PFAS in Florida
Why It Matters…

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University of Notre Dame

28 May 2028

PFAS 101:
Per- & Polyfluorinated Alkyl Substances

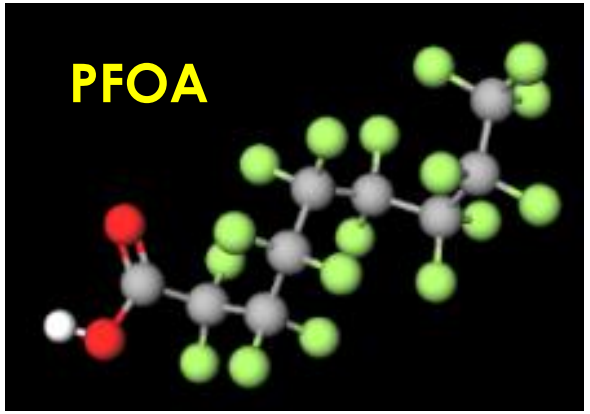
- Fluorinated organic compounds were developed commercially around WWII
- All are man-made
- A confusing array of names:

  Organofluorine chemicals,

  Perfluorinated Compounds (PFCs),

  Per- and Polyfluoroalkyl Substances (PFAS)

  "The Forever Chemicals"

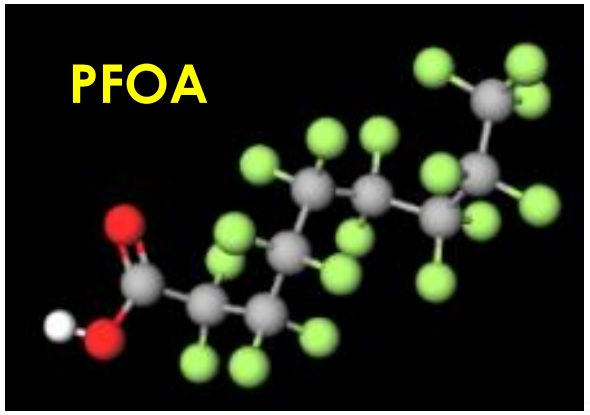


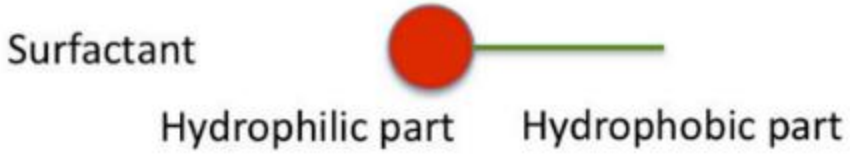
PFAS 101:
Per- & Polyfluorinated Alkyl Substances

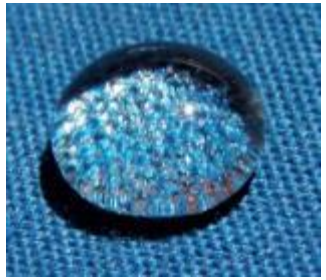
- Amazing surfactant properties !
- Used on textiles, carpets, paper, paints, cosmetics, coatings… Used as lubricants, flame retardants, solvents for polymers, fire-fighting foams…

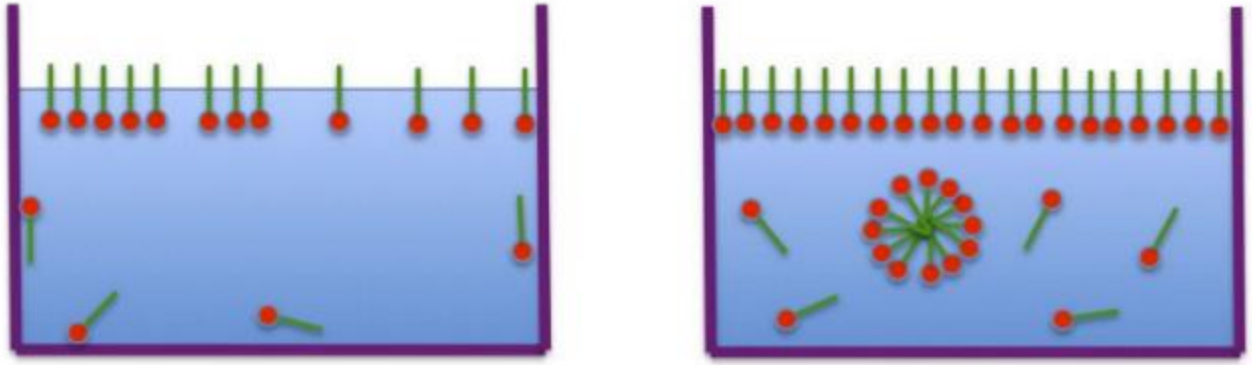
More than 200 commercial uses ***(Glüge, et al. 2020)***

What make PFAS so good?







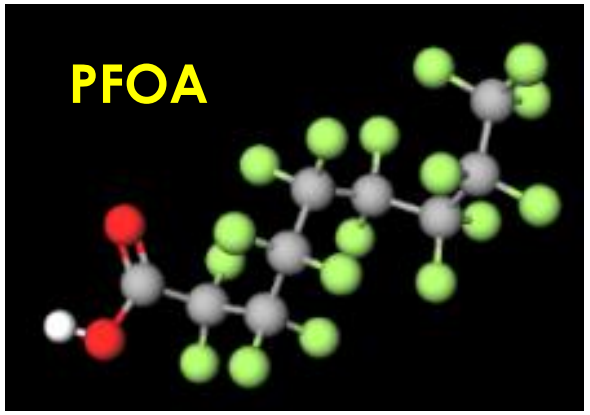


Average Bond Energies (kJ/mol)

Bond	Energy
Single Bonds	
H—H	432
H—F	565
H—Cl	427
H—Br	363
H—I	295
C—H	413
C—C	347
C—Si	301
C—N	305
C—O	358
C—P	264
C—S	259
C—F	453
C—Cl	339
C—Br	276
C—I	216

https://www.researchgate.net/post/What-is-actually-meant-by-surface-area-per-molecule

So what is the problem?



The carbon-fluorine bond is very hard to break…

Average Bond Energies (kJ/mol)

Bond	Energy
Single Bonds	
H—H	432
H—F	565
H—Cl	427
H—Br	363
H—I	295
C—H	413
C—C	347
C—Si	301
C—N	305
C—O	358
C—P	264
C—S	259
C—F	453
C—Cl	339
C—Br	276
C—I	216

These compounds have environmental lifetimes ≈100's of years or more!

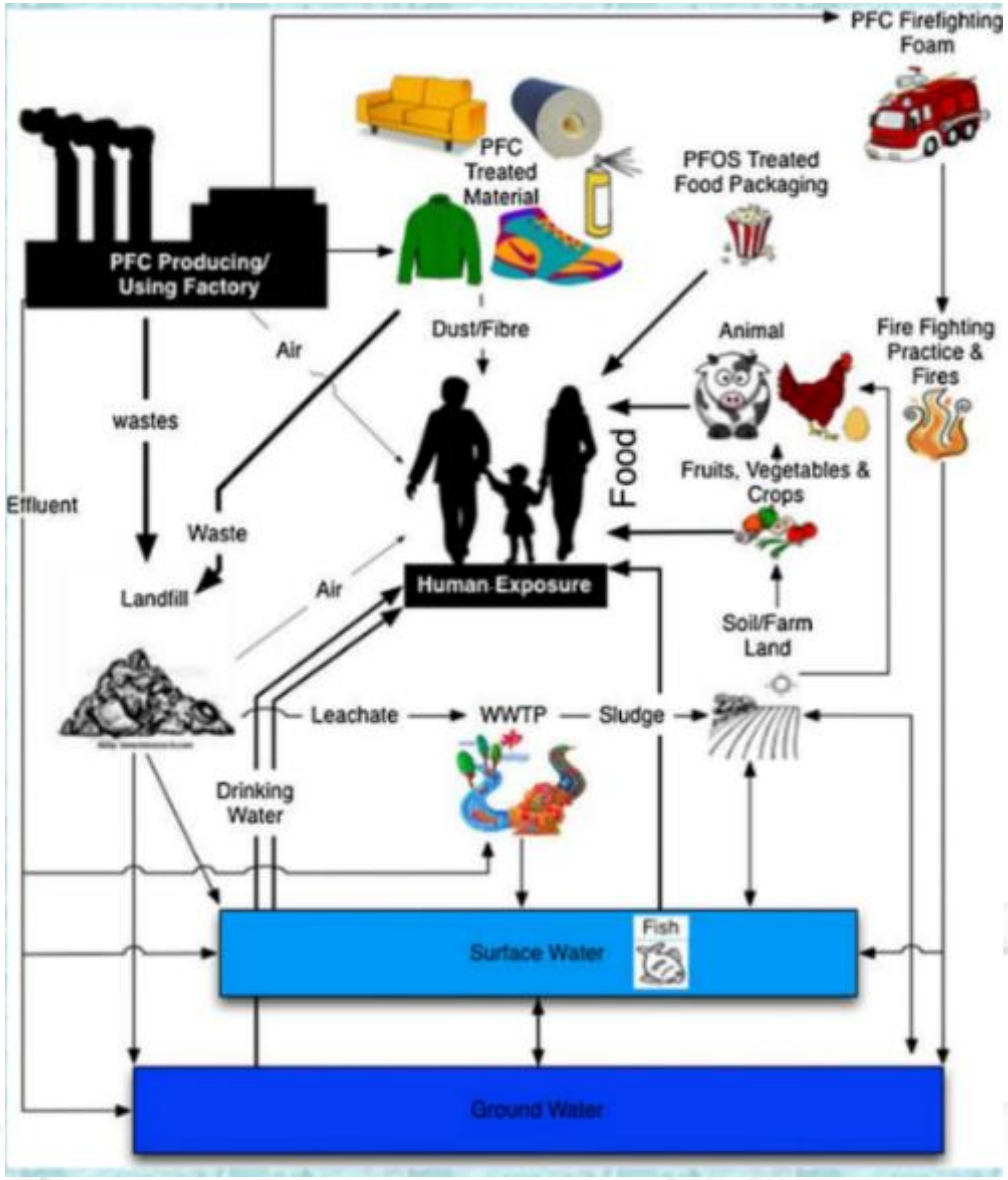
Many have no known biotic or abiotic degradation pathways….

