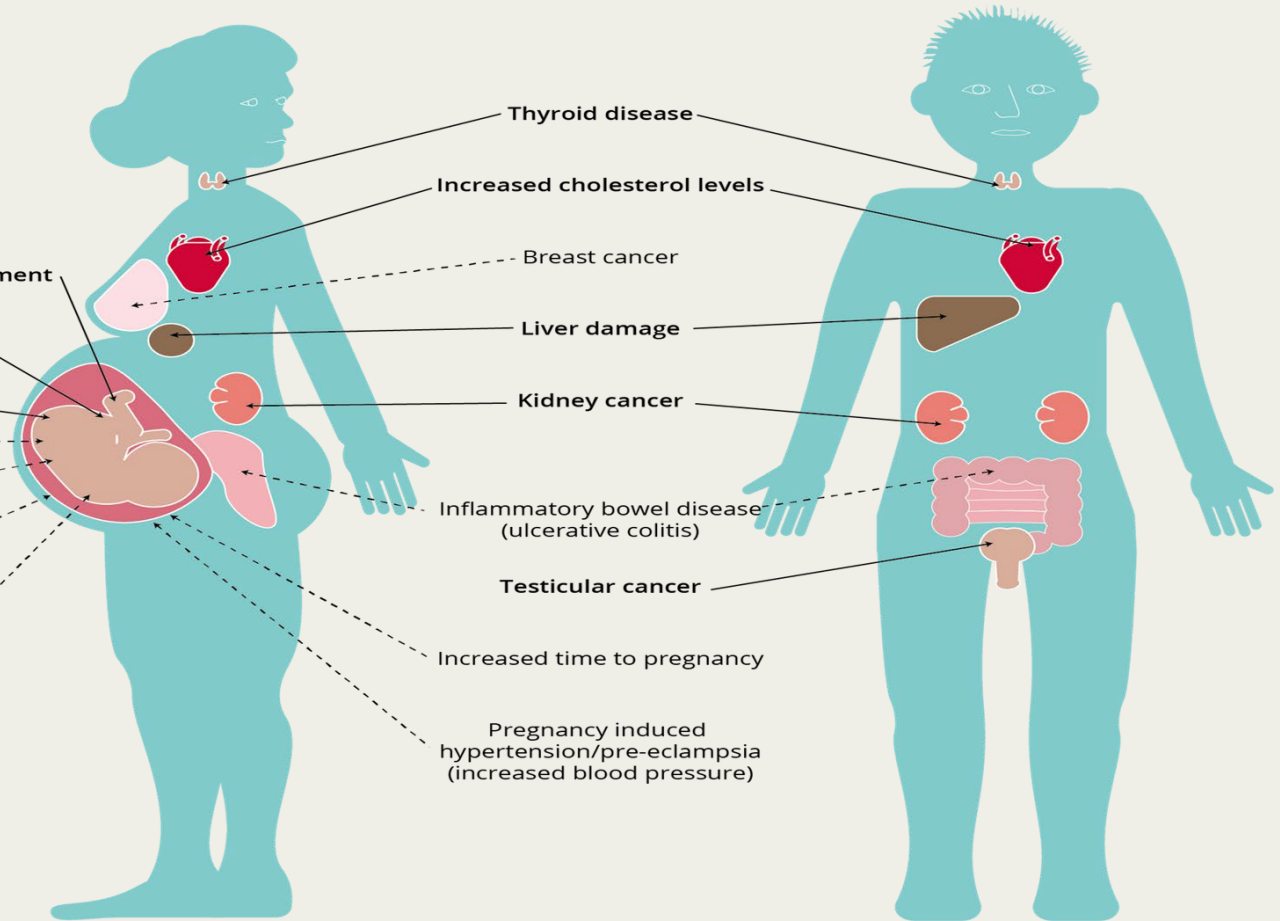
Kidney cancer

Inflammatory bowel disease  
(ulcerative colitis)

