SWAG Meeting

March 5, 2025 | 6:30-8:30pm

Hybrid Meeting: Portsmouth City Hall Conference Rm A and Zoom

Agenda

1. Welcome, Introduction & Approval of minutes – Andrea Amico, co-chair
2. Fluoride Presentation and Discussion – NHDES, NHDHHS & NHOHC
3. NHDES Regulatory Update - NHDES
4. PFAS Update
5. Lead Discussion – Rich DiPentima, SWAG Member
6. Quarterly Water Supply Update – Al Pratt, Water Resource Manager
7. Letter of Support for Greenland Well Treatment Funding
8. Mission Update
9. UNH Foam Sampling Project – Andrea Amico
10. Community Education Discussion
11. Public Comment

Fluoridation

Fluoridation of Portsmouth and Pease Tradeport Community Water Supplies

- Portsmouth vote to add fluoride to the water supply in 1975
- Chemicals used for fluoridation
  - Fluorosilicic Acid (H_2SiF_6)
  - Sodium Fluoride (NaF)
- Target Concentration: 0.7 mg/L (range 0.6 – 0.8 mg/L) per CDC Recommendation

Fluoridation

Presentations

Gail Brown, MSW, Executive Director, NH Oral Health Coalition
Alia Hayes, MPH, NH Department of Health and Human Services
Jennifer Mates, P.E., Engineer, NH Department of Environmental Services

Fluoride and Teeth: Mechanism of Action

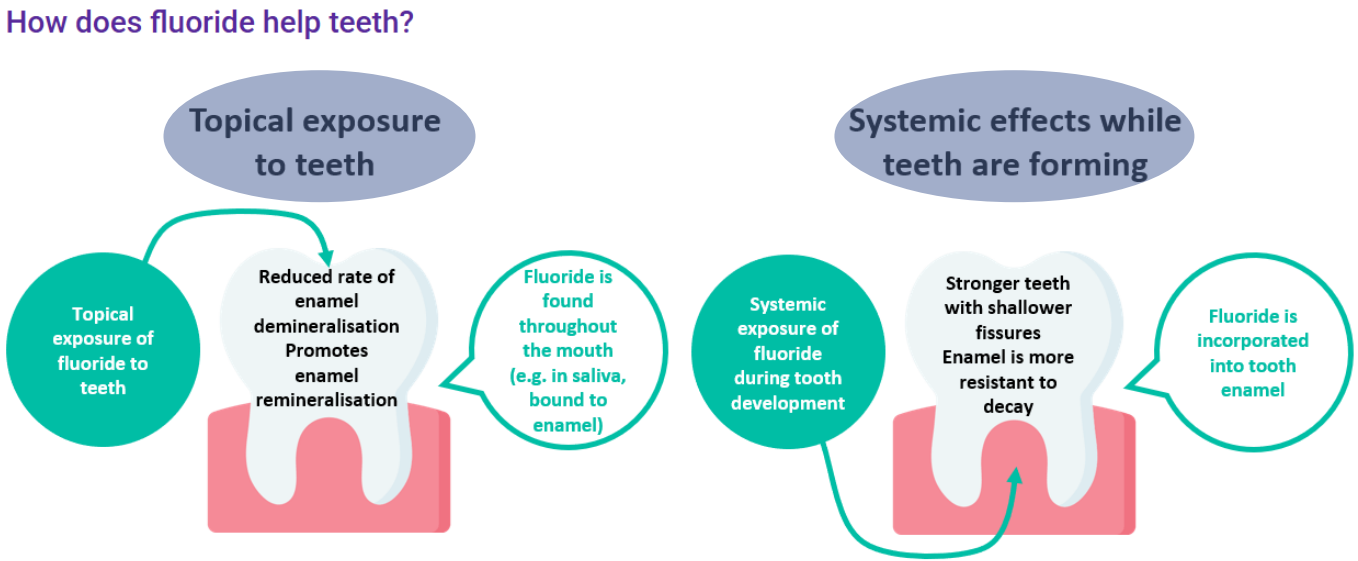

Figure 7: Illustrative figure of how fluoride impacts teeth.