ENVIRONMENTAL PERSISTENCE

Environmental Persistence

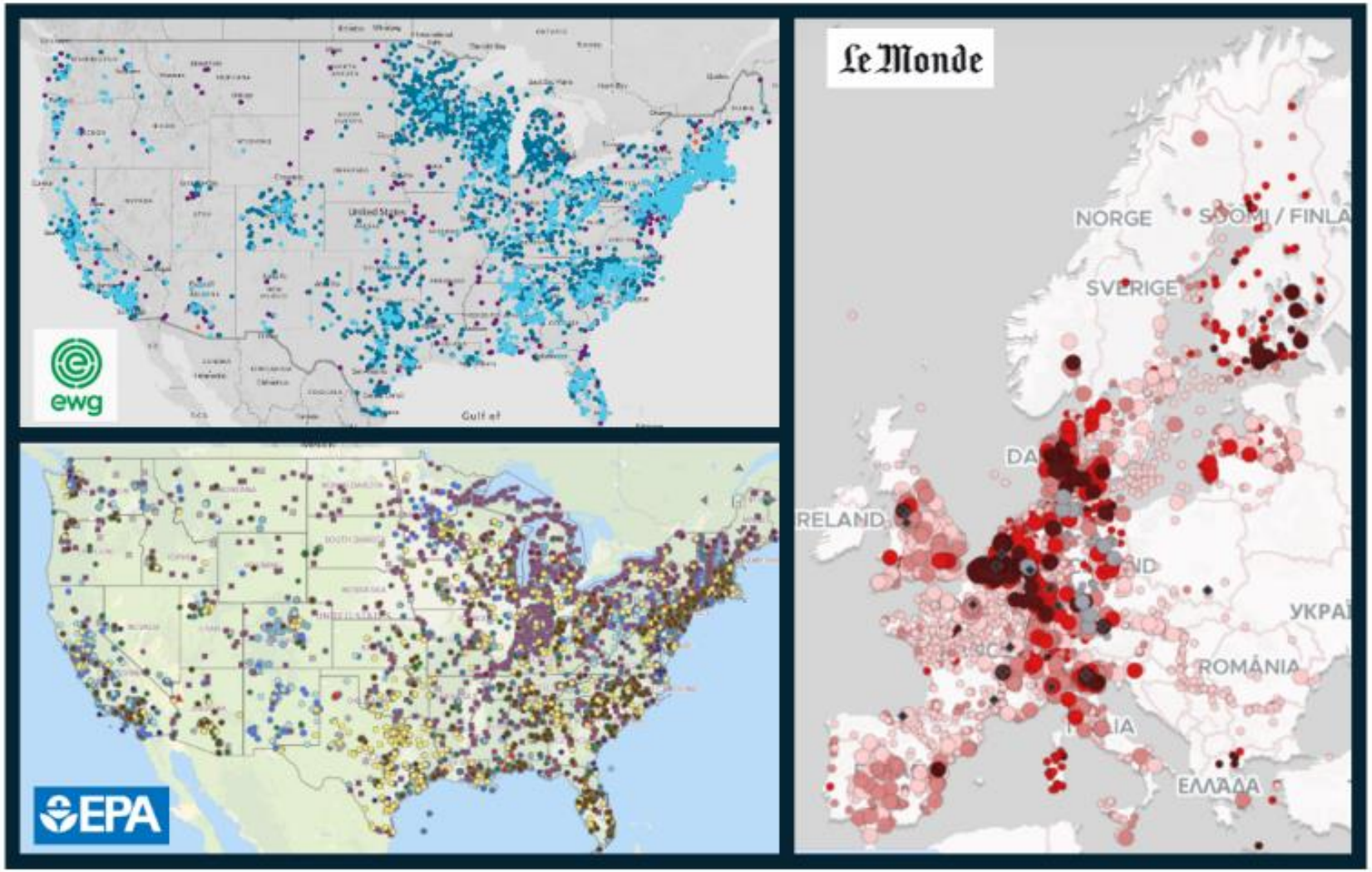
PFAS do not degrade…

Pass through Waste-Water Treatment Plant…



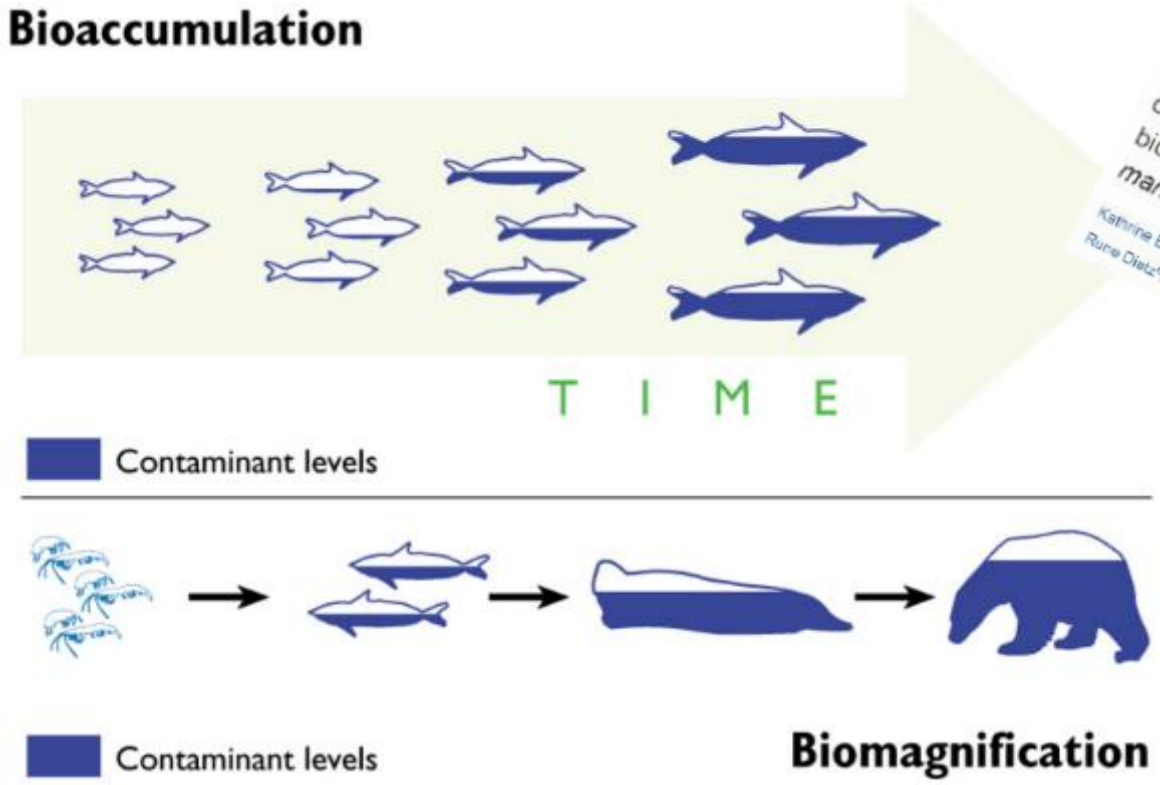
Oliaei, Fardin, *et al.* *Envr. Sci. Poll. Res.* 20 (2013) 1977-1992.

PFAS: Contamination



1. Environmental Working Group, map of PFAS contamination: https://www.ewg.org/interactive-maps/pfas_contamination/map/
2. US Environmental Protection Agency ECHO website: https://awsedap.epa.gov/public/extensions/PFAS_Tools/PFAS_Tools.html
3. LeMonde European PFAS website: https://www.lemonde.fr/en/les-decodeurs/article/2023/02/23/forever-pollution-explore-the-map-of-europe-s-pfas-contamination_6016905_8.html

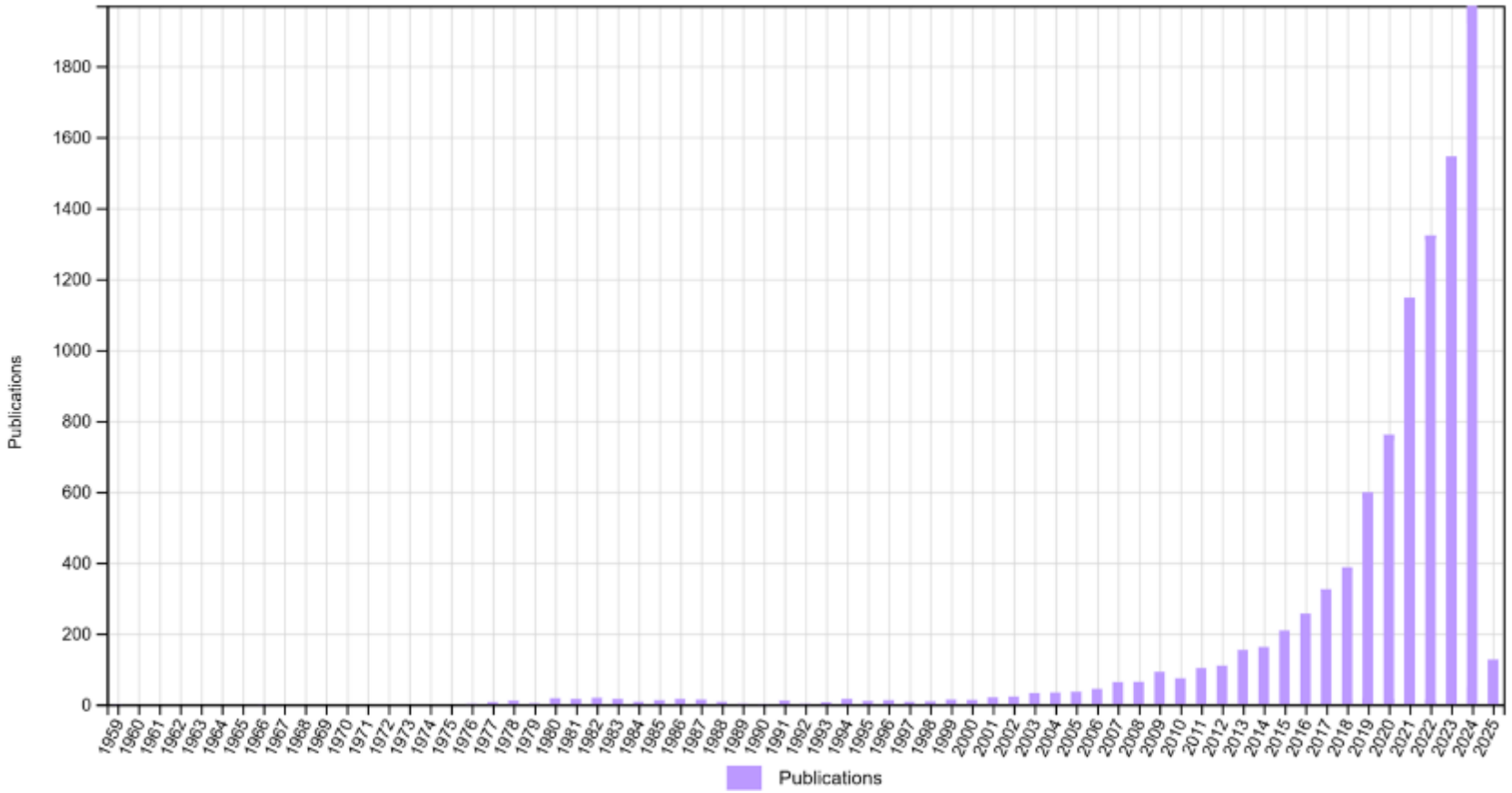
Bioaccumulation & Biomagnification



Polar bears: ~ 88ppb PFOA & PFOS

Humans (North America): ~ 5 ppb PFOA & PFOS

PFAS & Human Health Publications



Source: Web of Science

- Liver malfunction
- Thyroid disease
- Hormonal changes
- Hypertension
- Low birth weight
- Cancer
- Immune system reduction

PFAS & Human Health Publications

http://www.c8sciencepanel.org/index.html

In 2012, PFOA linked to

- Liver malfunction
- Thyroid disease
- Hypertension
- Preeclampsia
- Kidney Cancer
- Testicular Cancer

69,000 blood samples – Little Hocking, OH

PFAS & Human Health Publications

http://www.c8sciencepanel.org/index.html

Original Contribution

January 25, 2012

Serum Vaccine Antibody Concentrations in Children Exposed to Perfluorinated Compounds

Philippe Grandjean, MD, DMSc; Elisabeth Wreford Andersen, PhD; Esben Budtz-Jørgensen, PhD; et al

JAMA

https://jamanetwork.com/journals/jama/fullarticle/1104903

- Liver malfunction
- Thyroid disease
- Hypertension
- Pre-eclampsia
- Kidney Cancer
- Testicular Cancer

In 2012, PFAS linked to

- **Immune system reduction**

PFAS & Human Health Publications

https://www.nature.com/articles/s41370-024-00742-2

In 2025, PFAS linked to:

- Thyroid cancer,
- Oral cavity cancers,
- Soft tissue cancers
- Urinary cancers,
- Brain cancers,
- Leukemia,
- Soft tissue cancers.

Article | Open access | Published: 09 January 2025

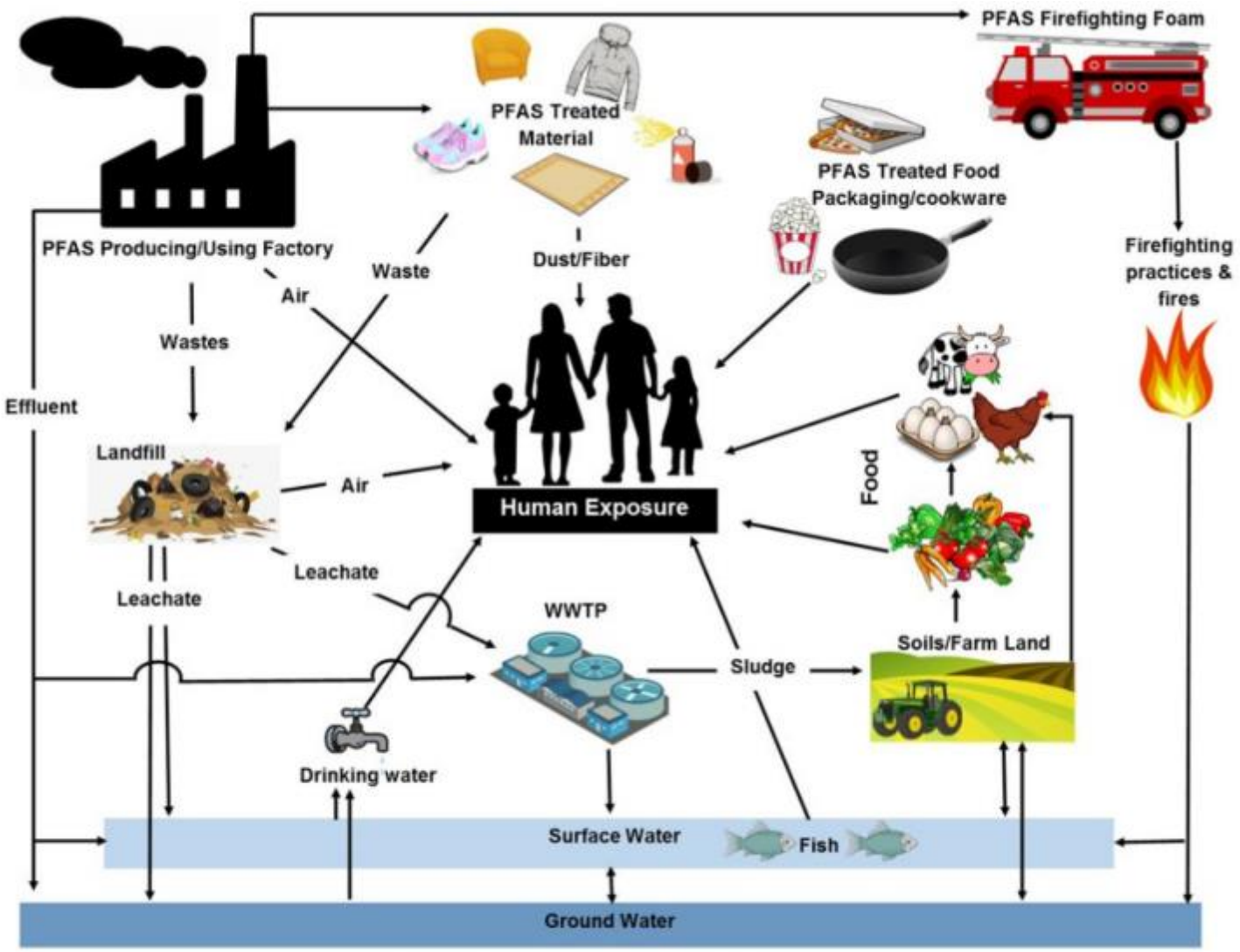
Associations between per-and polyfluoroalkyl substances (PFAS) and county-level cancer incidence between 2016 and 2021 and incident cancer burden attributable to PFAS in drinking water in the United States

Shiwen Li, Paulina Oliva, Lu Zhang, Jesse A. Goodrich, Rob McConnell, David V. Conti, Lida Chatzi & Max Aung

Journal of Exposure Science & Environmental Epidemiology (2025) | Cite this article

"PFAS in drinking water is estimated to contribute to 4626 incident cancer cases per year based on UCMR3 data and 6864 based on UCMR5."