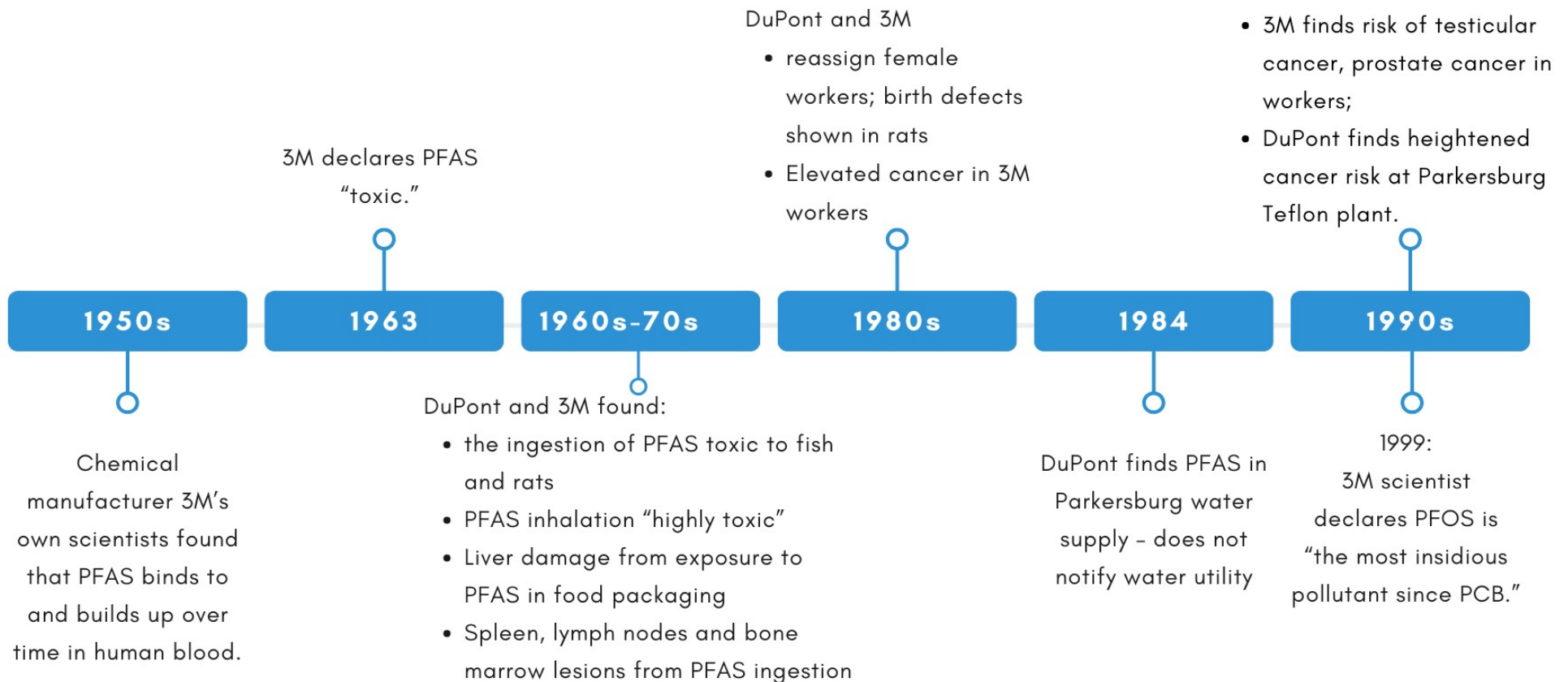
Testicular cancer

Increased time to pregnancy

Pregnancy induced  
hypertension/pre-eclampsia  
(increased blood pressure)



# WHO KNEW WHAT WHEN





“DuPont and 3M...[worked] closely for decades on PFOA animal studies. One of the studies back in 1978 looked at the effects of PFOA on monkeys.

**“All of the monkeys given the highest does had died within one month.”**

Rob Billott, *Exposure*



# Who Knew What When?: The Polluter

[https://www.youtube.com/clip/UgkxiRT\\_r9Am9AZU6KLby4yPEQJWqJtQI-6Z](https://www.youtube.com/clip/UgkxiRT_r9Am9AZU6KLby4yPEQJWqJtQI-6Z)

<https://www.youtube.com/clip/UgkxeMkymc1Dvw5wEAMmwMi-LLfNigJucTrz>

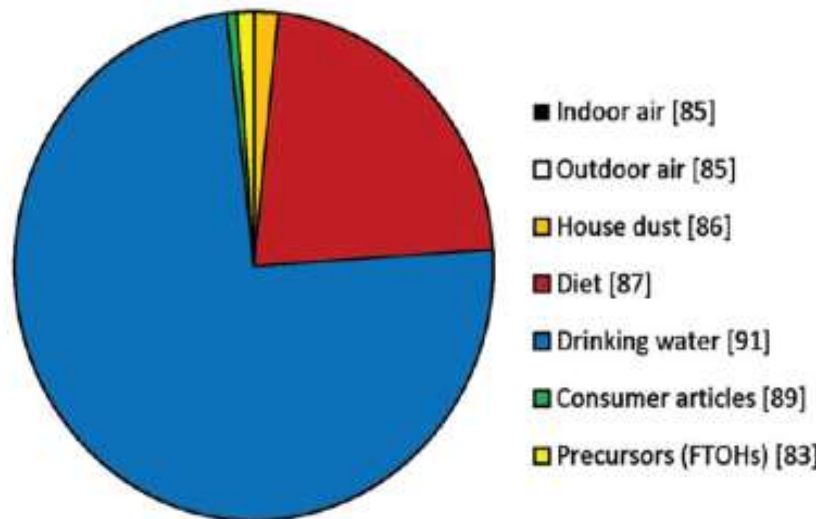
[https://youtube.com/clip/Ugkx-LSCPI5q3\\_YqrL8-nZ6Q4ibdQoCeL25](https://youtube.com/clip/Ugkx-LSCPI5q3_YqrL8-nZ6Q4ibdQoCeL25)

