Tackling PFAS – Is Treating the Water Enough?

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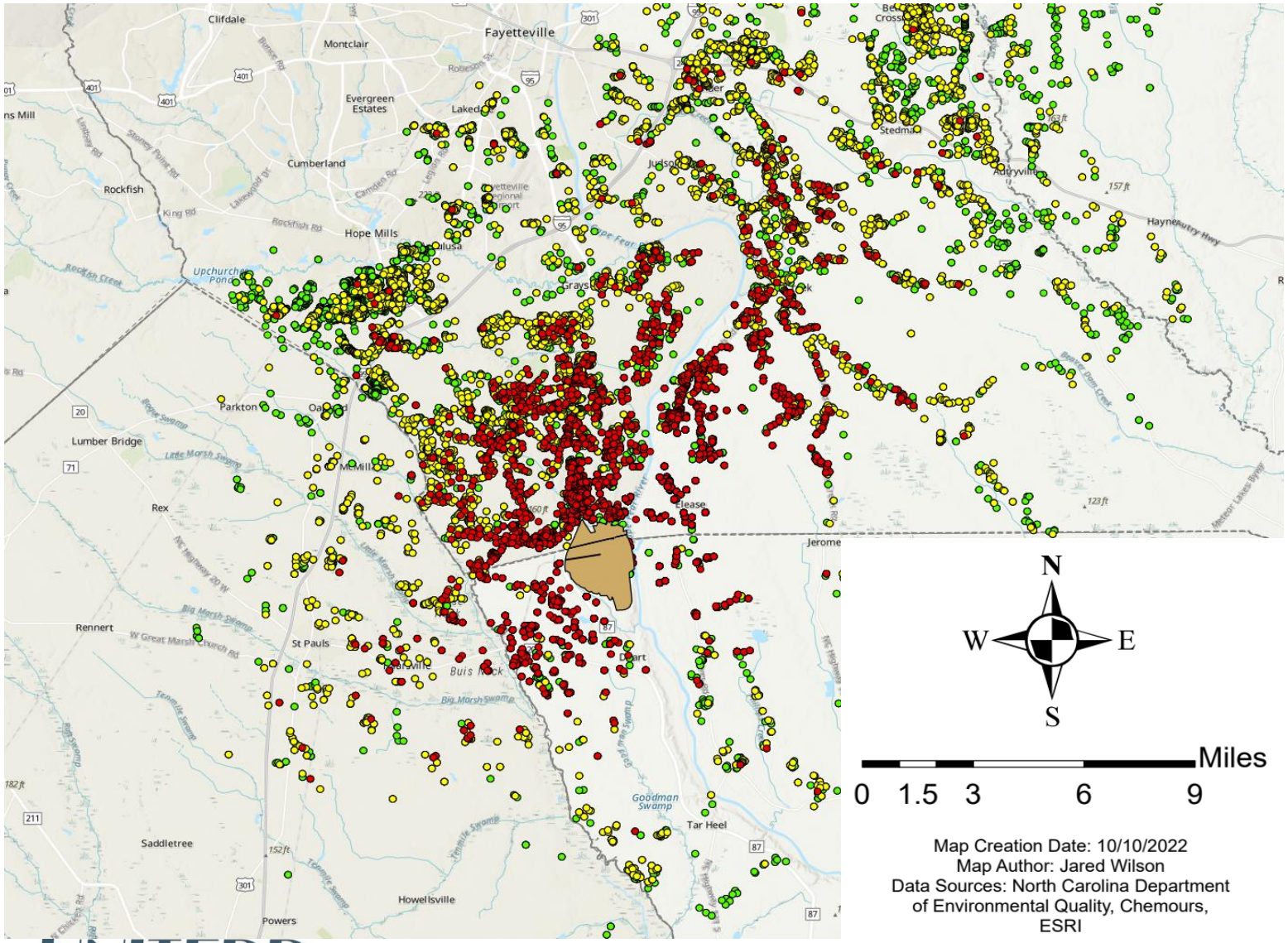
PFAS Residential Well Sampling Results in the Region



- GenX ≥10ppt
- Any PFAS (except GenX) ≥ 10ppt or Total Sum PFAS ≥ 70ppt
- No Detections or No PFAS ≥ 10ppt
- Chemours property boundary