Source: https://www.pmcsa.ac.nz/topics/fluoridation-an-update-on-evidence/

NEW HAMPSHIRE DHHS DEPARTMENT OF HEALTH & HUMAN SERVICES

How to Maximize Fluoride Benefits

1. Professional Applications

2. Self Applications

3. ***Fluoridated Water Systems***
   - Access for everyone
   - Fiscally responsible ($32/person/year)
   - Improved outcomes

Concerns with Additional Emerging Evidence

At levels at least ***2-3 times*** the 0.7mg/L, there may be some risks	• NTP Monograph – review of risks only • Public Health benefits cannot be weighed
Recent evidence: Impacts on IQ in the realm of a 1-2 point reduction	• Pregnant women • Urinary fluoride as an indicator – not exposure level • High fluoride levels
Regulated by EPA due to presence in drinking water vs. FDA which regulates food and beverages	• Affects the way information is examined • Maximum Contaminant Level (MCL) of fluoride has been decreased to ensure safety • Maximum Contaminant Level – phrasing can alarm people

Why Continue?

LOCAL NEWS

Most Massachusetts residents have fluoride in drinking water. Is it really good for us?

WBZ NEWS

By **Kristina Rex**
January 29, 2025 / 6:41 PM EST / CBS Boston

Research shows that adding the optimal level of fluoride to drinking water - 0.7 mg/L - benefits dental health, he explained. "We know even Massachusetts communities that are not fluoridated have almost 50% higher MassHealth claims... Meaning utilization of dental care for children," he said. "The question to ask is, do we know if the optimum level has any neurotoxic effects? And it in fact does not," he said.

https://www.cbsnews.com/boston/news/fluoride-drinking-water-massachusetts-health/

https://www.cdc.gov/oral-health/php/infographics/community-water-fluoridation.html

NEW HAMPSHIRE DHHS
DEPARTMENT OF HEALTH & HUMAN SERVICES

Fluoridation

Presentations

Gail Brown, MSW, Executive Director, NH Oral Health Coalition
Alia Hayes, MPH, NH Department of Health and Human Services
Jennifer Mates, P.E., Engineer, NH Department of Environmental Services

NHDES Regulatory Update

Brandon Kernen
Administrator of Drinking Water & Groundwater Bureau
NH Department of Environmental Services

PFAS Update

- Status of plans to work with the Air Force to obtain funding to implement treatment for PFAS on the Portsmouth and Collins wells to be in compliance with US EPA's MCLs issued in April 2024.

- PFAS in drinking water and cancer study.

Results

PFAS in drinking water was associated with increased cancer incidence in the digestive, endocrine, oral cavity/pharynx, and respiratory systems. Incidence rate ratios (IRRs) ranged from 1.02 to 1.33. The strongest association was observed between PFBS and oral cavity/pharynx cancers (IRR: 1.33 [1.04, 1.71]). Among males, PFAS was associated with cancers in the urinary, brain, leukemia, and soft tissues. Among females, PFAS was associated with cancers in the thyroid, oral cavity/pharynx, and soft tissue. PFAS in drinking water is estimated to contribute to 4626 [95% CI: 1,377, 8046] incident cancer cases per year based on UCMR3 data and 6864 [95% CI: 991, 12,804] based on UCMR5.

Journal of Exposure Science & Environmental Epidemiology

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nature > journal of exposure science & environmental epidemiology > articles > article