# Chemours' One and Only Meeting With Their Neighbors – June, 2018



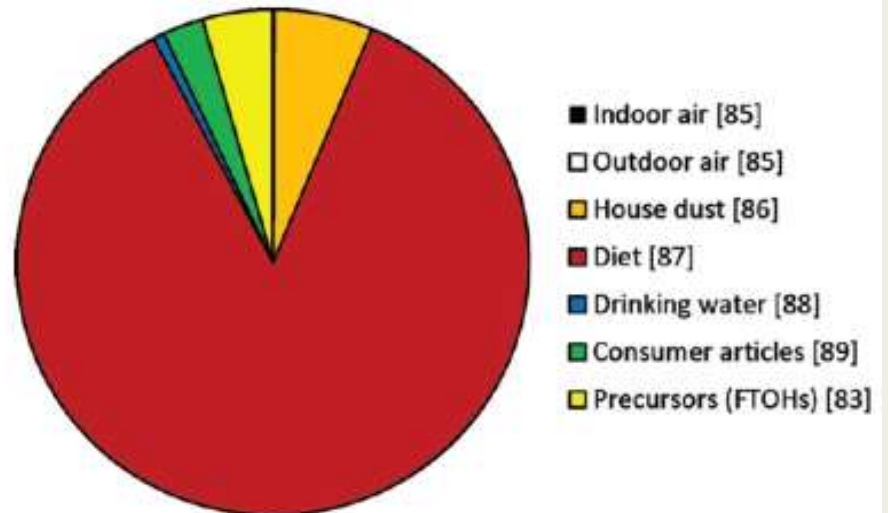
# PFAS Exposure in the General Population

“High” Levels in Drinking Water (~500 pptr)



Source: Vestergren et al. 2009

Low Levels in Drinking Water (< 5 pptr)



Source: Vestergren et al. 2009

# Tackling PFAS – Is Treating the Water Enough?

Pingping Meng<sup>1,2</sup>, Owen W. Duckworth<sup>3</sup>,  
Detlef R.U. Knappe<sup>2</sup>

<sup>1</sup>Department of Chemistry, East Carolina University

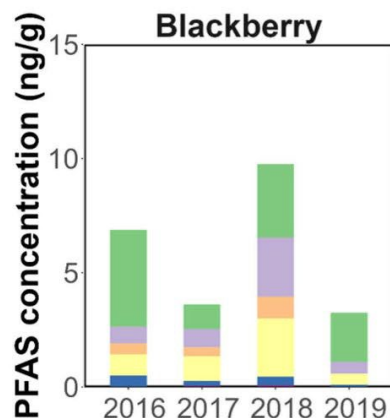
<sup>2</sup>Department of Civil, Construction, and  
Environmental Engineering, North Carolina State  
University

<sup>3</sup>Department of Crop and Soil Sciences, North  
Carolina State University

Soil,  
Water,  
Pesticides,  
Packaging,  
Sludge Fields,  
Animal Exposure

1 “serving” of blackberries =  
150 grams

## How important is dietary uptake comparing to drinking water uptake?



**Assumptions:** An adult drinks 2 L of water per day,  
which contains 10 ng/L of GenX

### Proposed Health-based standard

Year	GenX conc. (ng/g)	Equivalent blackberry (g)	Equivalent blackberry (oz)
2016	0.50	40	1.4
2017	0.24	83	2.9
2018	0.39	51	1.8
2019	0.10	200	7.1

**In PFAS-impacted communities, dietary uptake could be an important  
route of exposure, in addition to drinking water uptake**



# Progress under the Consent Order

- Process wastewater: captured/shipped off site (asterisk)
- Air Emissions: thermal oxidizer installed Dec. 31, 2019, more than 99% reduction (asterisk)
- Old Outfall Discharge: GAC in place October 1, 2020 showing near non-detect levels, eliminating total PFAS leaving Chemours' site by one-fourth
- Non-targeted Analysis: Initial report released June 30, 2020: 257 "Unknown" PFAS
- Toxicity Studies: Just 5 PFAS included, slow going
- Barrier wall to stop groundwater from entering Cape Fear River constructed
- Well Sampling and Water Replacement – Ongoing...