The occurrence of PFEAs and other PFAS in local produce remain unclear

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Sample inventory (n= 54)

Site A (n=21)

2014	2015	2016	2017	2018	2019
Pickled okra	Pickles	Pickled beans	Blueberry		Blueberry
Pickled green beans	Pickled tomato	Okra	Okra		Blueberry unripe
	Squash	Pickled okra	Corn		Grape
	Pickled green beans	Squash	Squash		Peach
		Pickled green beans	Potato		Tomato

Site B (n=23)

2013	2014	2015	2016	2017	2018	2019
Pecan	Tomato	Blueberry	Blackberry	Turnip	Apple	Fig
		Peas		Blackberry	Corn	Apple
					Peach	Apple-unripe
					Pecan	Grape
					Sweat potato	Peach
					Blueberry	Peach-unripe
					Blackberry	Pear
						Blueberry
						Blackberry

2019	
Site C	Blueberry
Site D	Blueberry
	Cucumber
Site E	Blueberry
	Fig
	Cantaloupe
	Okra
	Watermelon
	Tomato
	Cherry tomato

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Site-by-Site comparison

Site A

2014	2015	2016	2017	2018	2019
Pickled okra	Pickles	Pickled beans	Blueberry		**Blueberry**
Pickled green beans	Pickled tomato	Okra	Okra		Blueberry unripe
	Squash	Pickled okra	Corn		Grape
	Pickled green beans	Squash	Squash		Peach
		Pickled green beans	Potato		Tomato

Site B

2013	2014	2015	2016	2017	2018	2019
Pecan		Blueberry		Turnip	Apple	Fig
Tomato		Peas	Blackberry	Blackberry	Corn	Apple
					Peach	Apple-unripe
					Pecan	Grape
					Sweat potato	Peach
					Blueberry	Peach-unripe
					Blackberry	Pear
						Blueberry
						Blackberry

2019	
Site C	**Blueberry**
Site D	**Blueberry**
	Cucumber
Site E	**Blueberry**
	Fig
	Cantaloupe
	Okra
	Watermelon
	Tomato
	Cherry tomato