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

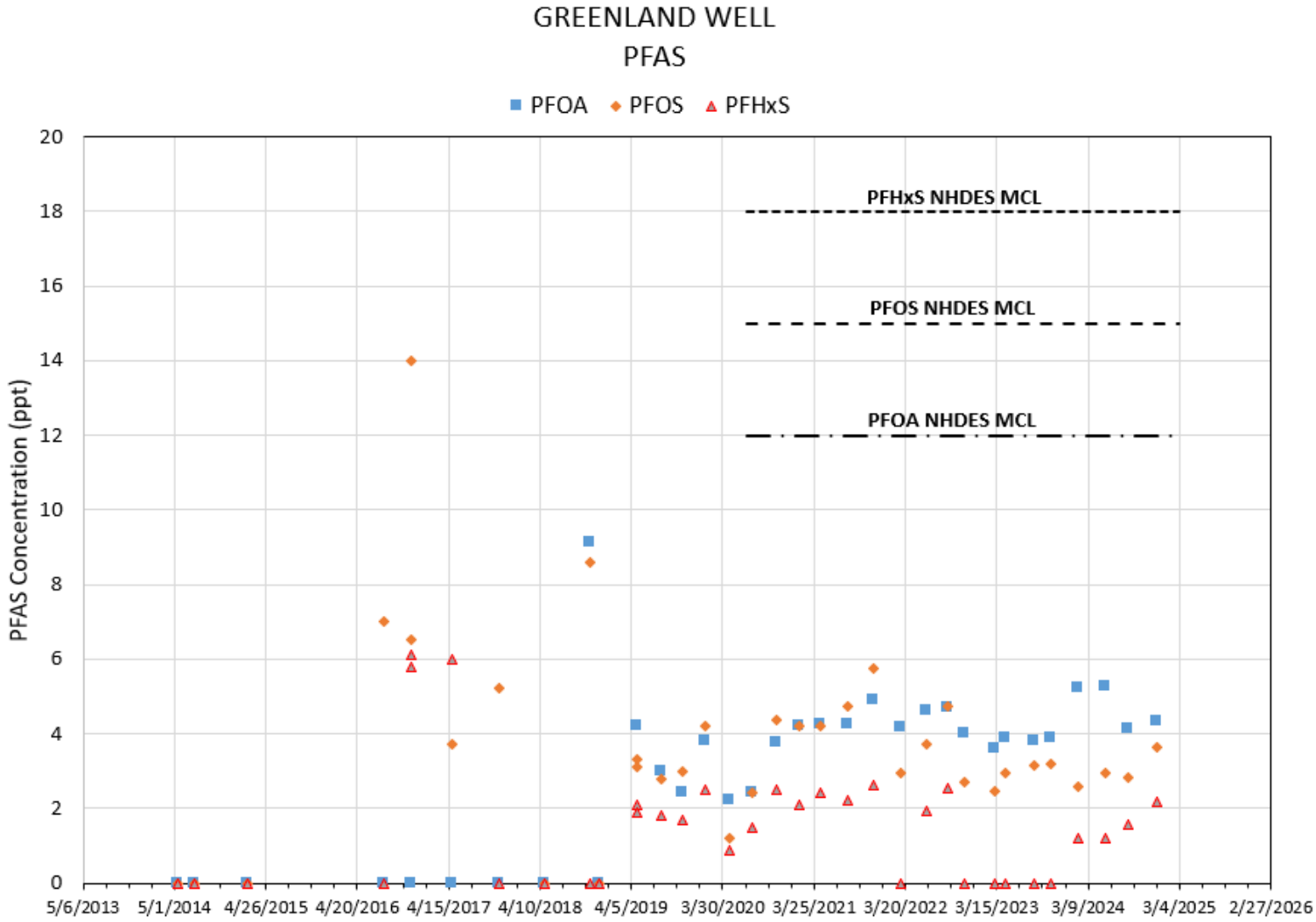
27k Accesses | 491 Altmetric | Metrics

Abstract

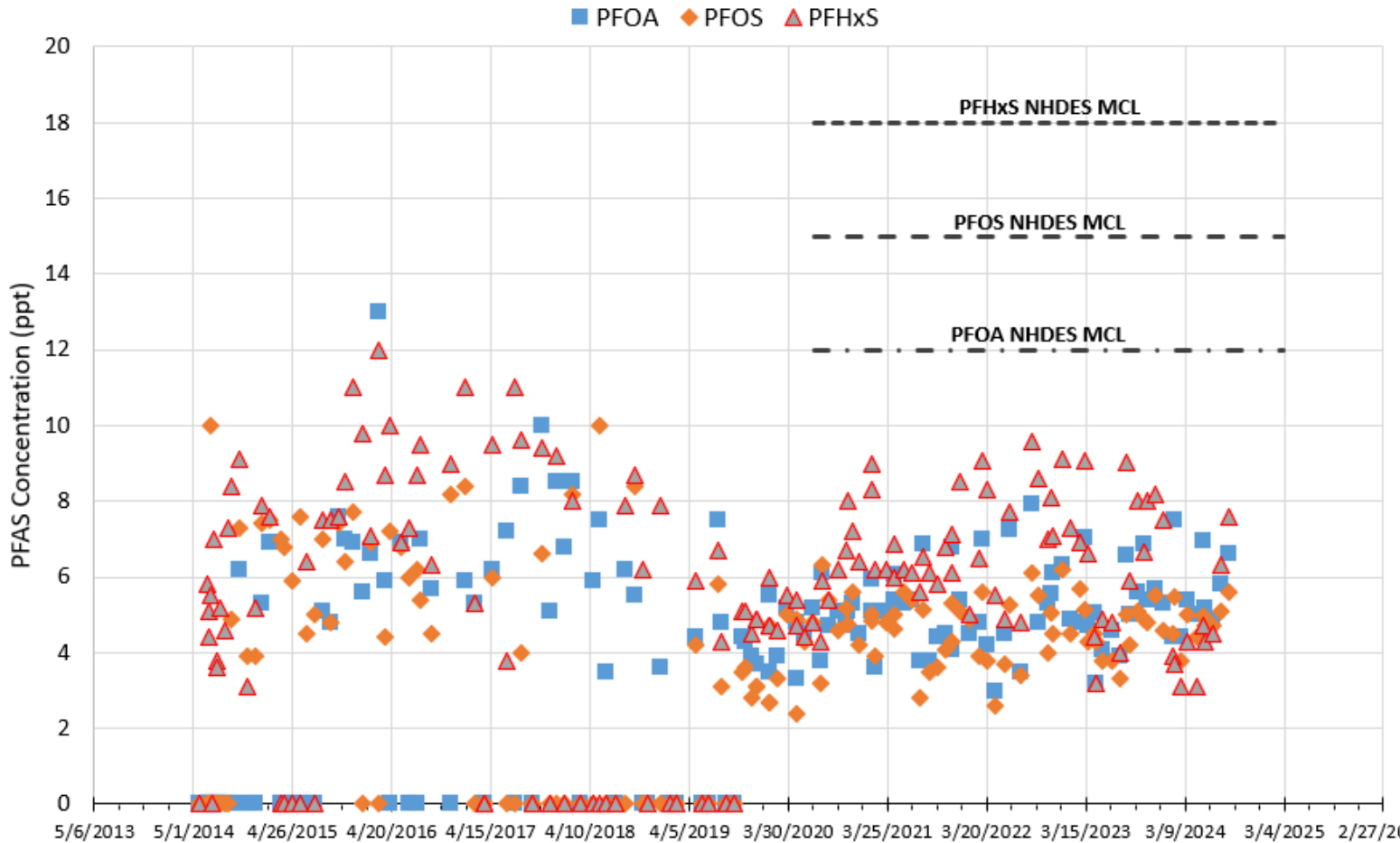
Background

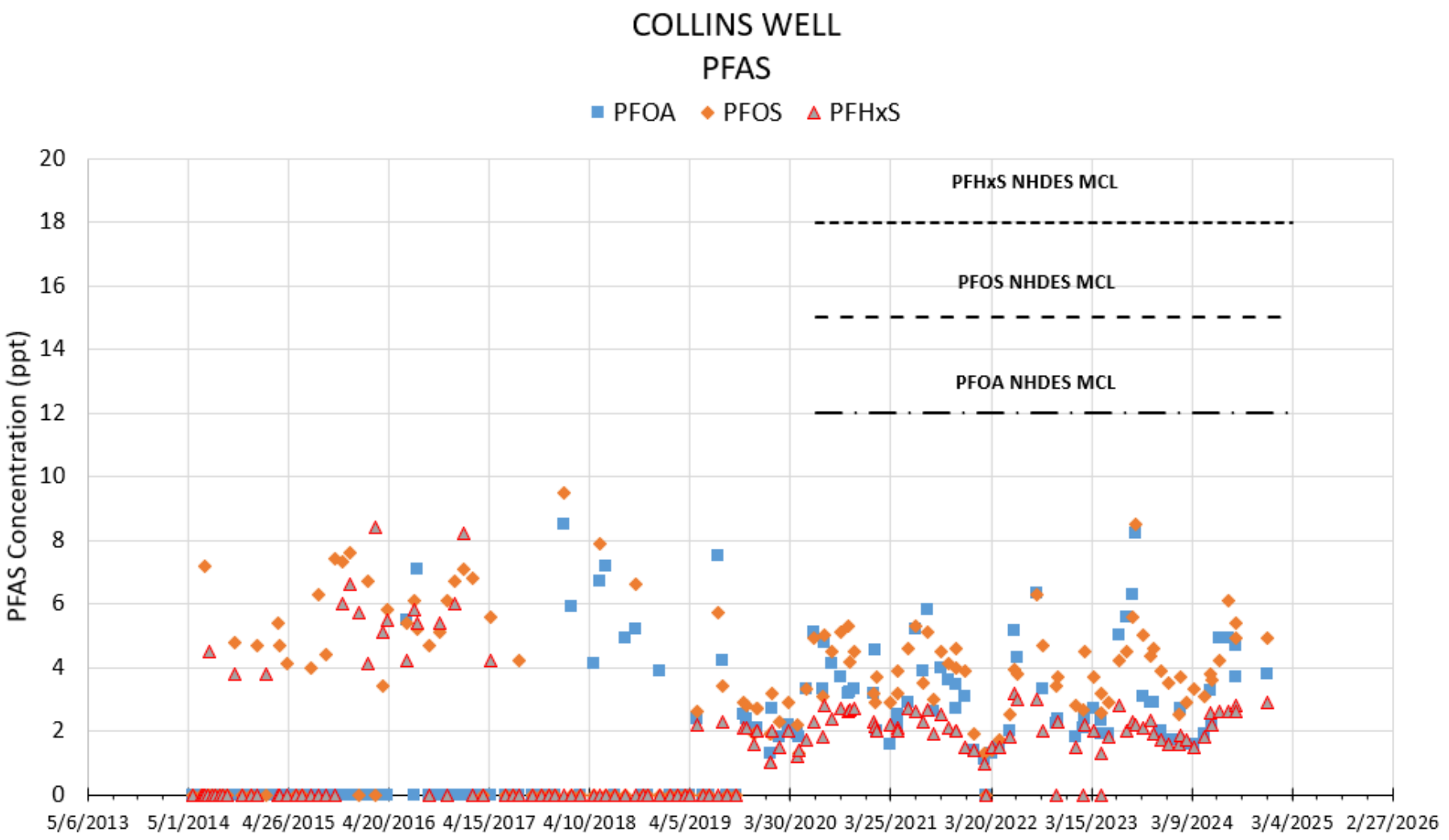
Exposure to per- and polyfluoroalkyl substances (PFAS) has been linked with various cancers. Assessment of PFAS in drinking water and cancers can help inform biomonitoring and prevention efforts.

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


GREENLAND WELL
PFAS
PFOA
PFOS
PFHxS
PFHxS NHDES MCL
PFOS NHDES MCL
PFOA NHDES MCL
PFAS Concentration (ppt)
20
18
16
14
12
10
8
6
4
2
0
5/6/2013
5/1/2014
4/26/2015
4/20/2016
4/15/2017
4/10/2018
4/5/2019
3/30/2020
3/25/2021
3/20/2022
3/15/2023
3/9/2024
3/4/2025
2/27/2026

PORTSMOUTH 1 WELL
PFAS




COLLINS WELL
PFAS
PFOA
PFOS
PFHxS
PFHxS NHDES MCL
PFOS NHDES MCL
PFOA NHDES MCL
PFAS Concentration (ppt)
20
18
16
14
12
10
8
6
4
2
0
5/6/2013
5/1/2014
4/26/2015
4/20/2016
4/15/2017
4/10/2018
4/5/2019
3/30/2020
3/25/2021
3/20/2022
3/15/2023
3/9/2024
3/4/2025
2/27/2026