# PRIVATE WELLS (RELATIVE TO CONSENT ORDER)

Lower Cape Fear:  
(Since 2022): 2,098

## Four Counties Interim Replacement Drinking Water Actions

Replacement drinking water actions from February 15, 2022, the start date of the Chemours Call Line in the Four Counties Area, through December 31, 2024.

Metric	Total	New Hanover	Brunswick	Pender	Columbus
<b><i>Eligibility for Replacement Drinking Water</i></b>					
Total Number of Private Wells Above the CO Criteria Including Shared Well Users	2,098	1,083	326	682	7
Number of Sampled Private Wells Above the CO Criteria	1,812	902	321	582	7
Number of Shared Private Well Users Above the CO Criteria	286	181	5	100	0

Fayetteville area:  
(Since 2019): 7,789

## Fayetteville Counties Area

Metric	Total	Cumberland	Bladen	Robeson	Sampson	Hoke
<b><i>Eligibility for Replacement Drinking Water</i></b>						
Total Number of Private Wells Above the CO Criteria Including Shared Well Users	7,789	6,885	342	338	224	0
Number of Sampled Private Wells Above the CO Criteria	7,255	6393	327	320	215	0
Number of Shared Private Well Users Above the CO Criteria	534	492	15	18	9	0

Total exceedances: 9,887

\*\*\*\*\*

# ACTION ITEM

## DEQ: Well Owners Need Your Help

### Falling through the cracks: As Congress looks to address PFAS, some are getting left behind



Wilmington Star News; <https://www.starnewsonline.com/story/news/local/2023/04/05/as-congress-responds-to-pfas-genx-crisis->

675 Letters Sent



Only 125 more until our goal of 800

ENTER YOUR RETURN ADDRESS



We've got your address, Heather!  
Not Heather? [Click here.](#)

START WRITING

You may receive email updates from *Cape Fear River Watch*, the sponsor of this letter campaign.

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# FIRST FEDERAL PFAS REGULATION

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(issued 26 years after they had proof of the dangers)

(doesn't hold polluters accountable, but puts burden on utilities/ie ratepayers – and taxpayers)

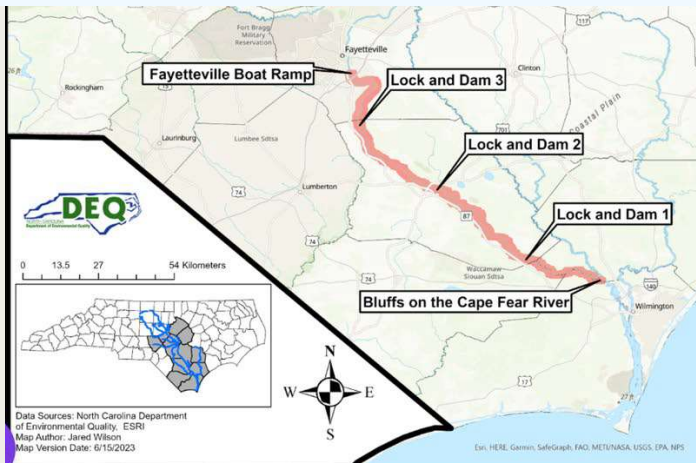
(essentially incentivizes more PFAS production by focusing on filtration)

Compound	Final MCLG	Final MCL (enforceable levels)
PFOA	Zero	4.0 parts per trillion (ppt) (also expressed as ng/L)
PFOS	Zero	4.0 ppt
PFHxS	10 ppt	10 ppt
PFNA	10 ppt	10 ppt
HFPO-DA (commonly known as GenX Chemicals)	10 ppt	10 ppt
Mixtures containing two or more of PFHxS, PFNA, HFPO-DA, and PFBS	1 (unitless) Hazard Index	1 (unitless) Hazard Index

# FISH CONSUMPTION ADVISORY(ISSUED JULY 2023)

# NCDHHS Recommends Limiting Fish Consumption from the Middle and Lower Cape Fear River Due to Contamination With “Forever Chemicals”

The North Carolina Department of Health and Human Services is recommending limits on consumption of certain freshwater fish from the middle and lower Cape Fear River based on concerns about exposure to perfluorooctane sulfonic acid (PFOS) found in fish sampled from that area.



Freshwater Fish Species	Advisory for Women of Childbearing Age (15 to 44 years), Pregnant Women, Nursing Mothers and Children
American Shad, Blue Catfish, Channel Catfish	<b>No more than 1 meal per year,</b> combined across all species.
Bluegill, Flathead Catfish, Largemouth Bass, Striped Bass, Redear	<b>Do Not Eat</b>

Freshwater Fish Species	Advisory for All Other Individuals
American Shad, Blue Catfish, Channel Catfish	<b>No more than 7 meals per year,</b> combined across all species.
Bluegill, Flathead Catfish, Largemouth Bass, Striped Bass, Redear	<b>No more than 1 meal per year,</b> combined across all species.