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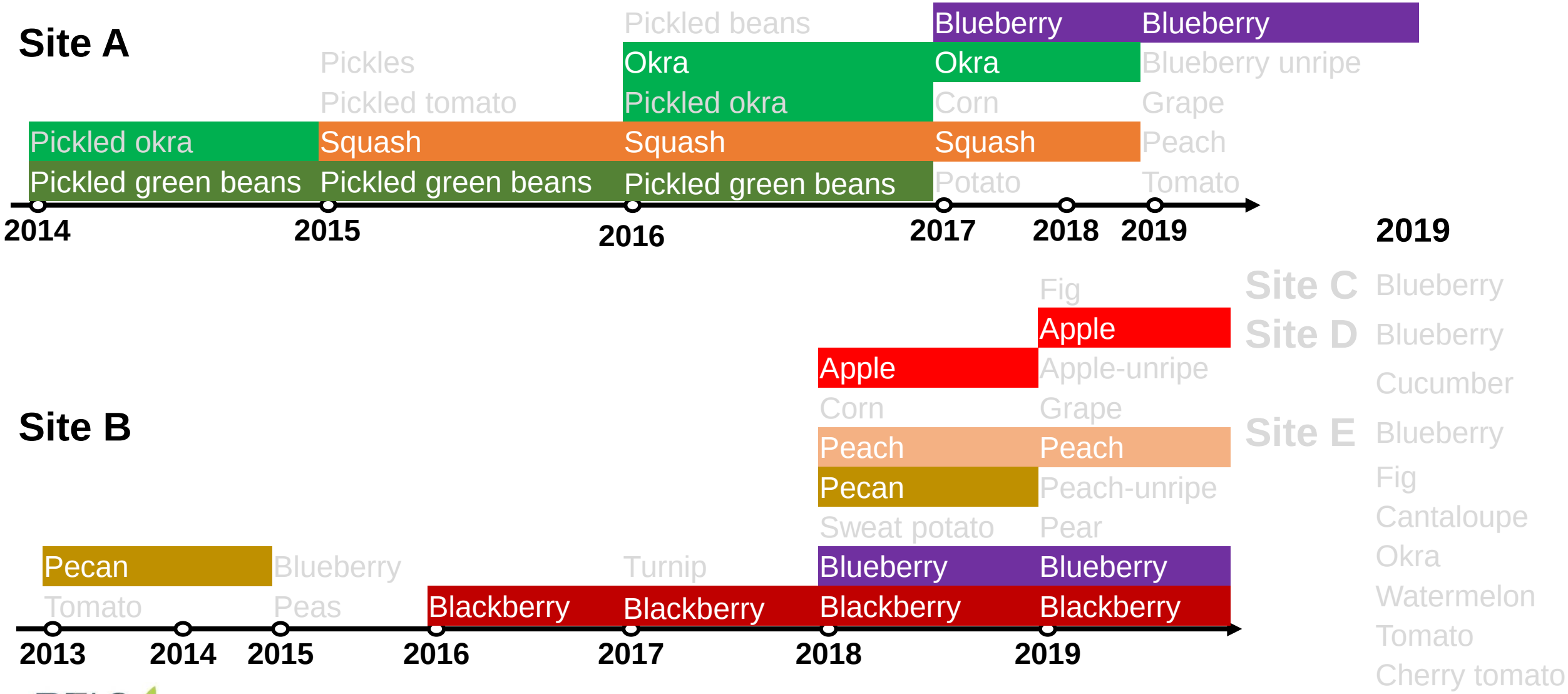
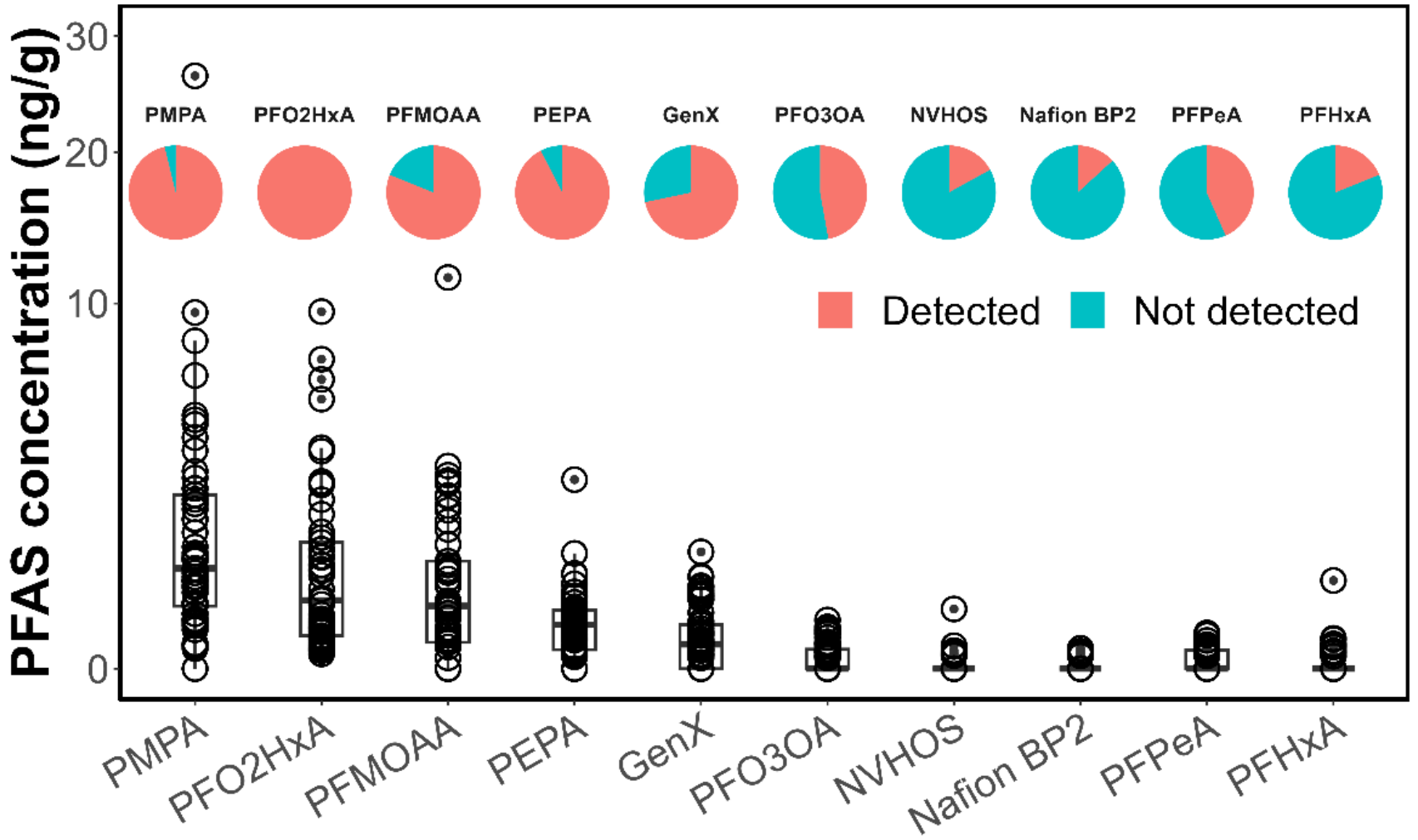
Year-over-Year comparison