12-Month Rolling Average
January 2024 – December 2024

12-MONTH ROLLING AVERAGE 2024 Q4		EPA MCL (2024)	NH MCL	RAW*	MADBURY WTP FINISHED	MADBURY WELL 2	MADBURY WELL 3	MADBURY WELL 4	MADBURY WELL 5	PORTSMOUTH WELL	COLLINS WELL	GREENLAND WELL
Perfluorohexanesulfonic acid(PFHxS)	ng/L	10	18	0.0	0.0	0.2	0.2	0.0	0.3	5.8	2.0	0.6
Perfluorooctanesulfonic acid (PFOS)	ng/L	4	15	0.4	0.3	0.4	0.4	0.0	0.2	**5.1**	**4.3**	3.0
Perfluorooctanoic acid (PFOA)	ng/L	4	12	2.6	2.7	2.7	3.0	0.9	3.2	**7.7**	3.6	**4.7**
Perfluorononanoic acid (PFNA)	ng/L	10	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ng/L	10		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perfluorobutanesulfonic acid (PFBS)	ng/L			0.3	0.3	0.4	0.3	0.3	3.1	4.7	10.4	2.3
Hazard Index*		1		0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.2	0.1

* Hazard Index MCL = (HFPO-DA/10)+(PFBS/2000)+(PFNA/10)+(PFHxS/10)

Lead Discussion

Rich DiPentima

Former Chief of Communicable Disease Epidemiology and Assistant Director of Public Health – NH Division of Public Health Services

"Opinion: Stop the silent poisoning and protect New Hampshire's children from lead" – Concord Monitor, February 2025

Lead Discussion

SWAG member Rich DiPentima to discuss recent NH state report on blood lead levels (1,142 children poisoned by lead in 2023 in NH) and his op ed in the Concord Monitor on 2/15/25 to raise awareness.

CONCORD MONITOR

Opinion: Stop the silent poisoning and protect New Hampshire's children from lead

File File

By RICH DIPENTIMA

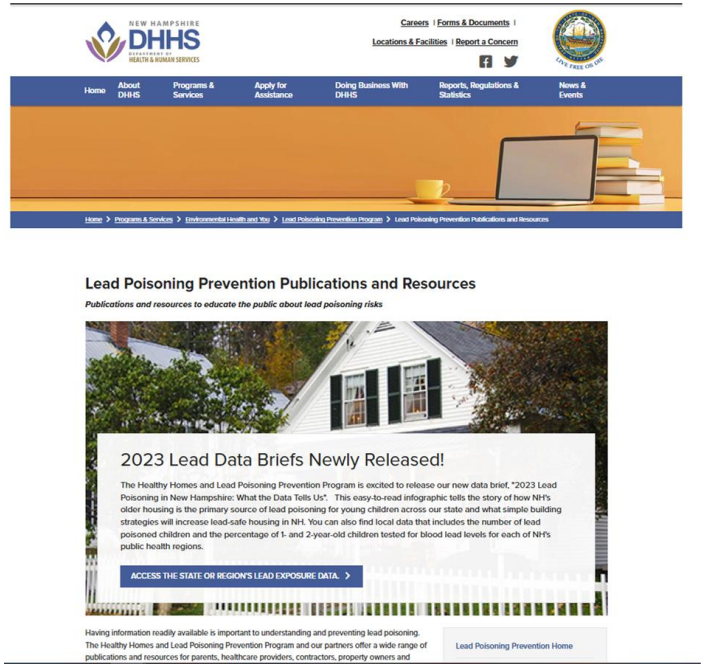
Published: 02-15-2025 6:01 AM

facebook

Rich DiPentima of Portsmouth has served as Chief of Communicable Disease Epidemiology and Assistant Director of Public Health for the NH Division of Public Health Services (NHDPHS), Deputy Public Health Director for the Manchester Health Department and is a retired NH Air National Guard public health officer.