# NE CAPE FEAR RIVER

## LEAR CORPORATION

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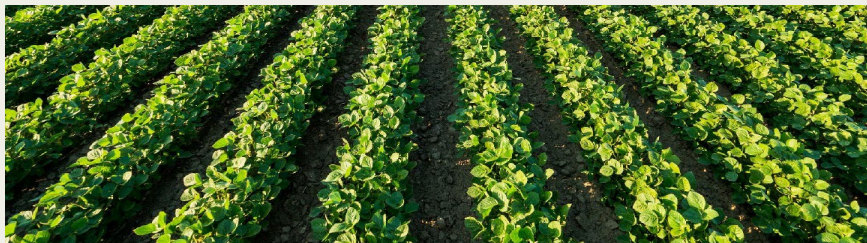
- In 2019, DEQ required sampling at Lear Corp. found PFAS concentrations up to 1,863 ppt
    - They did nothing.
  - In late 2022, Kemp noticed some foam during a CAFO flight and subsequently sampled the water.
    - Results showed, you guessed it, loads of PFAS.
  - He notified DEQ.
    - They did nothing.
  - He notified SELC
    - They did stuff.
  - DEQ issued a draft permit with NO PFAS limits.
    - Y'all did stuff
      - Sent 1,061 emails to DEQ!!
      - EPA's letter to DEQ echoed your concerns.
      - DEQ withdrew the Permit.
      - We expect the permit to be re-issued, still with no protections
- Kemp and a CFRW intern, Lauren sampled some fish . . .**



FISH IN THE NE CAPE FEAR RIVER,  
DOWNSTREAM OF LEAR CORP.  
CONTAIN BETWEEN  
**8 AND 20 TIMES MORE PFAS**  
IN THEIR TISSUE THAN THE FISH SAMPLED  
IN THE MAIN STEM  
THAT PROMPTED THE FISH CONSUMPTION  
ADVISORY LAST YEAR.



# ACTION ITEM



## Air Permit Application

Vinyl Ethers Expansion and Hydrolysis Line

October 2022

EXPERTS IN GREENWASHING ...

NOT SO MUCH IN CHEMISTRY

### Tell DEQ - No Chemours Expansion



1,562 Letters Sent

Only 0 more until our goal of 1,000

ENTER YOUR RETURN ADDRESS



We've got your address,  
Heather!

Not Heather? [Click here.](#)

START WRITING

You may receive email updates from *Cape Fear River Watch*,  
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# LEGISLATIVE - INDUCED FAILURE

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## Underfunding DEQ

The legislature has underfunded the state environmental agency (DEQ) to the point that it does not have the staff or other resources to protect our waters from polluters.

### Background:

As with most states, EPA delegated authority to North Carolina to regulate pollution from industry into our waters through the “National Pollutant Discharge Elimination System” program.

This means the state took on EPA’s legal duty to: issue water pollution permits that protect North Carolina waters; to include participation from the public; and, to enforce against any polluters that violate water quality laws.

## Stacking Commissions

Through recent laws, the legislature has stacked pro -pollution interests on state commissions, who are blocking standards for PFAS and 1,4-dioxane and cutting the DEQ and its experts out of the process, preventing them from issuing water permits.

Partisan commissioners of the legislature’s “supermajority -controlled” Environmental Mgmt Commission (EMC) are prioritizing the bank accounts of a few industrial polluters over the health, welfare, and financial well - being of hundreds of thousands of real people.

The legislative supermajority -controlled EMC is posturing to take the authority to issue specific permits on their own —in particular, controversial ones where the polluter is unhappy with DEQ’s efforts to limit water pollution.

## “Judicial” Power Grab

The legislature modified state law to give the Office of Administrative Hearings final authority over water pollution permits instead of experts at DEQ and cutting the public out of the permitting process.

The OAH judge is essentially stripping the DEQ of its authority to issue permits by hand - picking cases brought to it by polluters who are unhappy with permits.

The chief administrative law judge has even ordered DEQ to pay nearly one million dollars in attorneys’ fees.

# LEGISLATIVE

## - INDUCED FAILURE: THE EMC

BREAKING NEWS: PFAS UPDATE



**‘Worse than nothing’: Proposal would require PFAS reduction plans without enforcing limits**

What you need to know about the potential rule that would not require enforceable pollution limits



“According to DEQ there may be 600 PFAS polluters sending their toxic wastewater to treatment facilities that cannot and do not treat PFAS,” Sargent said.

“All of these facilities should be working together to stop this pollution from reaching our drinking water and farmlands and instead all these facilities got together to write a rule that makes sure they don’t have to do a damn thing about it.”