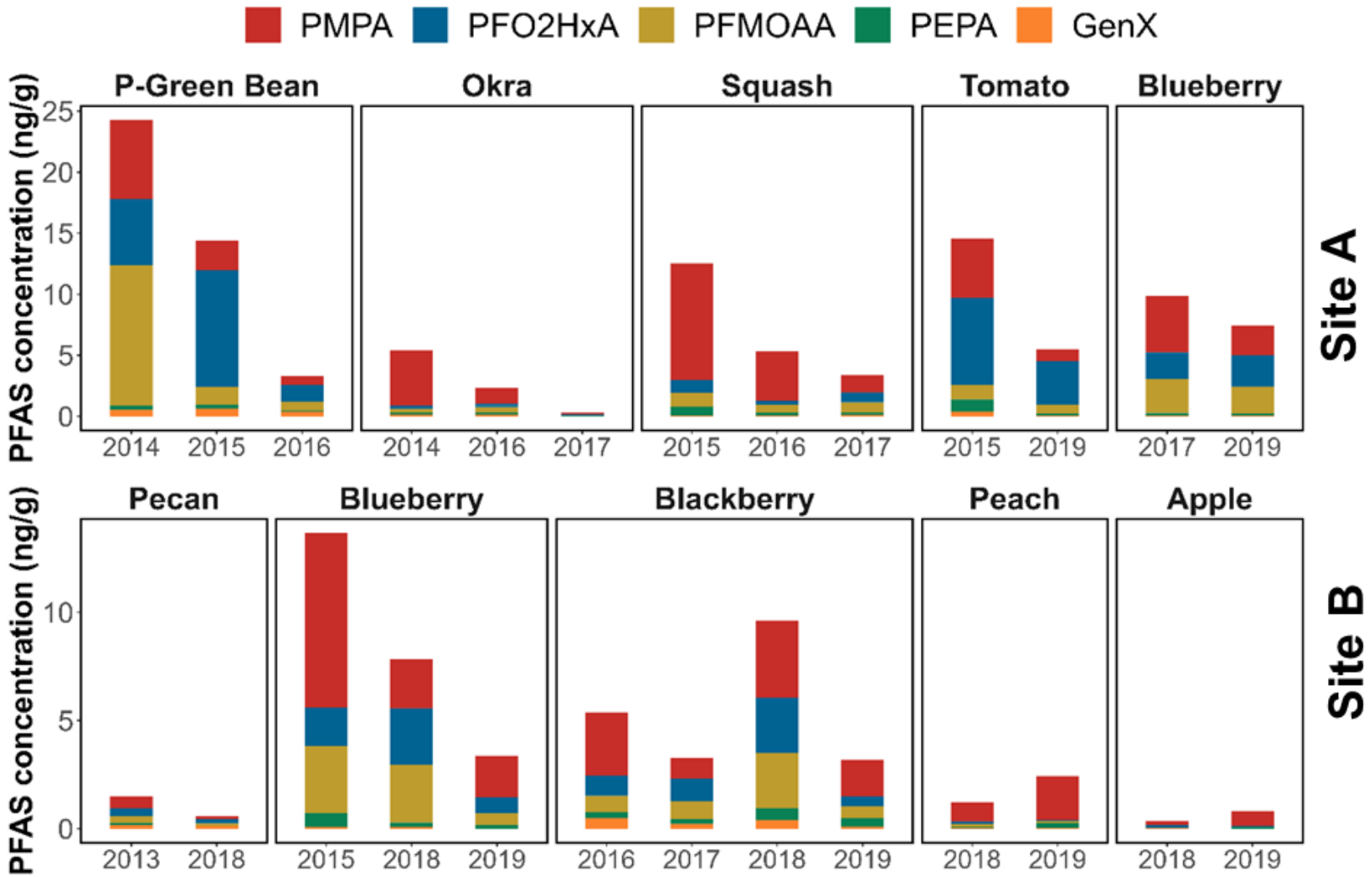
Overview

10 PFAS, including 8 PFEAs, were detected in at least 10% of the produce samples