PFAS Exposure



Human Exposure and sources of PFAS
Image: DWP, adapted from Oliaei et al. 2013.

- Most PFAS exposure comes from a lifetime of drinking water…
- Second most exposure comes from what we eat…
- Inhalation and dermal sorption are non-zero…

PFAS Exposure

- Former EPA Office of Water director:

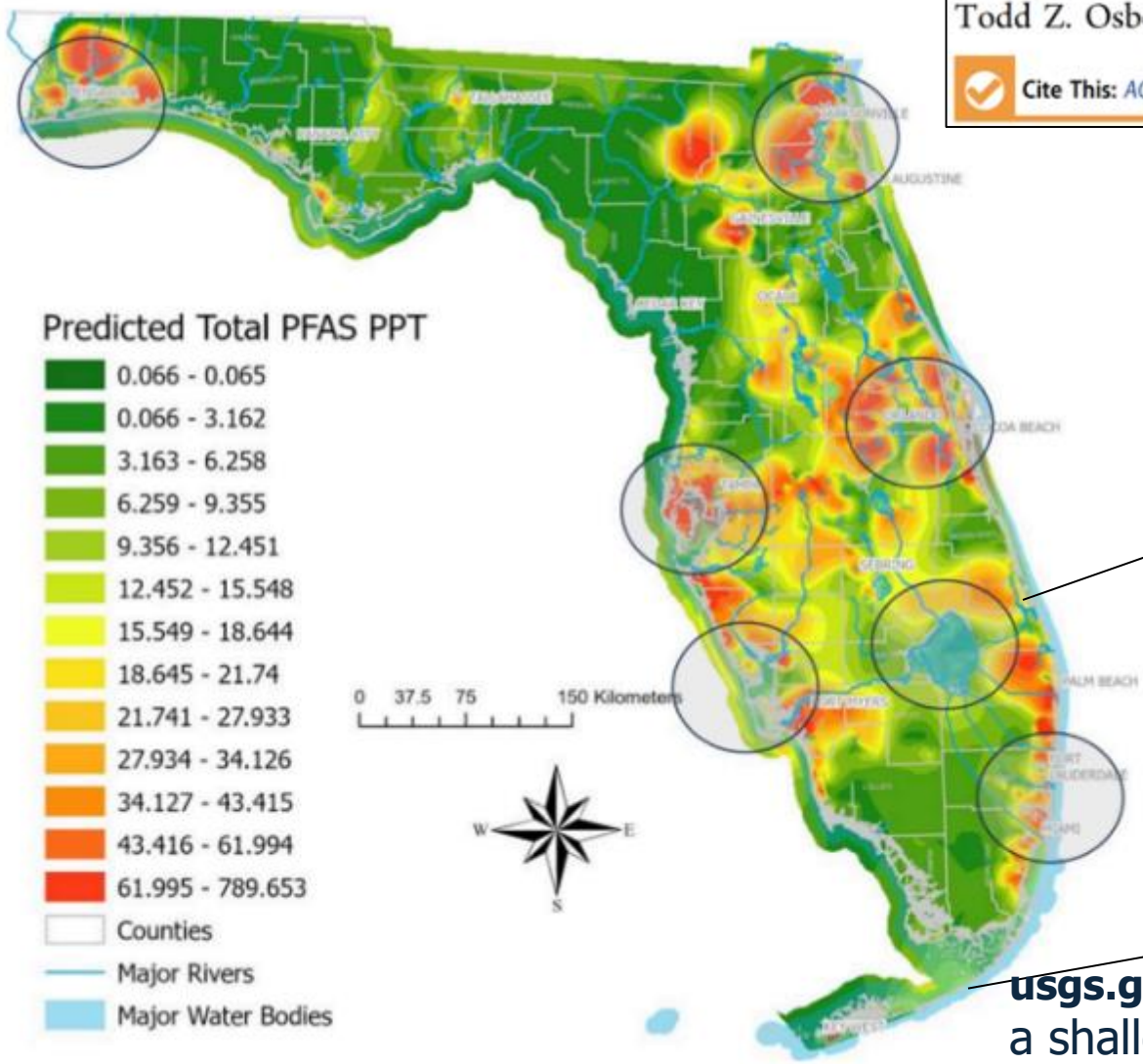
"PFAS is the most expensive contamination the US has ever faced"

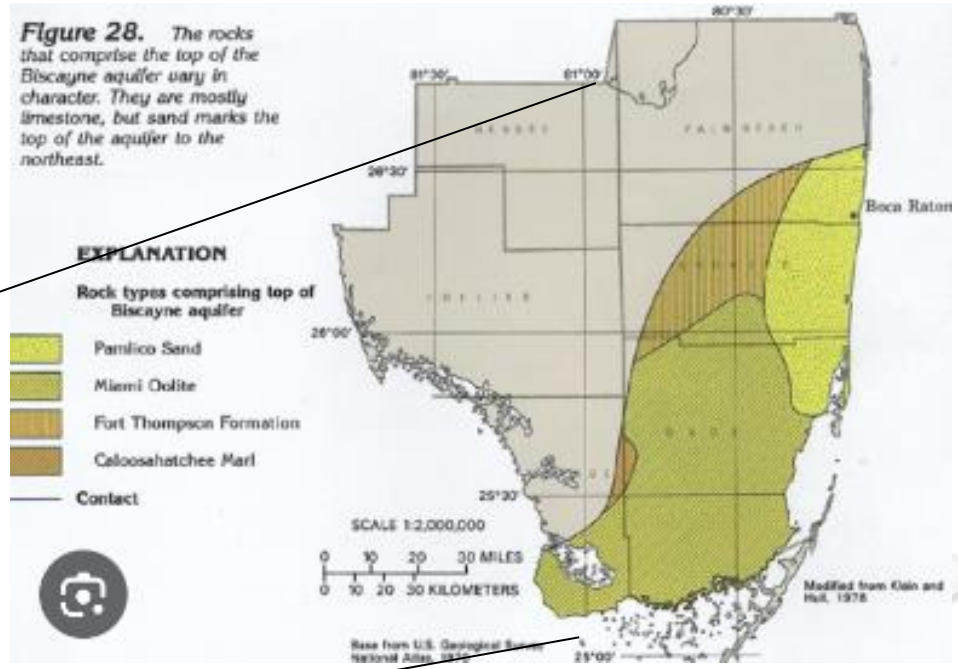
That covers the background material quickly –
Let's look at Florida…

Statewide Surveillance and Mapping of PFAS in Florida Surface Water

Camden G. Camacho, Alexander Antonison, Allison Oldnettle, Kaylie Anne Costa, Alina S. Timshina, Heather Ditz, Jake T. Thompson, Mackenzie M. Holden, William J. Sobczak, Jack Arnold, Mitchell Kozakoff, Kaitlyn Tucker, Hannah J. Brown, Rita Hippe, Courtney L. Kennedy, Lauren E. Blackman, Sanneri E. Santiago Borrés, Joe Aufmuth, Keyla Correia, Brian Martinez, Todd Z. Osborne, and John A. Bowden*

Cite This: *ACS EST Water* 2024, 4, 4343–4355 Read Online





usgs.gov/ha/ha730/ch_g/G-Biscayne.html = The Biscayne Aquifer, a shallow, largely uncontained aquifer in southern Florida.

Table 1. Concentrations and Frequencies of Individual PFAS (and Sum, Σ) across the State of Florida[a]

PFAS	frequency detection	frequency quantified	frequency by county	mean (ng/L)	max (ng/L)	median (ng/L)
PFOA	94%	83%	100%	5	81	3
PFBS	65%	64%	93%	5	48	4
PFHxA	61%	61%	82%	6	180	4
PFNA	54%	39%	96%	2	352	1
PFOS	53%	48%	91%	10	1135	6
PFHpA	53%	44%	87%	5	84	4
PFHxS	50%	17%	94%	17	365	12
PFDA	33%	16%	90%	2	27	2
Syn35	24%	1%	75%	6	24	5
PFHxPA	16%	14%	54%	15	322	10
FBSA	11%	11%	42%	5	85	5
Syn32	9%	6%	21%	1	7	1
PFPrS	5%	3%	51%	5	24	4
PFUdA	4%	4%	42%	3	114	2
PFPeS	3%	0%	36%	29	58	20
4_2FTS	3%	0%	25%	1	1	1
PFDoA	3%	2%	25%	1	4	1
PFECHS	3%	0%	31%	2	5	2
FHxSA	2%	2%	27%	19	320	10
Oak6	2%	0%	22%	1	3	1
Syn34	2%	NA	24%	NA	NA	NA
P4MOA	2%	0%	13%	4	12	2
ΣPFAS	**NA**	**NA**	**NA**	**29**	**3048**	**13**

[a]Data for all sampling sites (n = 2323) sorted by detection frequency. Excluding those PFAS with less than 30 detection hits (<2% of samples). The complete list of PFAS summary data can be found in Supporting Information Table S9. Peaks determined to be < LOD or < LOQ were not utilized in calculating the mean or median concentrations. However, peaks LOD < x < LOQ were used in calculating detection frequency. Internal laboratory abbreviations defined as perfluoro-3,7-dimethyloctanoic acid (Syn35), 7H-perfluoro-4-methyl-3,6-dioxaoctanesulfonic acid (Syn32), 7H-dodecafluoroheptanoic acid (Oak6), and perfluorobutanesulfinic acid (Syn34).

Table 2. Top Counties for Hits above the Maximum Contaminant Levels for PFOA and PFOS (4 ng/L for Both)[a,b]

PFOA

county	no. samples> 4 ng/L PFOA
Pinellas (*n* = 120)	84 (70%)
Hillsborough (*n* = 89)	61 (69%)
Brevard (*n* = 88)	56 (64%)
Orange (*n* = 57)	49 (86%)
Alachua (*n* = 80)	48 (60%)
Miami-Dade (*n* = 104)	48 (46%)
Sarasota (*n* = 91)	47 (52%)
Palm Beach (*n* = 113)	43 (38%)
Polk (*n* = 57)	43 (75%)
Broward (*n* = 63)	36 (57%)
Volusia (*n* = 58)	30 (52%)
Lee (*n* = 50)	28 (56%)
Duval (*n* = 59)	27 (46%)
Collier (*n* = 98)	23 (23%)
St. Johns (*n* = 62)	22 (35%)
Martin (*n* = 41)	20 (49%)
Seminole (*n* = 22)	20 (91%)
Osceola (*n* = 26)	17 (65%)
Lake (*n* = 42)	16 (38%)
Clay (*n* = 18)	15 (83%)
Pasco (*n* = 32)	15 (47%)
Escambia (*n* = 52)	14 (27%)
Highlands (*n* = 25)	13 (52%)
Manatee (*n* = 43)	13 (30%)
Nassau (*n* = 42)	13 (31%)
Charlotte (*n* = 49)	12 (24%)
Okaloosa (*n* = 49)	10 (20%)