The state’s Environmental Management Commission admitted - repeatedly - today during their public Committee meeting that **INDUSTRY DRAFTED 80% OF THIS DRAFT RULE** NOT the Department of Environmental Quality who are the experts on this issue.



# 1,4 dioxane rule & surface and groundwater standards



**Administrative Law Judge van der Vaart strips North Carolina of a key tool used to limit toxic chemicals, threatening nearly 1M people**

***Lawsuit filed by Asheboro, Greensboro, and Reidsville dismantles DEQ's ability to control 1,4-dioxane and other toxic chemical pollution***

**More Than 1M People Threatened by Pollution from Asheboro, Greensboro, and Reidsville**  
Three cities crippled NC's authority to keep 1,4-dioxane, PFAS, and other toxic chemicals out of drinking water



PRESS RELEASE | MARCH 26, 2025

## **Groups will sue to stop Asheboro's toxic pollution of drinking water supplies for 900,000 North Carolinians**

CHAPEL HILL, N.C.—On behalf Cape Fear River Watch and Haw River Assembly, the Southern Environmental Law Center today notified [the city of Asheboro](#) and its industrial customers, [StarPet](#) and [Waste Management's Great Oak Landfill](#), of its intent to sue for the failure to stop their toxic 1,4-dioxane pollution, a cancer-causing chemical, flowing into the drinking water supplies for about 900,000 North Carolinians.

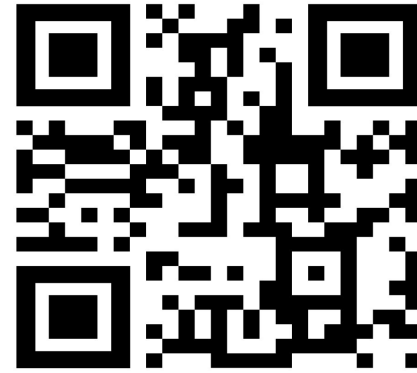


## Survey, Cape Fear Economy and PFAS

**B** *I* U ↔ ✂

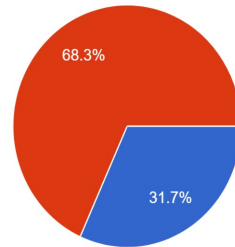
THIS FORM IS COMPLETELY ANONYMOUS.

No business name, or personal information is requested in this survey. Email addresses are NOT required to complete this survey.



Are you aware that the NC Chamber of Commerce conducts lobbying efforts and has helped STALL efforts to regulate PFAS in North Carolina? (See background information at end of survey.)

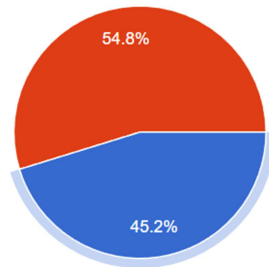
126 responses



● Yes  
● No

Has PFAS affected your business / field of work?