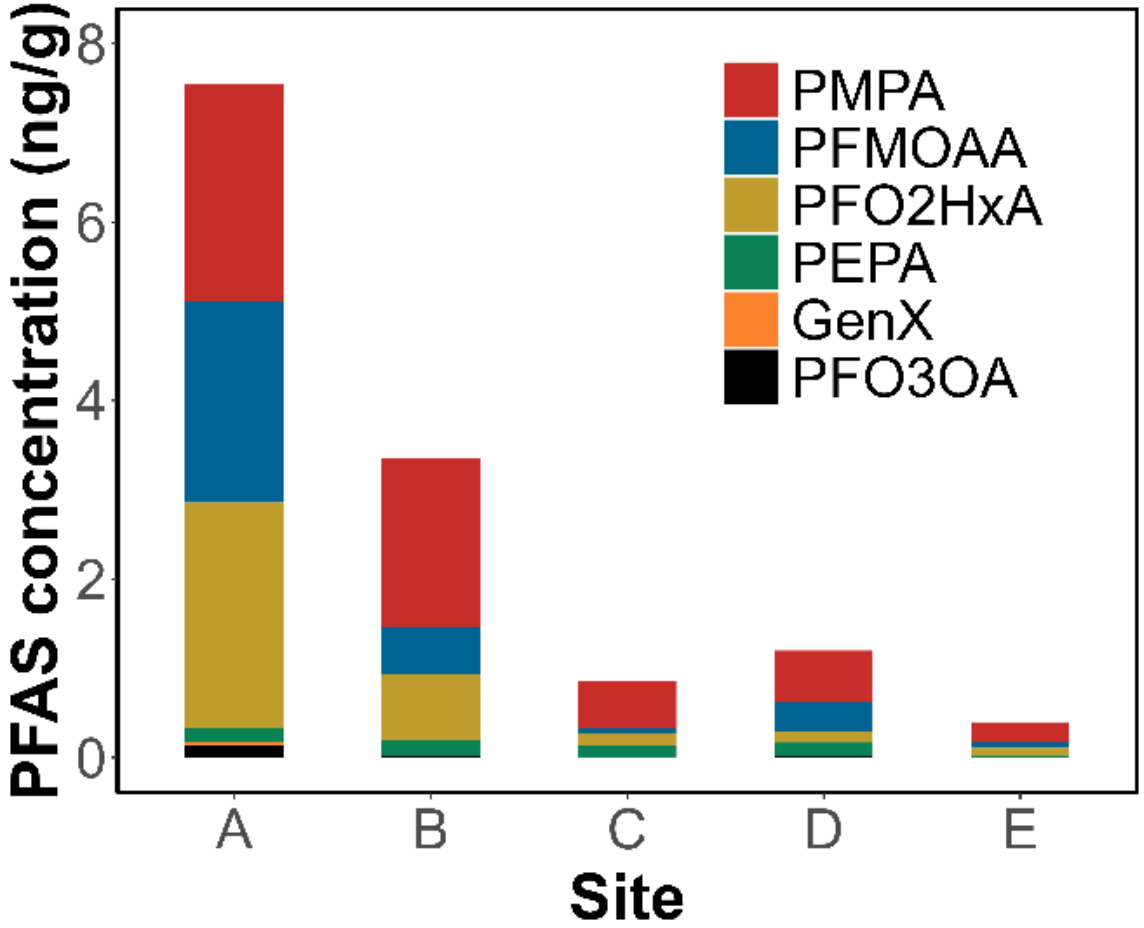
It is unclear whether there is really a decreasing trend of PFAS plant uptake