PFOS

county	no. samples > 4 ng/L PFOS
Pinellas (*n* = 120)	100 (83%)
Miami-Dade (*n* = 104)	71 (68%)
Sarasota (*n* = 91)	64 (70%)
Brevard (*n* = 88)	61 (69%)
Hillsborough (*n* = 89)	62 (70%)
Alachua (*n* = 80)	49 (61%)
Monroe (*n* = 95)	49 (52%)
Orange (*n* = 57)	37 (65%)
Okaloosa (*n* = 49)	38 (78%)
Palm Beach (*n* = 113)	36 (32%)
Duval (*n* = 59)	31 (53%)
St. Johns (*n* = 62)	30 (48%)
Lee (*n* = 50)	26 (52%)
Volusia (*n* = 58)	23 (40%)
Broward (*n* = 63)	18 (29%)
Manatee (*n* = 43)	18 (42%)
Polk (*n* = 57)	18 (32%)
Highlands (*n* = 25)	17 (68%)
Martin (*n* = 41)	16 (39%)
Osceola (*n* = 26)	16 (62%)
Clay (*n* = 18)	14 (78%)
Nassau (*n* = 42)	12 (29%)
Collier (*n* = 98)	10 (10%)
Lake (*n* = 42)	10 (24%)

Table 3. PFAS Concentration (ng/L) by Florida County[a]

Florida county	no of samples	max ΣPFAS (ng/L)	mean ΣPFAS (ng/L)	standard deviation ΣPFAS (ng/L)	median ΣPFAS (ng/L)	no. unique PFAS[b]
Alachua	80	411	56	74	49	19
Baker	10	NA	NA	NA	NA	4
Bay	41	279	16	49	4	15
Bradford	4	32	20	10	20	8
Brevard	88	239	50	41	51	17
Broward	63	3048	71	385	16	19
Calhoun	6	15	6	6	2	9
Charlotte	49	152	15	23	9	12
Citrus	35	15	15	15	15	4
Clay	18	141	46	43	29	14
Collier	98	88	14	18	6	15
Columbia	14	170	26	45	13	16
DeSoto	8	29	22	7	22	9
Dixie	14	5	3	3	3	4
Duval	59	867	62	135	26	16
Escambia	52	118	12	21	4	11
Flagler	26	17	9	8	6	10
Franklin	25	10	4	3	4	11
Gadsden	6	18	10	6	9	14
Gilchrist	6	3	1	1	1	7
Glades	42	19	11	3	11	12
Gulf	28	79	10	17	4	10
Hamilton	6	10	3	3	1	8
Hardee	1	31	31	31	31	6
Hendry	12	25	12	6	12	8
Hernando	10	23	7	7	5	9
Highlands	25	60	23	15	17	16
Hillsborough	89	354	42	53	28	22
Holmes	4	1	1	0	1	2
Indian River	28	12	7	3	7	8
Jackson	11	21	5	8	1	9
Jefferson	7	3	1	1	1	4
Lafayette	7	1	1	0	1	4
Lake	42	49	17	9	15	17
Lee	50	141	32	29	22	21
Leon	21	42	10	11	5	14
Levy	16	NA	NA	NA	NA	4
Liberty	3	19	11	8	11	9
Madison	5	9	5	5	5	9
Manatee	43	101	21	24	10	12
Marion	29	40	12	11	11	14
Martin	41	25	8	6	5	8
Miami-Dade	104	86	24	21	18	17
Monroe	95	226	15	29	8	23
Nassau	42	90	16	22	4	15
Okaloosa	49	185	31	42	12	18
Okeechobee	12	21	12	4	14	6
Orange	57	133	36	26	26	20
Osceola	26	524	55	99	39	20
Palm Beach	113	465	27	52	13	20
Pasco	32	76	15	17	8	12
Pinellas	120	500	56	60	41	25
Polk	57	97	34	25	32	15
Putnam	17	25	7	6	6	8
Santa Rosa	36	279	24	63	6	20
Sarasota	91	115	29	28	20	20
Seminole	22	121	39	26	37	12
St. Johns	62	311	22	45	12	19
St. Lucie	21	47	19	14	16	13
Sumter	11	57	23	17	22	9
Suwannee	9	4	2	1	2	6
Taylor	8	6	3	3	1	4
Union	9	22	9	8	4	9
Volusia	58	98	19	23	10	15
Wakulla	24	18	6	5	3	12
Walton	18	29	6	9	4	12
Washington	8	2	1	0	1	4

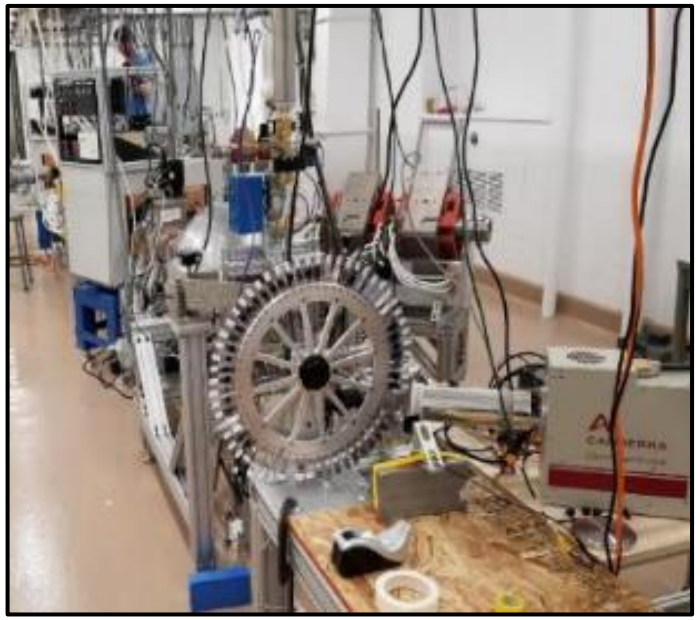
What Can We Do?

Test the water. Find out for ourselves what we are drinking.

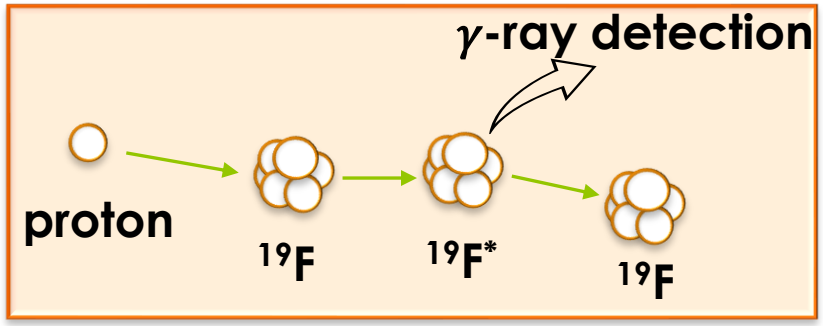
Our approach: novel screening method & local volunteers

PIGE Analysis of Fluorine

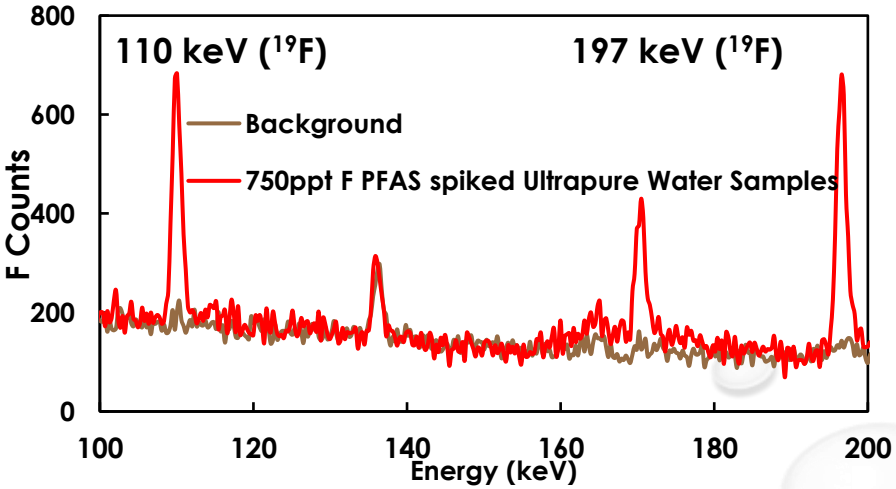
Ion source & Accelerator



Target wheel & HPGe detector



Particle – Induced Gamma-ray Emission

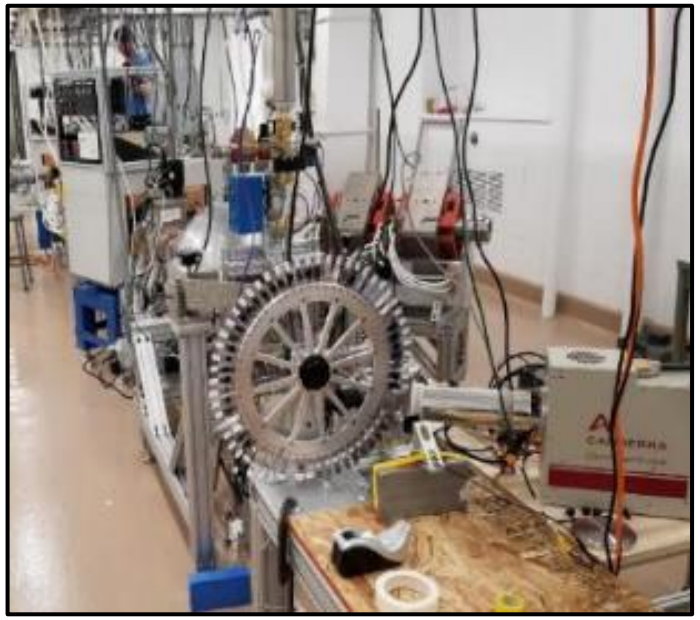


St. Andre Facility at Notre Dame

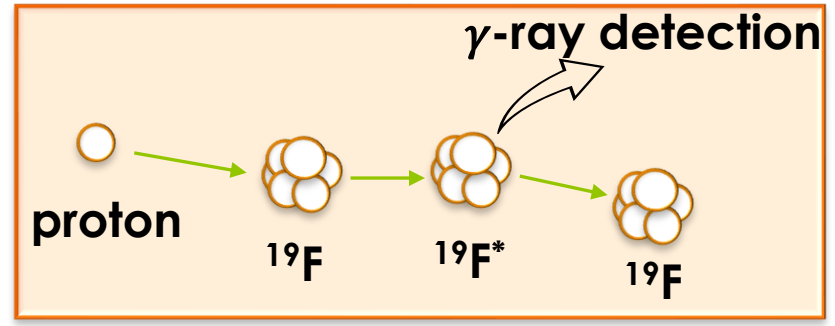
What can we do with a rapid screening method?

PIGE Analysis of Fluorine

Ion source & Accelerator



Target wheel & HPGe detector



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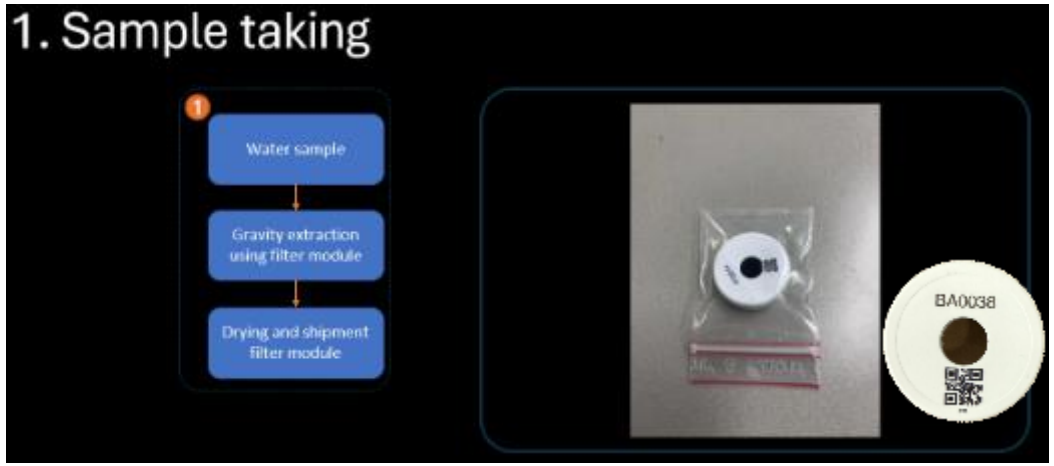
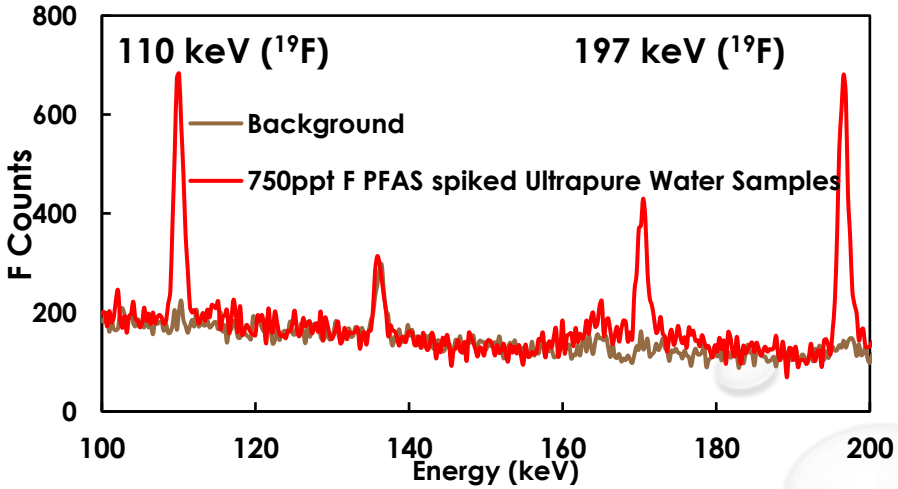