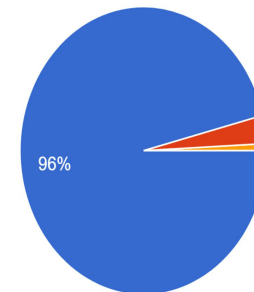
126 responses



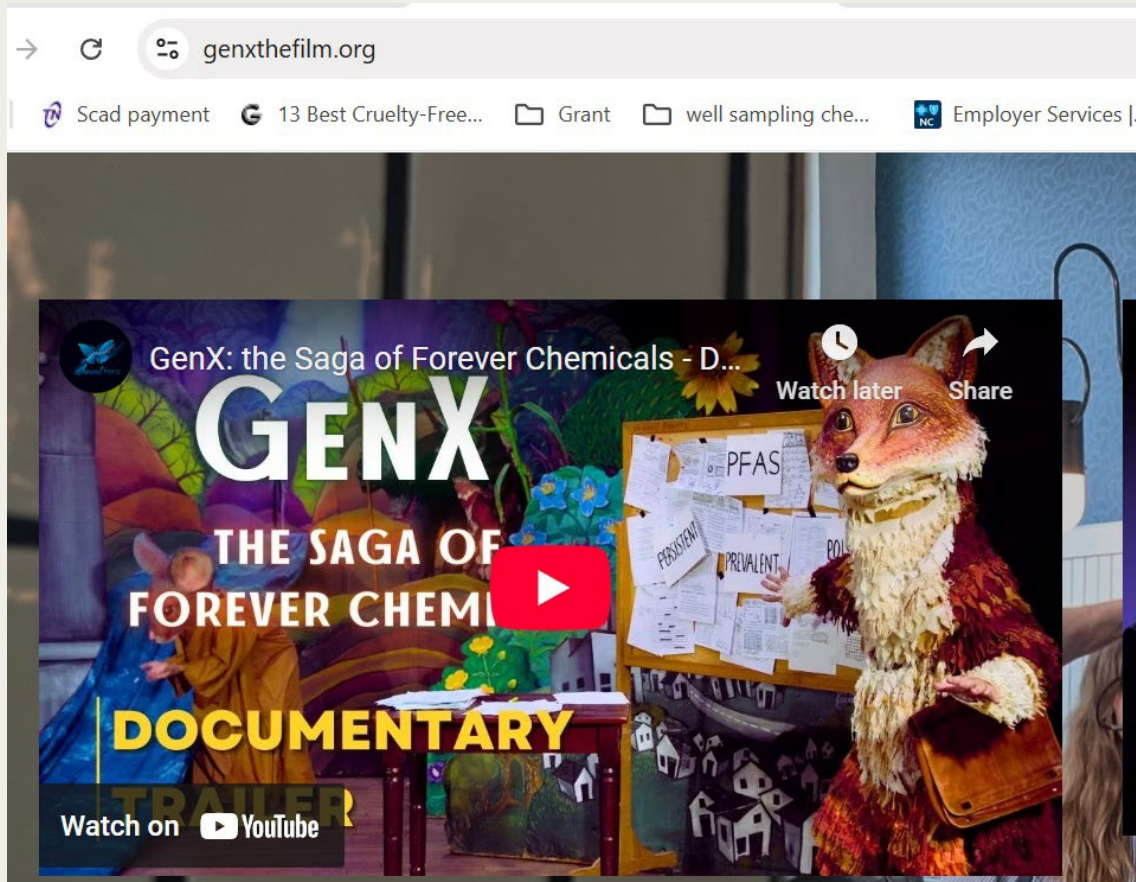
● Yes  
● No

Do you think the NC Chamber of Commerce and its local chapters should support efforts to regulate PFAS so that large companies need to limit their release of it?

126 responses



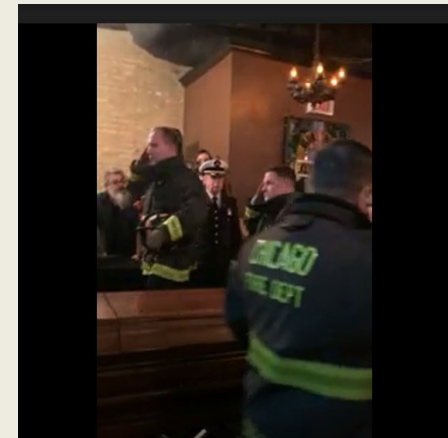
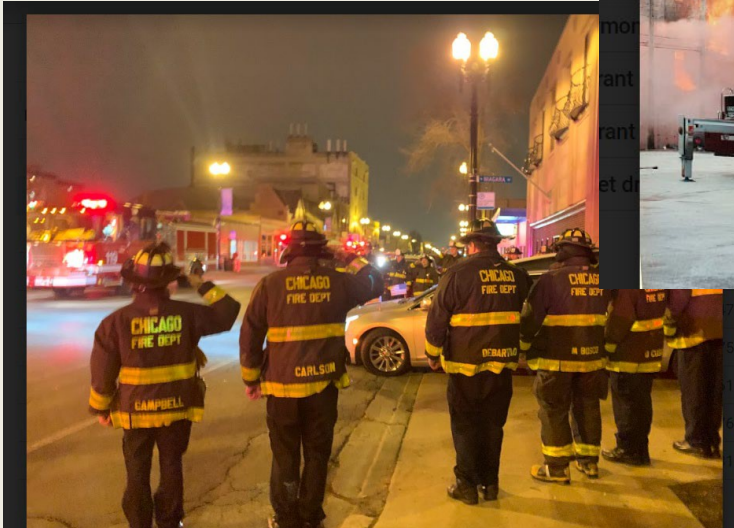
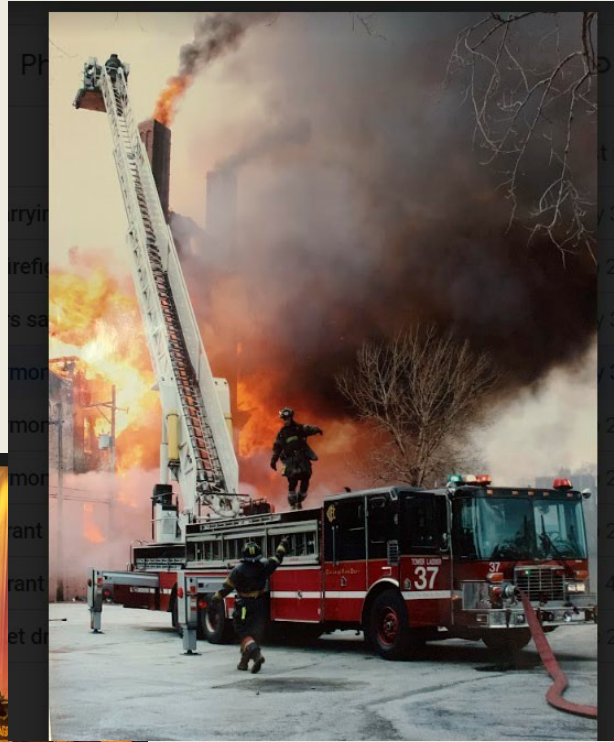
● Yes  
● No  
● No opinion