Temporal trend



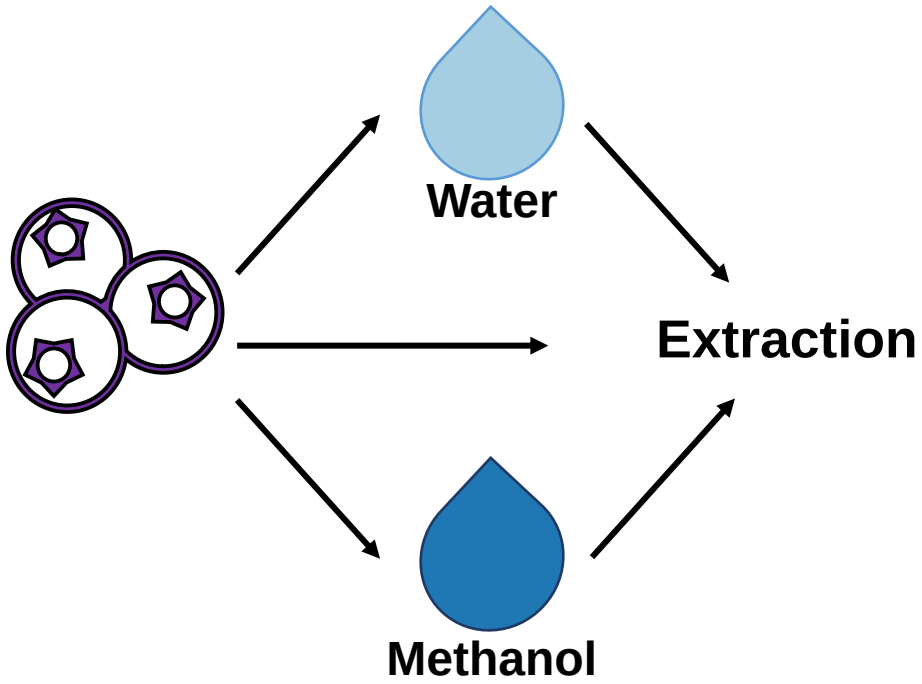
Concentration of PFAS in produce and groundwater may be correlated