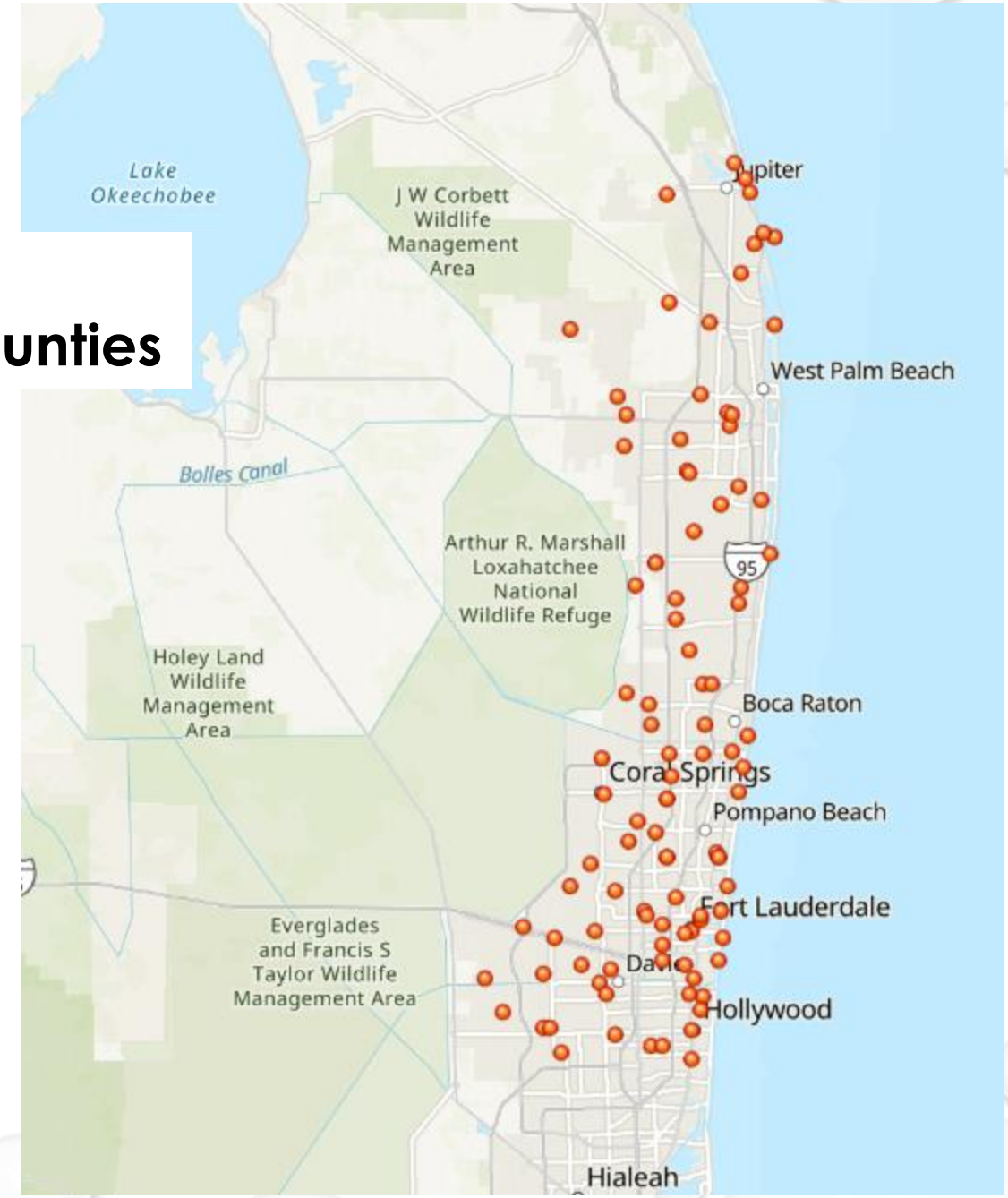


If there is no Fluorine…there are no PFAS!

100 locations chosen by volunteers
Split between Broward & Palm Beach Counties

All public access:

Libraries, Parks…



EPA Testing of PFAS: Water Utilities: UCMR-5

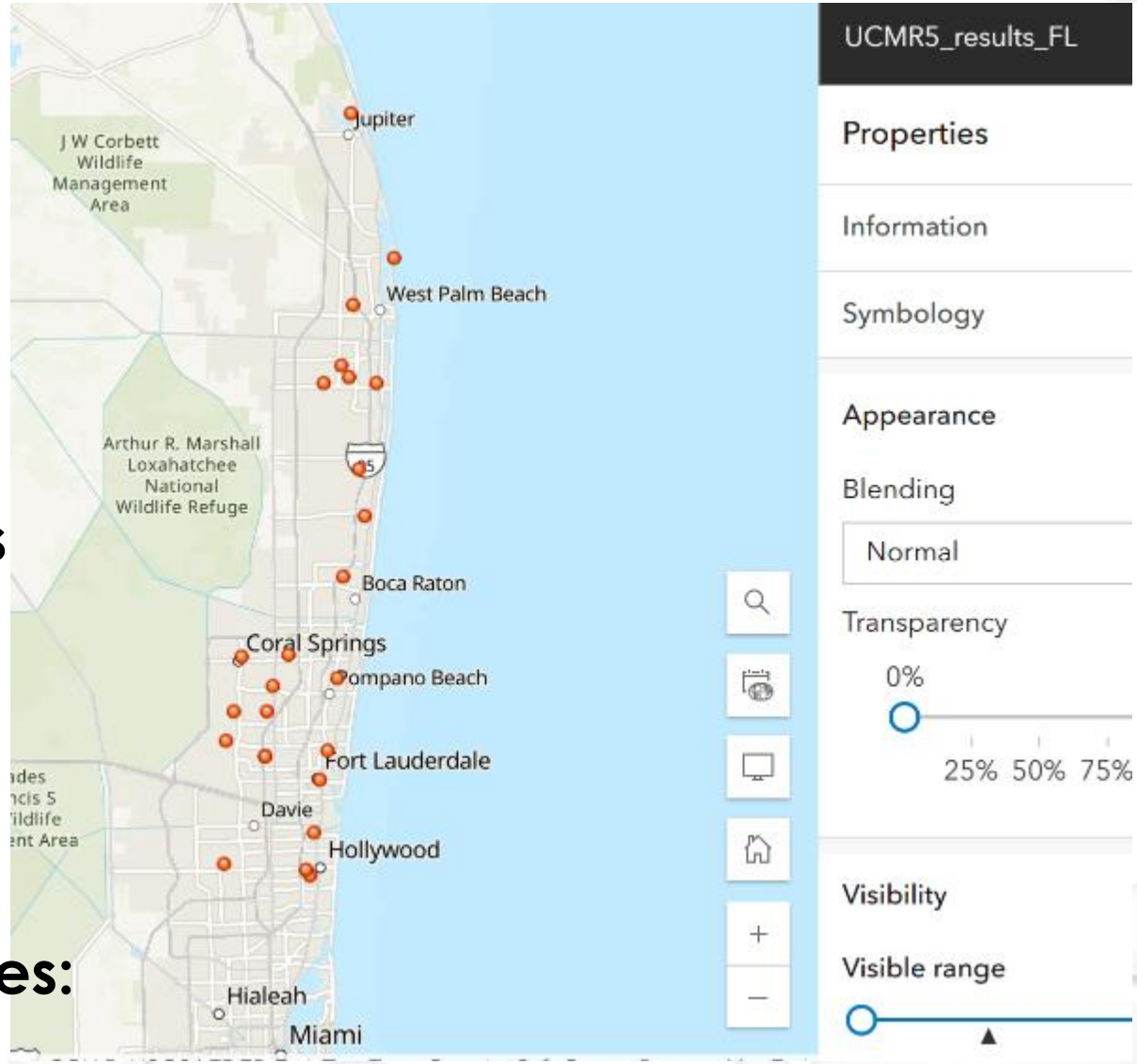
41110 PFAS reported online in Florida (2023-2024)

1900 PFAS results >MDL

$2.25M analysis costs – borne by utilities

$0.10M analysis costs for >MDL !!!

Subset in Broward & Palm Beach Counties:



CEI Results

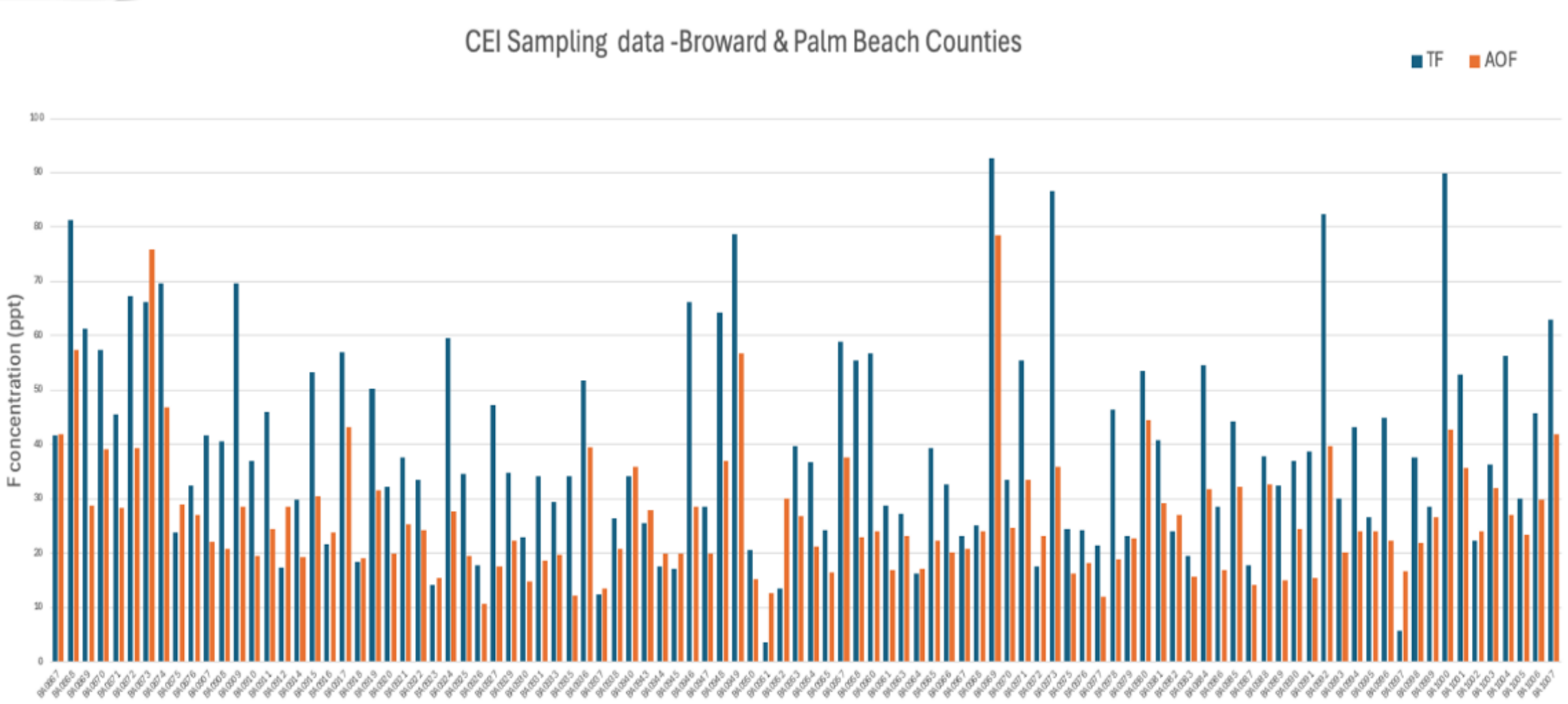


Table 1: CEI Sampling Data: Graphical representation of the samples collected across Broward and Palm Beach Counties with their corresponding TF (blue) and AOF (orange) values.