GENXTHEFILM.ORG

<https://www.youtube.com/watch?v=bWE9Eyu6TWA&t=1s>



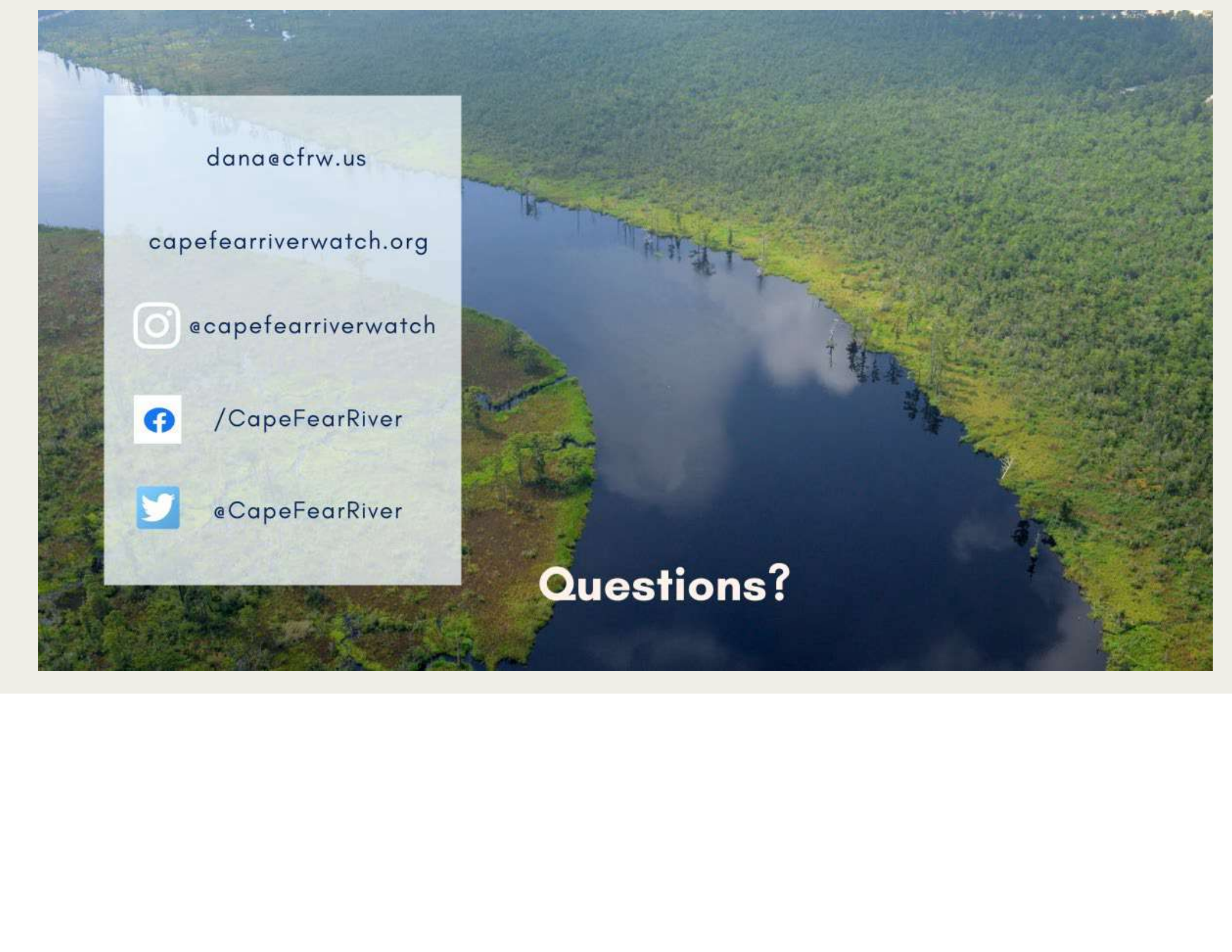


## More Action (Timely)

Contact your legislators and ask them to support


- HB 570: Responsible Firefighting Foam Management Act
- HB 569: PFAS Pollution & Liability Act
- SB 666: Water Safety Act


GO TO [www.ncleg.gov](http://www.ncleg.gov) & click ‘FIND MY LEGISLATORS’




dana@cfrw.us

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**Questions?**