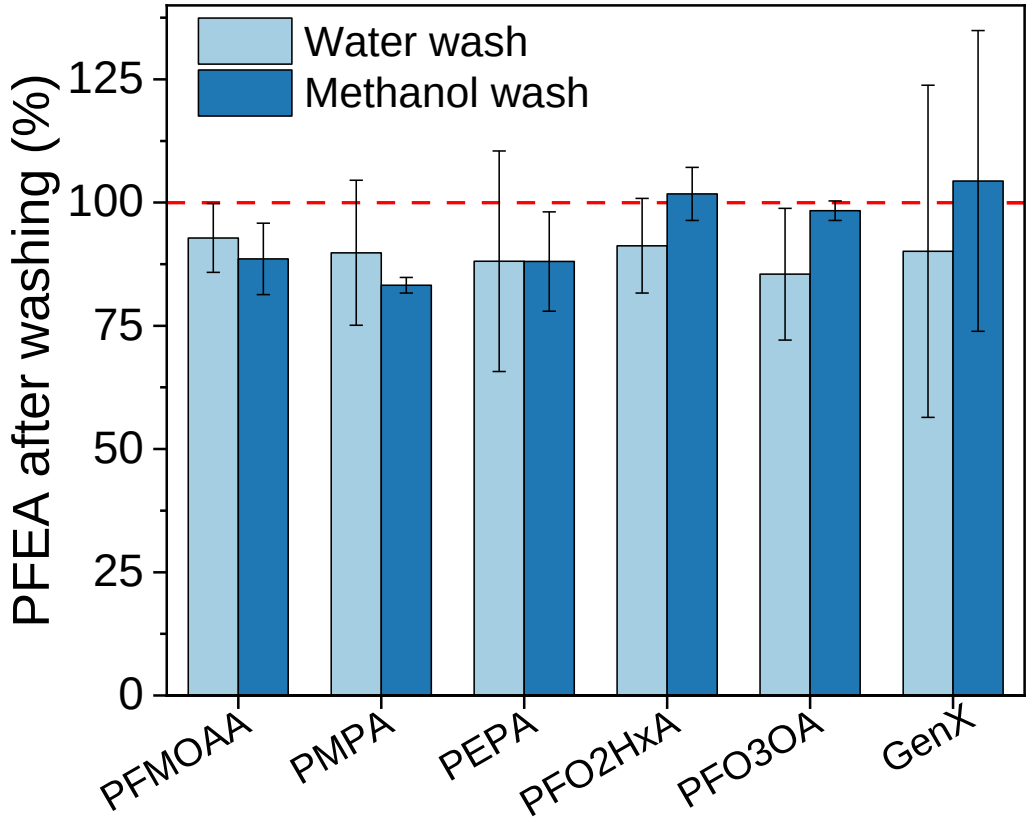
Spatial trend



Site A and Site E had high and low groundwater contamination

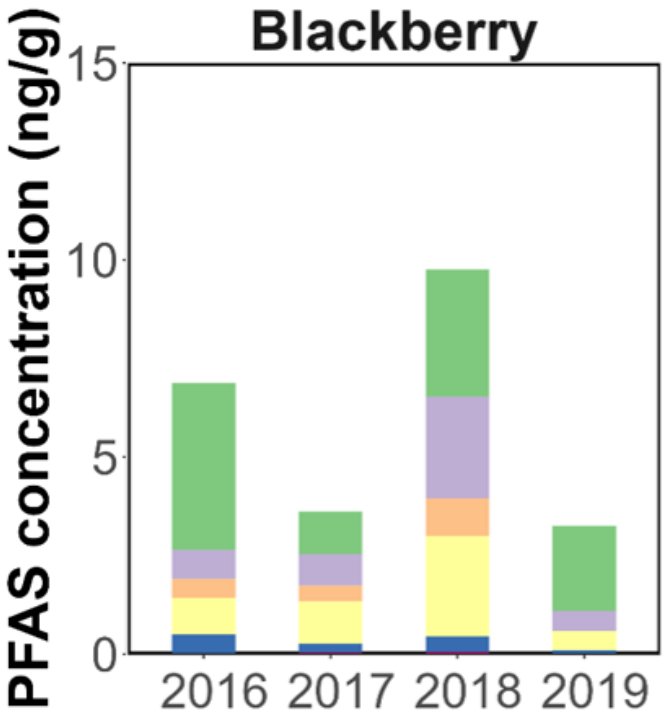
Where are the PFEAs located?





- ❑ The majority (>90%) of PFEAs detected were inside of the blueberries
- ❑ Washing blueberries would not be effective for reducing human exposure