Lots of data collected and analyzed quickly -

CEI Results

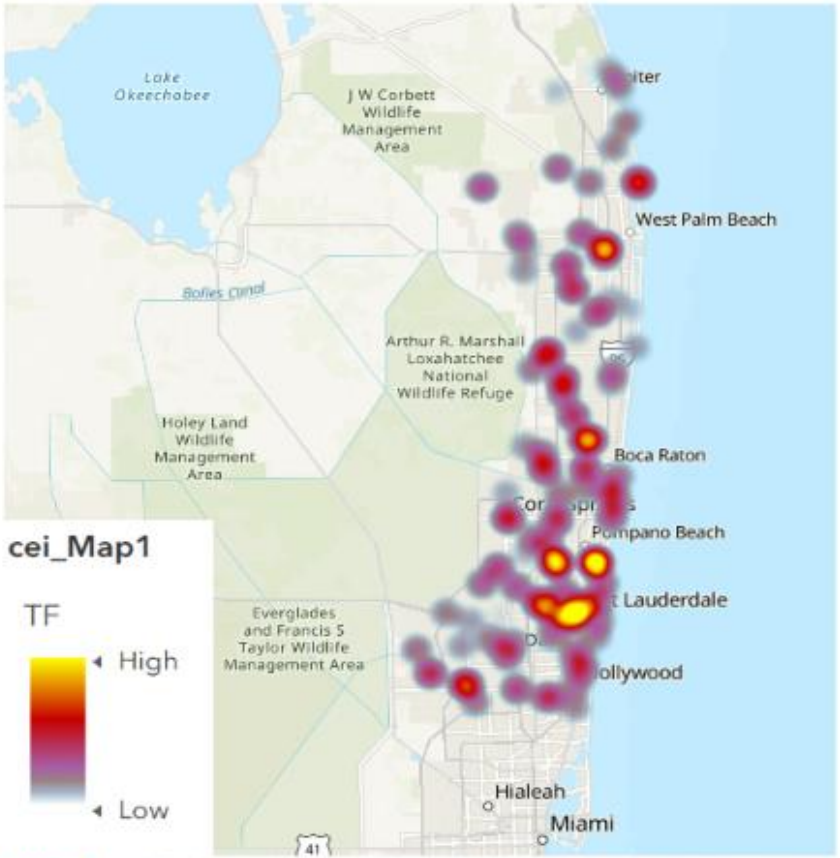


Image 1: Total fluorine levels heat map of sample locations in Palm Beach and Broward Counties

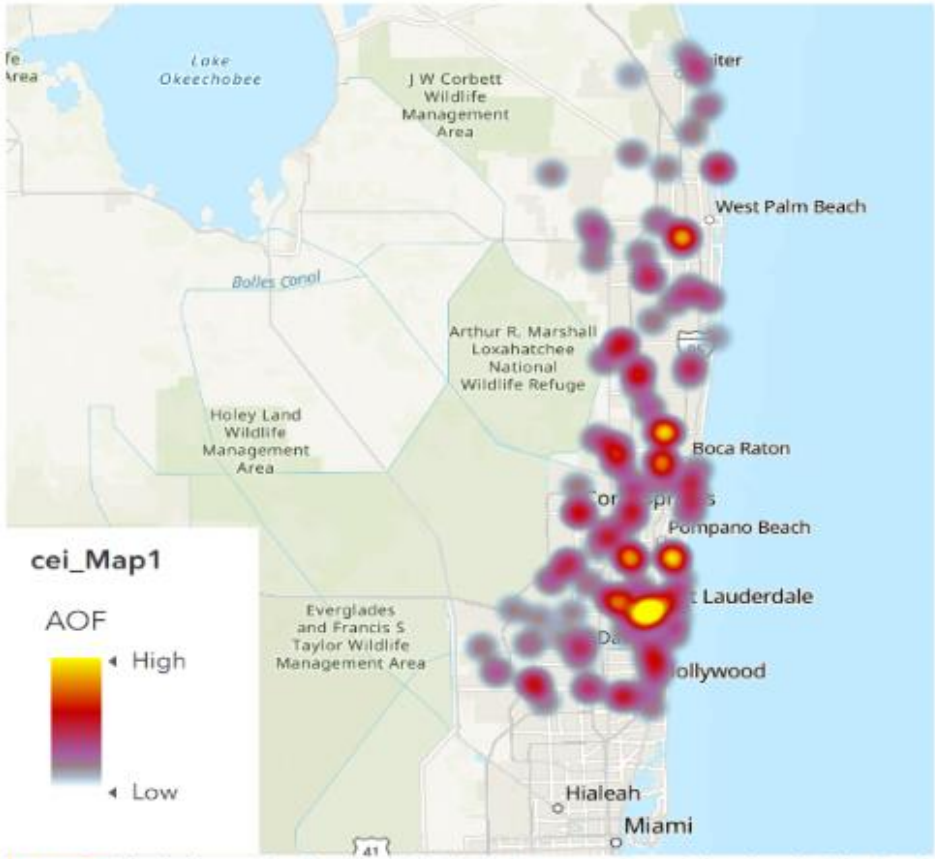
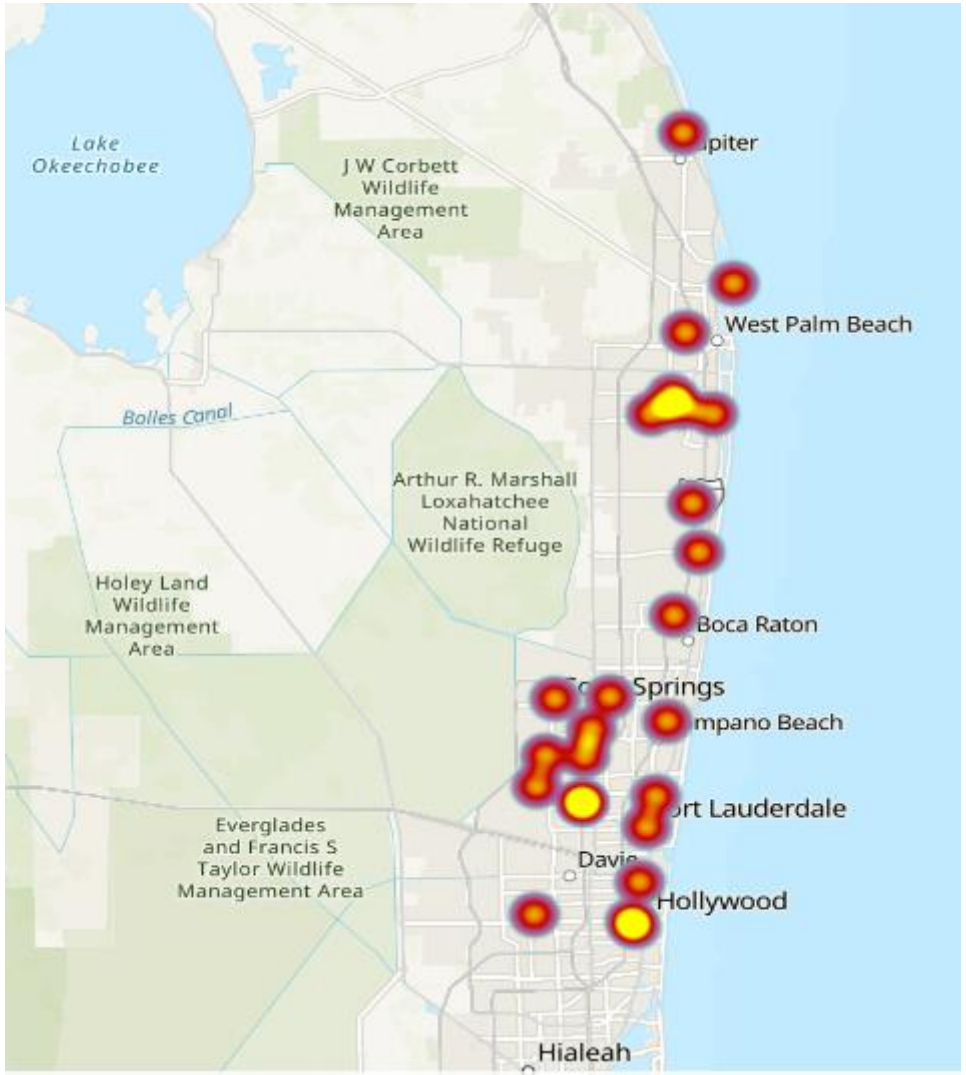


Image 2: Adsorbable organic fluorine (AOF) levels heat map of sample locations in Palm Beach and Broward Counties

EPA Test Results - UCMR5 2023-2024



Preliminary Conclusions

Low cost and rapid screening test for PFAS aligns well with Published water data.

Need to measure volume of sample more accurately

Most of Broward, Palm Beach County relatively low compared with known hotspots, e.g. Pensacola, Tallahassee, Space Coast, Miami-Dade, Tampa/St Pete

What Can I Do?

What can we do when facing a *global* persistent pollutant?

It can be measured everywhere (even rainwater, Mt. Everest)

There are more than 1600 products that use PFAS (from patent search) and ~6 companies worldwide make all the PFAS.

What Can I Do?

What can we do when facing a *global* persistent pollutant?

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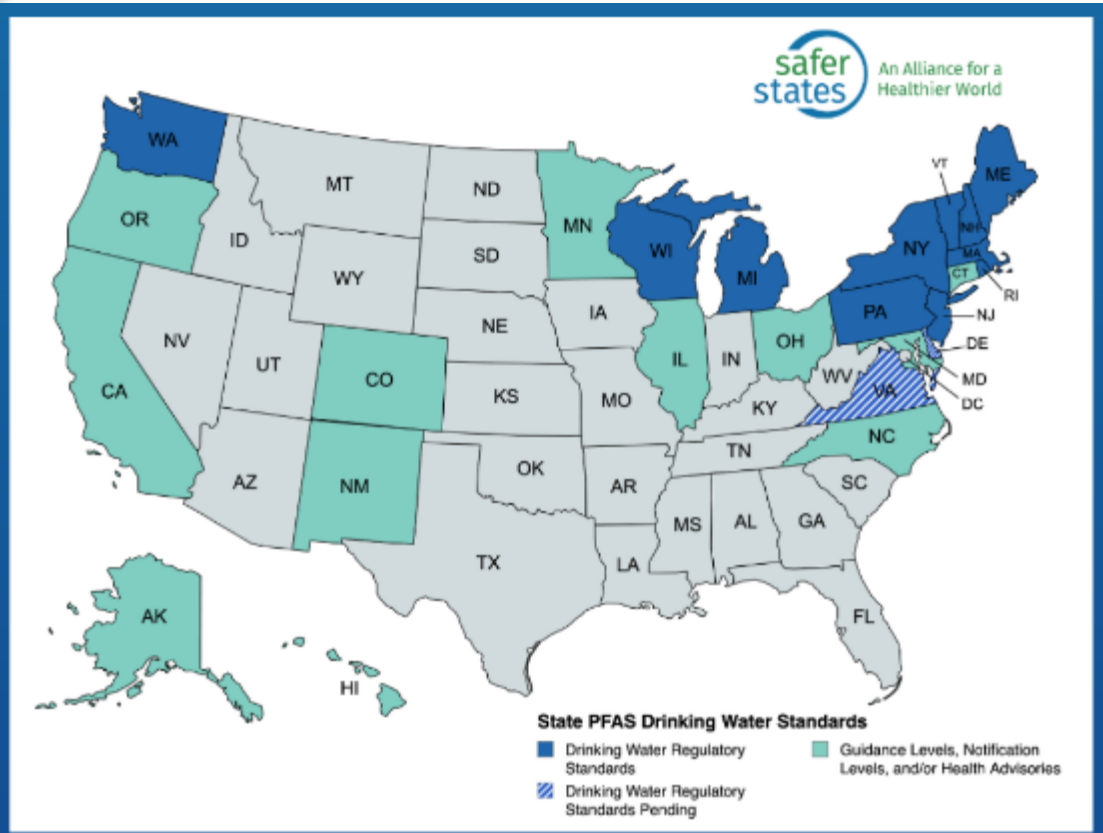
There are more than 1600 products that use PFAS (from patent search) and ~6 companies worldwide make all the PFAS.

My approach: *Learn, educate, regulate where possible, but know that market forces from educated consumers can also drive future use…*

What are other States Doing?