In 2000, as a public health official investigating communicable diseases,

https://www.concordmonitor.com/childhood-lead-poisoning-prevention-New-Hampshire-opinion-CM-59391478

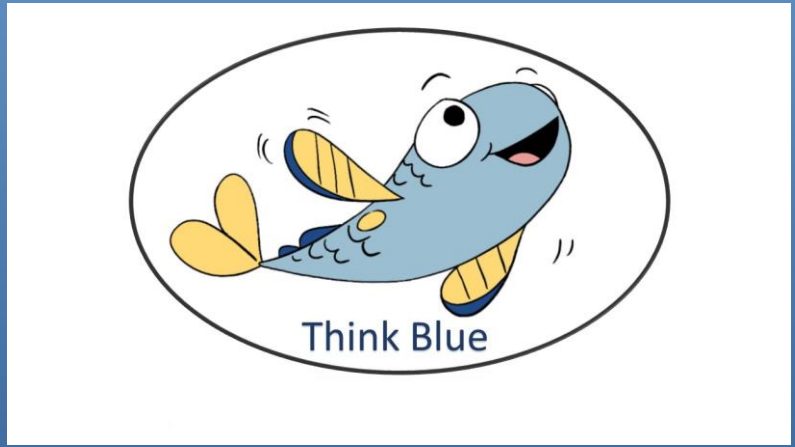


Lead Poisoning Prevention Publications and Resources

Publications and resources to educate the public about lead poisoning risks

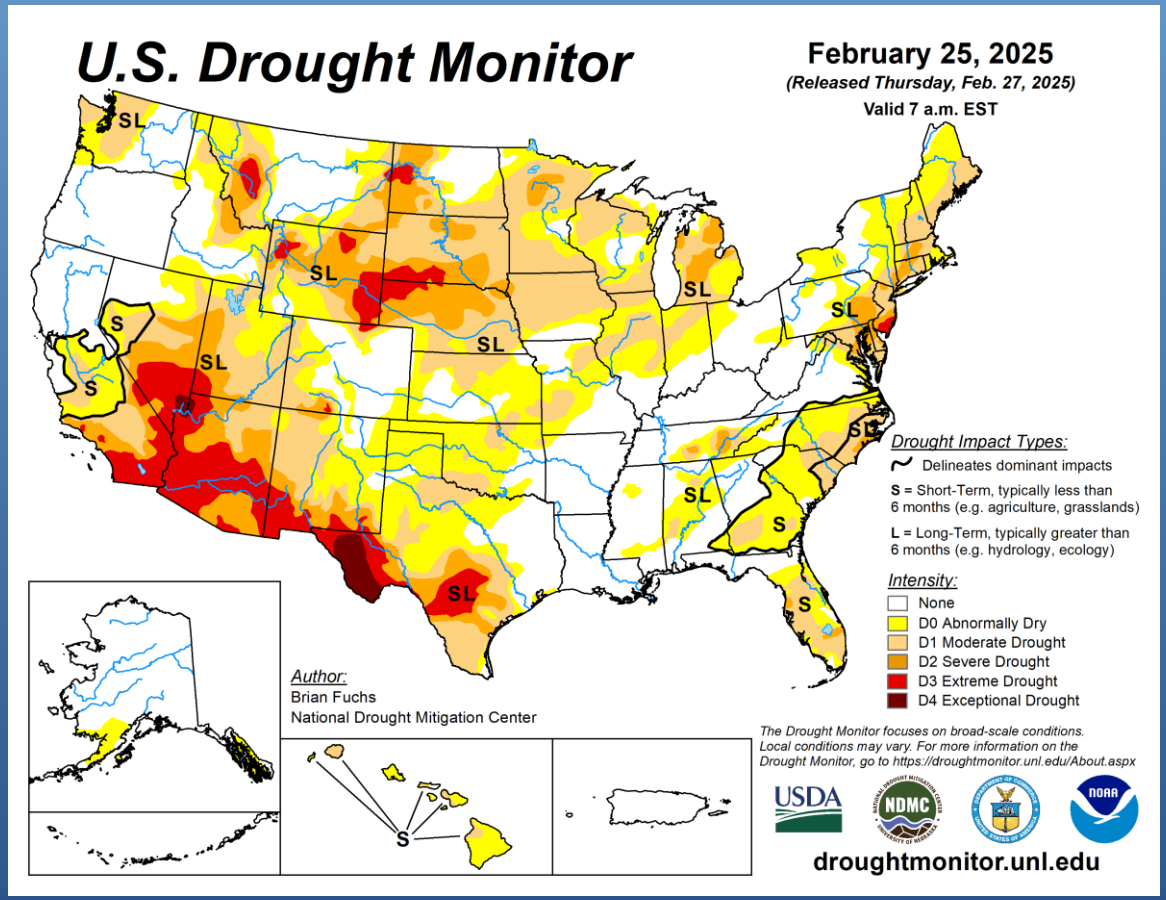
https://www.dhhs.nh.gov/programs-services/environmental-health-and-you/lead-poisoning-prevention-program/lead-poisoning