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

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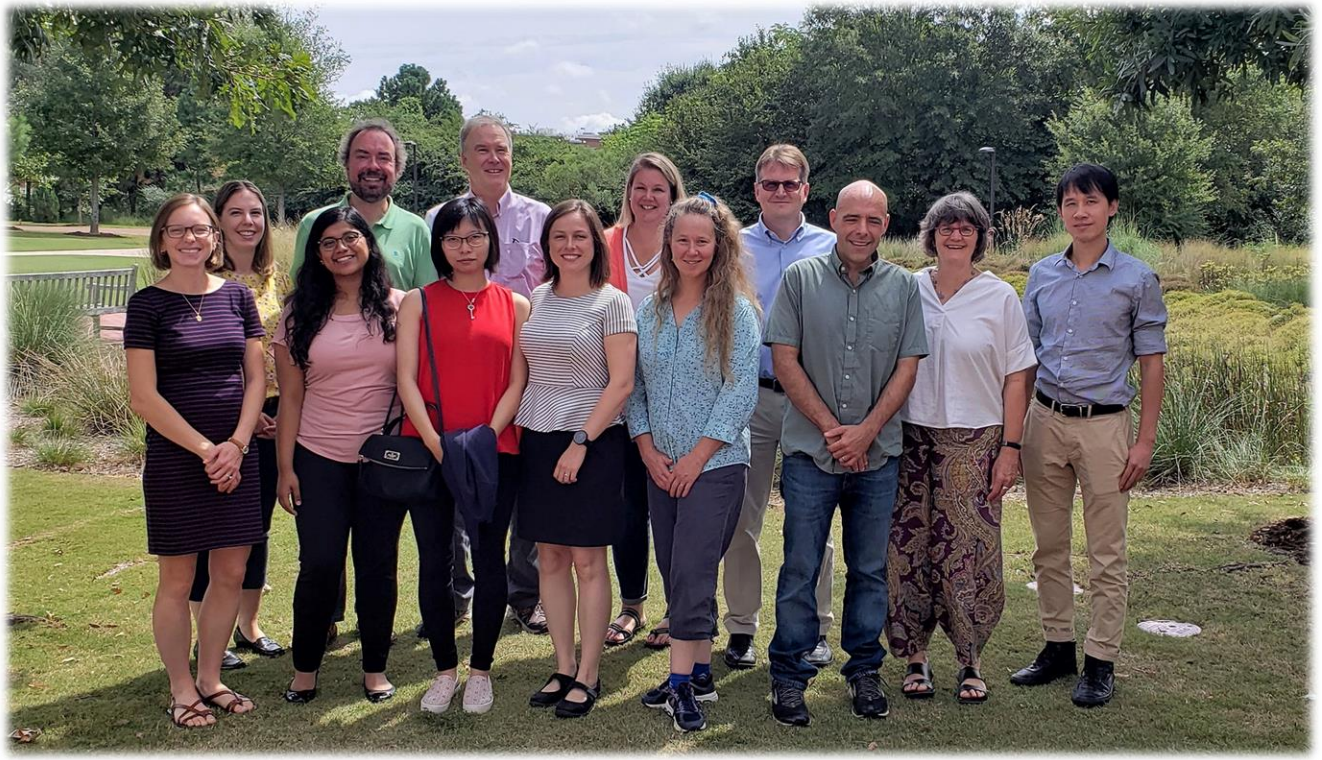

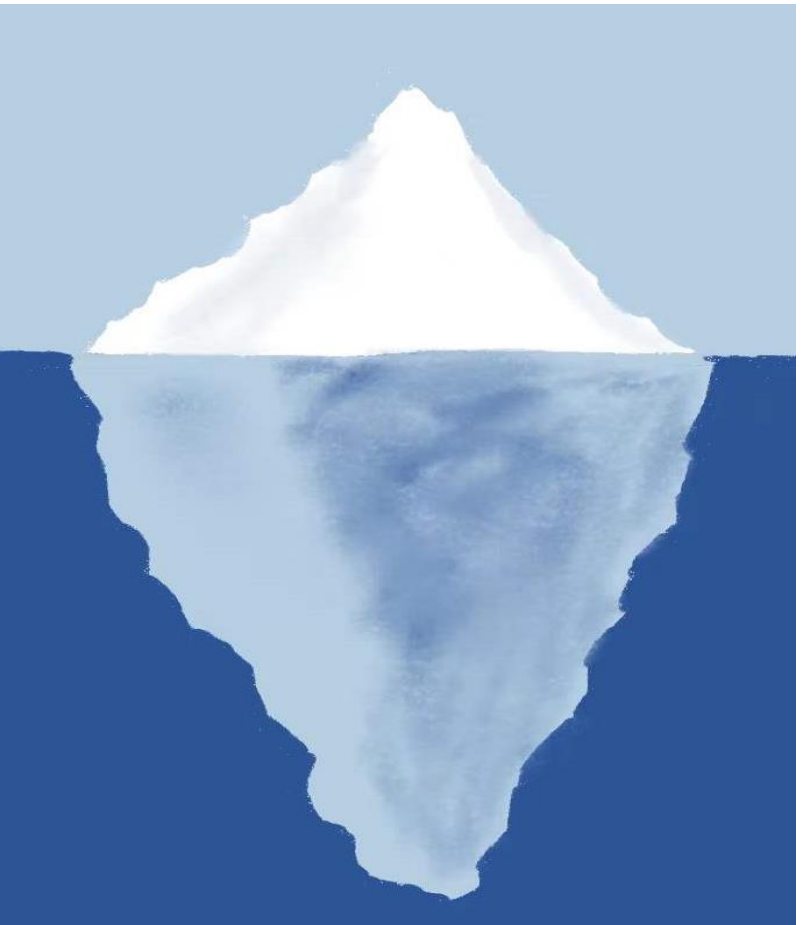

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