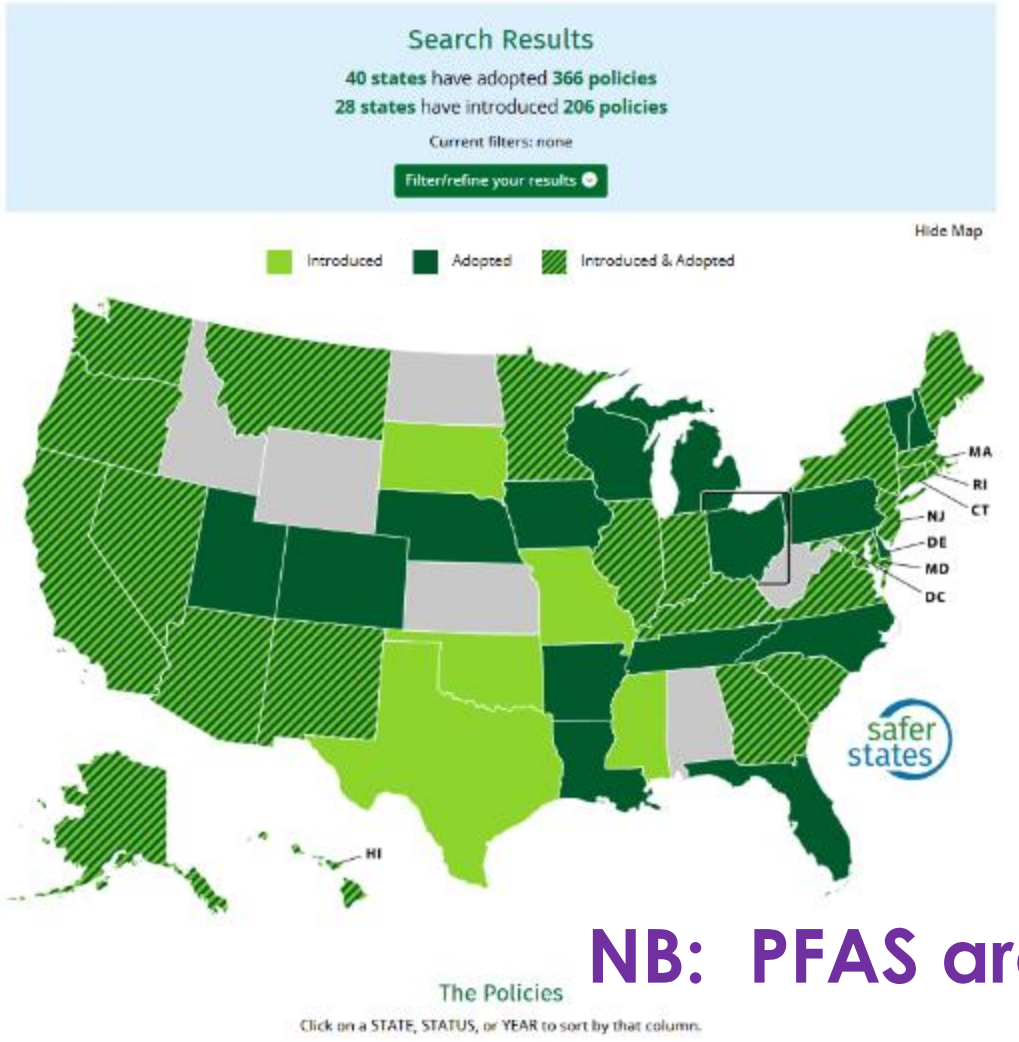


State Drinking Water Limits

Eleven states (ME, MA, MI, NH, NJ, NY, PA, RI, VT, WA, and WI) have standards such as Maximum Contaminant Levels (MCLs) for certain PFAS in drinking water. Maine has an interim standard that is in effect and enforceable while they go through rule-making to establish final PFAS MCLs. Delaware and Virginia have also begun the process of establishing standards for certain PFAS. Twelve additional states (AK, CA, CT, CO, HI, IL, MD, MN, NC, NM, OH and OR) have adopted guidance, health advisory, or notification levels for certain PFAS chemicals.

https://www.saferstates.org/priorities/pfas/

What are other States Doing?

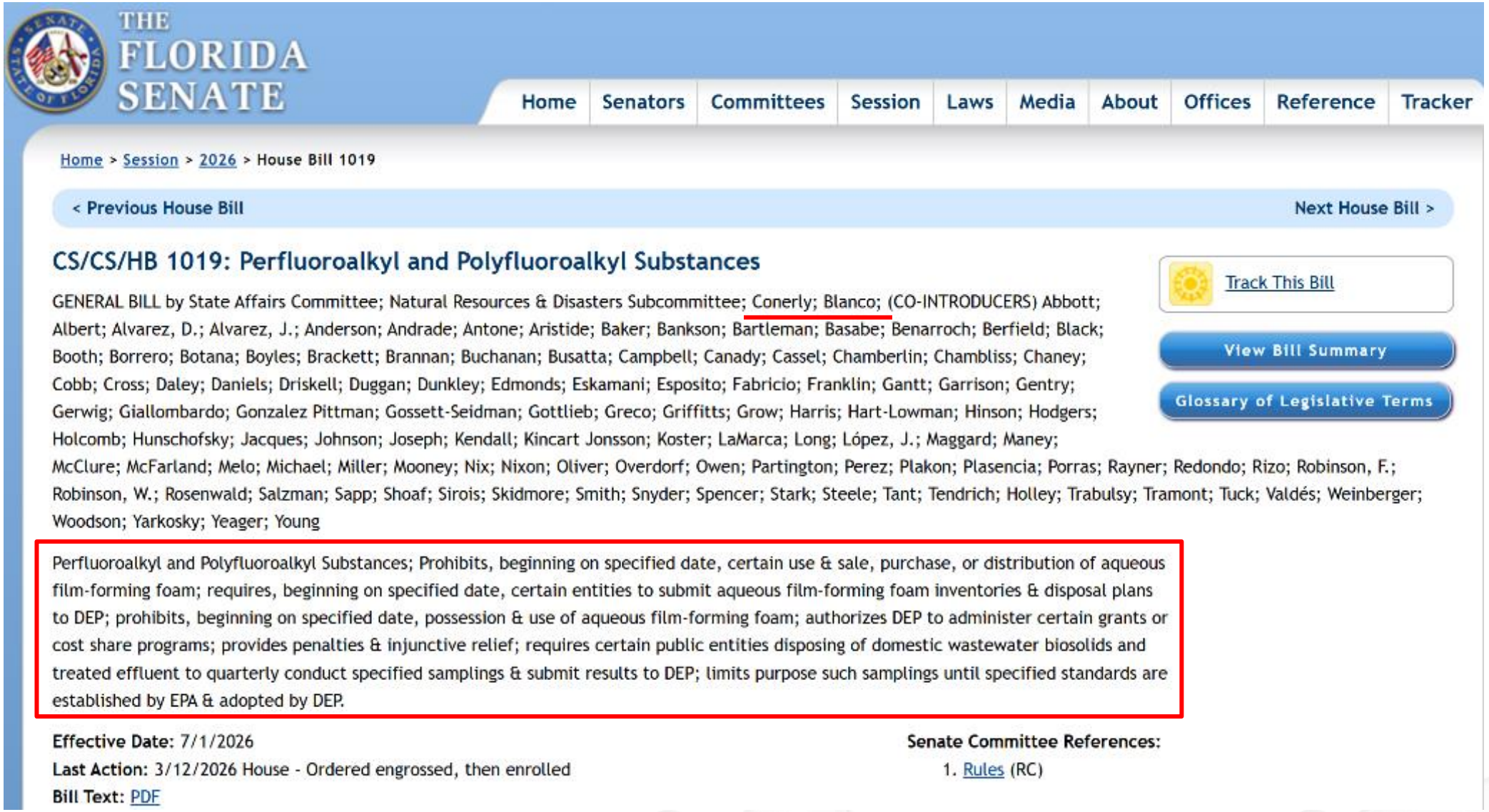


Indiana	✓	2023	H.B.1219 Establishes a PFAS biomonitoring pilot program under the department of homeland security to collect and analyze blood samples of individuals who were previously, or are currently, firefighters.	PFAS	Other	Accountability
Indiana	📢	2025	H.B.1286 Establishes a registry for entities that discharge PFAS chemicals.	PFAS	Water	Transparency
Indiana	✓	2023	H.B.1341 Beginning June 30, 2024, prohibits fire departments from purchasing firefighter gear unless it contains a label indicating whether or not the firefighter gear contains a PFAS chemical.	PFAS	Textiles	Transparency
Indiana	📢	2025	H.B.1366 Requires the State Department to establish state-specific maximum contaminant levels for PFAS in public water systems.	PFAS	Water	Phasing Out the Bad
Indiana	📢	2025	H.B.1553 Establishes regulations for the use of biosolids, requires testing and setting limits for their use in land applications.	PFAS	Biosolids/Sludge	Setting The Stage
Indiana	✓	2020	HB 1189 Prohibits the use of PFAS-containing firefighting foam for training purposes or testing purposes.	PFAS	Firefighting Foam	Phasing Out the Bad

NB: PFAS are neither a red nor blue problem…

https://www.saferstates.org/bill-tracker/?

What Is Florida Doing?



THE FLORIDA SENATE

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Home > Session > 2026 > House Bill 1019

< Previous House Bill | Next House Bill >

CS/CS/HB 1019: Perfluoroalkyl and Polyfluoroalkyl Substances

Track This Bill

View Bill Summary

Glossary of Legislative Terms

GENERAL BILL by State Affairs Committee; Natural Resources & Disasters Subcommittee; Conerly; Blanco; (CO-INTRODUCERS) Abbott; Albert; Alvarez, D.; Alvarez, J.; Anderson; Andrade; Antone; Aristide; Baker; Bankson; Bartleman; Basabe; Benarroch; Berfield; Black; Booth; Borrero; Botana; Boyles; Brackett; Brannan; Buchanan; Busatta; Campbell; Canady; Cassel; Chamberlin; Chambliss; Chaney; Cobb; Cross; Daley; Daniels; Driskell; Duggan; Dunkley; Edmonds; Eskamani; Esposito; Fabricio; Franklin; Gantt; Garrison; Gentry; Gerwig; Giallombardo; Gonzalez Pittman; Gossett-Seidman; Gottlieb; Greco; Griffitts; Grow; Harris; Hart-Lowman; Hinson; Hodgers; Holcomb; Hunschofsky; Jacques; Johnson; Joseph; Kendall; Kincart Jonsson; Koster; LaMarca; Long; López, J.; Maggard; Maney; McClure; McFarland; Melo; Michael; Miller; Mooney; Nix; Nixon; Oliver; Overdorf; Owen; Partington; Perez; Plakon; Plasencia; Porras; Rayner; Redondo; Rizo; Robinson, F.; Robinson, W.; Rosenwald; Salzman; Sapp; Shoaf; Sirois; Skidmore; Smith; Snyder; Spencer; Stark; Steele; Tant; Tendrich; Holley; Trabulsy; Tramont; Tuck; Valdés; Weinberger; Woodson; Yarkosky; Yeager; Young

Perfluoroalkyl and Polyfluoroalkyl Substances; Prohibits, beginning on specified date, certain use & sale, purchase, or distribution of aqueous film-forming foam; requires, beginning on specified date, certain entities to submit aqueous film-forming foam inventories & disposal plans to DEP; prohibits, beginning on specified date, possession & use of aqueous film-forming foam; authorizes DEP to administer certain grants or cost share programs; provides penalties & injunctive relief; requires certain public entities disposing of domestic wastewater biosolids and treated effluent to quarterly conduct specified samplings & submit results to DEP; limits purpose such samplings until specified standards are established by EPA & adopted by DEP.

Effective Date: 7/1/2026

Last Action: 3/12/2026 House - Ordered engrossed, then enrolled

Bill Text: PDF

Senate Committee References:

1. Rules (RC)

What Is Florida Doing?

THE FLORIDA SENATE

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2/25/2026	House	• Read 2nd time • Added to Third Reading Calendar • Read 3rd time • CS passed; YEAS 113, NAYS 0
2/25/2026	Senate	• In Messages
2/26/2026	Senate	• Referred to Rules • Received
3/4/2026	Senate	• Withdrawn from Rules -SJ 514 • Placed on Calendar, on 2nd reading • Substituted for CS/CS/SB 1230 -SJ 514 • Read 2nd time -SJ 514 • Amendment(s) adopted (719556) -SJ 514 • Read 3rd time -SJ 514 • CS passed as amended; YEAS 37 NAYS 0 -SJ 514
3/4/2026	House	• In Messages
3/12/2026	House	• Added to Senate Message List • Amendment 719556 Concur • CS passed as amended; YEAS 107, NAYS 0 • Ordered engrossed, then enrolled

Where can I learn more?

There are some good sites on the internet:

History of PFAS in the US: ITRC website (google)

https://pfas-1.itrcweb.org/wp-content/uploads/2020/10/history_and_use_508_2020Aug_Final.pdf

Open-Source review articles (google scholar)

e.g. Trends in the Regulation of Per- and Polyfluoroalkyl Substances (PFAS): A Scoping Review

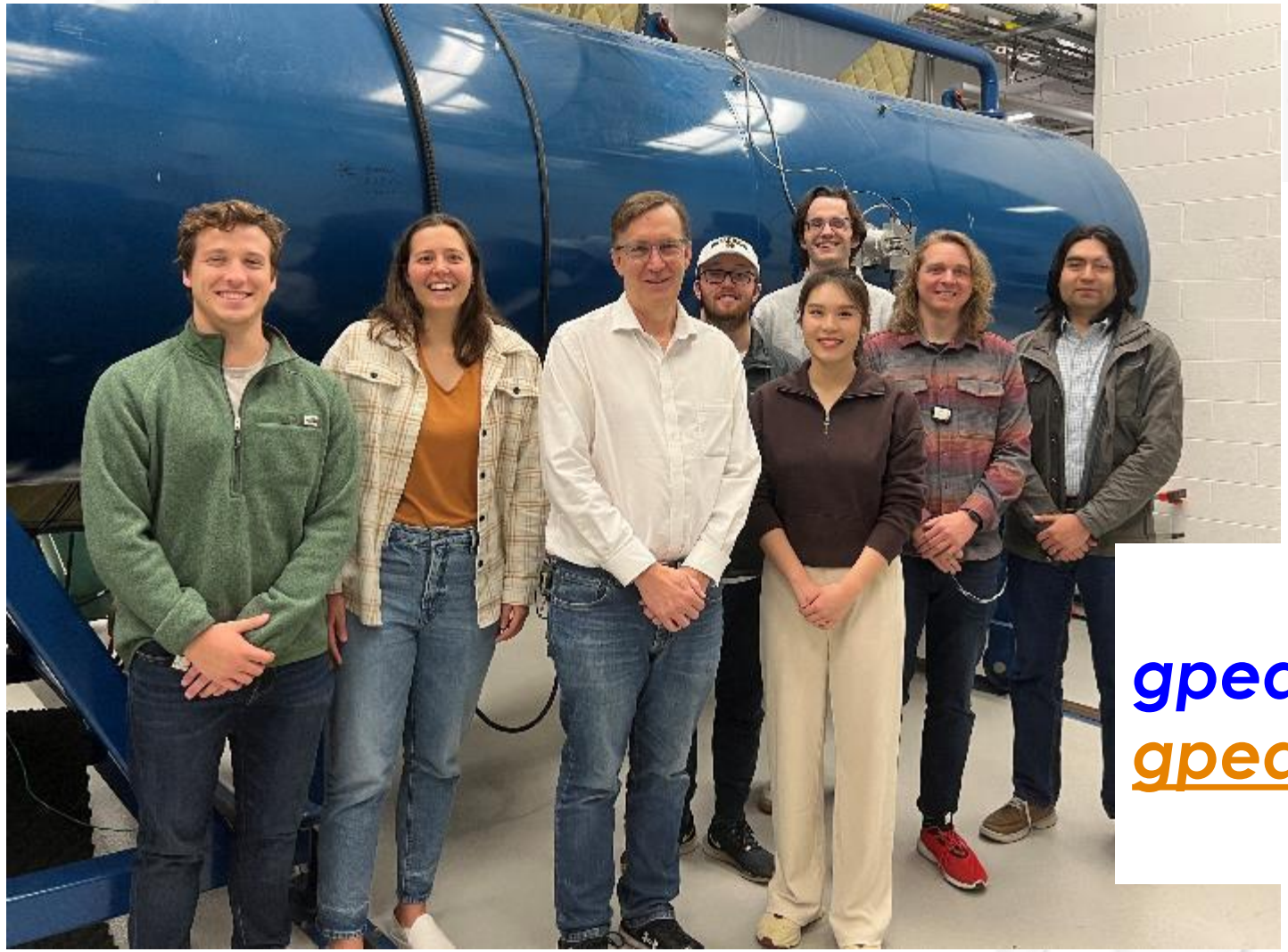
https://www.mdpi.com/1660-4601/18/20/10900

Other States with large PFAS problems (MI, NC, NJ, CA)

e.g. Michigan PFAS Action Response Team (MPART)

https://www.michigan.gov/pfasresponse
https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/pfas.html

Acknowledgements:



Questions:

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gpeaslee@foreveranalytical.com

Back up Slides

Wisconsin Example Related to Drinking Water

In Winter 2019 – 2020, Wisconsin Fire Chiefs Assn, responding to Madison AFFF incident, declared an operational cease-and-desist on AFFF use. Together with DNR, conducted a survey of how much AFFF concentrate was in FD's in Wisconsin?

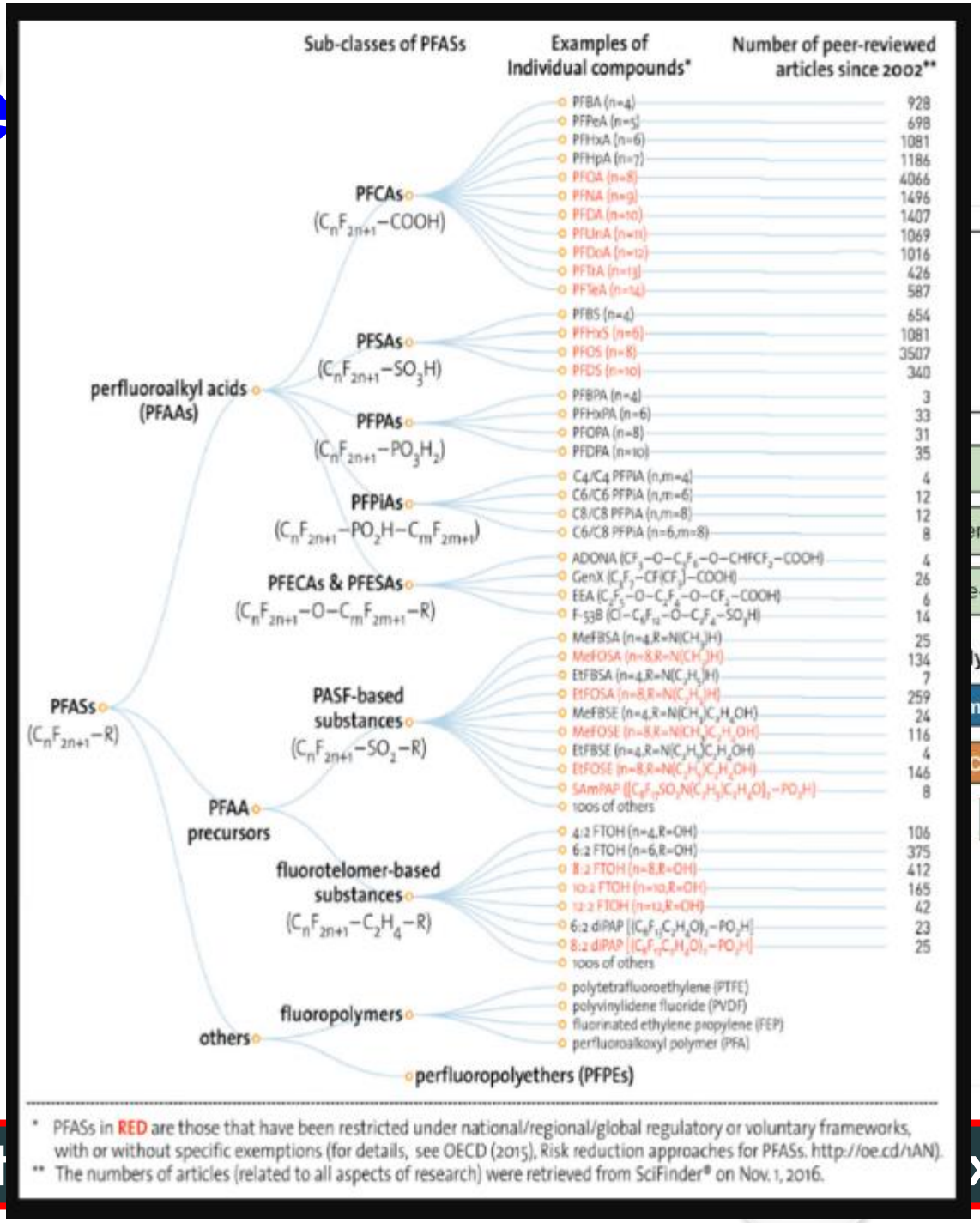
Answer: Over 125,000 gallons, scattered over 750 departments!

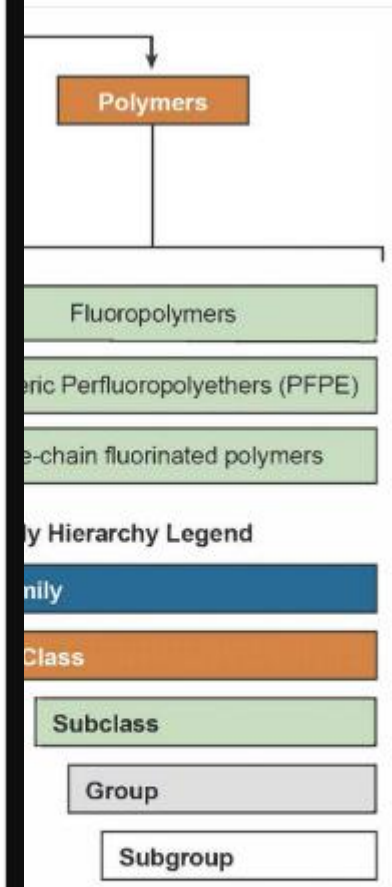
Note: This volume of concentrate (3%) would contaminate the volume of Lake Erie above the drinking water MCL if it were released!!!

2019 Senate Bill 717 – authorized a buy-back and discard campaign across Wisconsin – Pass unanimously – but was only $200,000. About $2M was needed.

Solution: These are forever chemicals…take 10 years…

There PFAS…





All are Persistent … xhibit Toxicity

PFAS Regulations on Drinking water

US EPA – Health Advisory Limits:

2009 – PFOA = 400 ng/L PFOS = 200 ng/L

2016 – PFOA = 70 ng/L PFOS = 70 ng/L

2022 – PFOA = 4 ng/L PFOS = 20 ng/L
– GenX = 10 ng/L PFBS = 2000 ng/L

US EPA – Maximum Contaminant Limits*:

2024 – PFOA = 4 ng/L PFOS = 4 ng/L
– GenX = 10 ng/L PFHxS = 10 ng/L PFBS = 2000 ng/L
– PFNA = 10 ng/L

Or Ultrashort PFAS !!!

Environmental Science & Technology

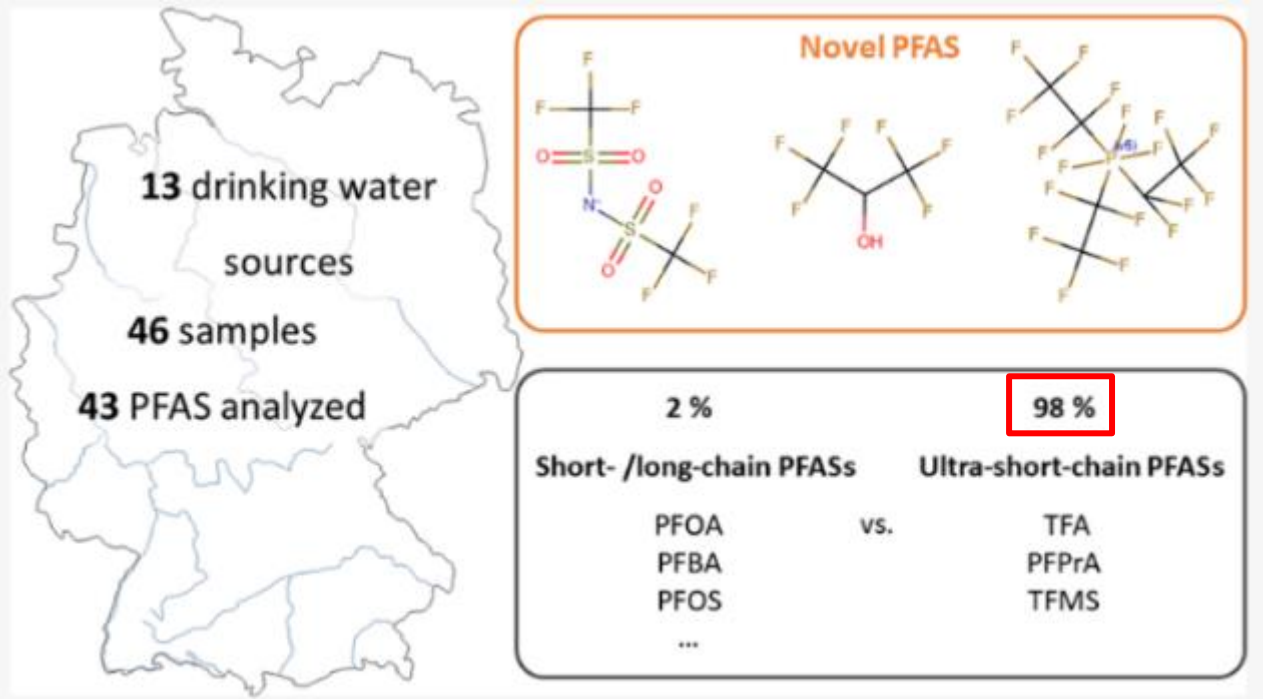
April 2022

pubs.acs.org/est

Article

Ultra-Short-Chain PFASs in the Sources of German Drinking Water: Prevalent, Overlooked, Difficult to Remove, and Unregulated

Isabelle J. Neuwald, Daniel Hübner, Hanna L. Wiegand, Vassil Valkov, Ulrich Borchers, Karsten Nödler, Marco Scheurer, Sarah E. Hale, Hans Peter H. Arp, and Daniel Zahn*



98% of PFAS in drinking water is C2 & C3 PFAS

Not currently measured by LC-MS/MS !!

Take Home Message:

There are a lot of PFAS out there that are not being measured:

- C2, C3 (Ultrashort PFAS)
- “Precursors” / unknown PFAS
- Volatile PFAS
- Polymeric PFAS
- Agrochemical PFAS
- Pharmaceutical PFAS

European Total F limit proposed on Drinking Water in 2026 : 500 ng/L

Total Organic Fluorine measurements can be used to screen for PFAS – but you have to understand what the extra fluorine means…true for all total F techniques!

Commercialization of Process

Design & Build Benchtop Accelerator

Rendering Of The Entire Centurion™
4MeV RFQ LINAC On A Motorized Cart