Portsmouth and Pease Water Supply Update

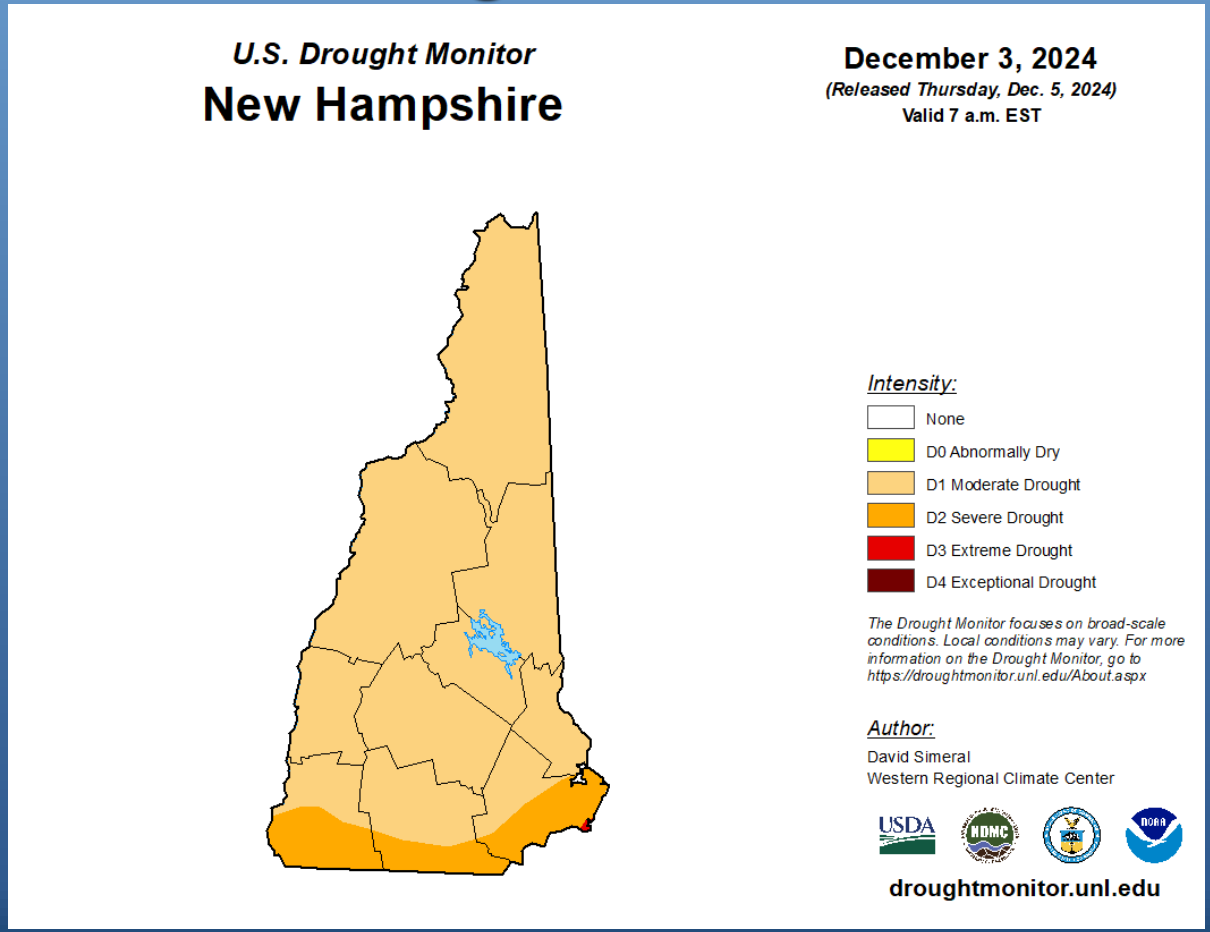


Safe Water Advisory Group
March 5, 2025

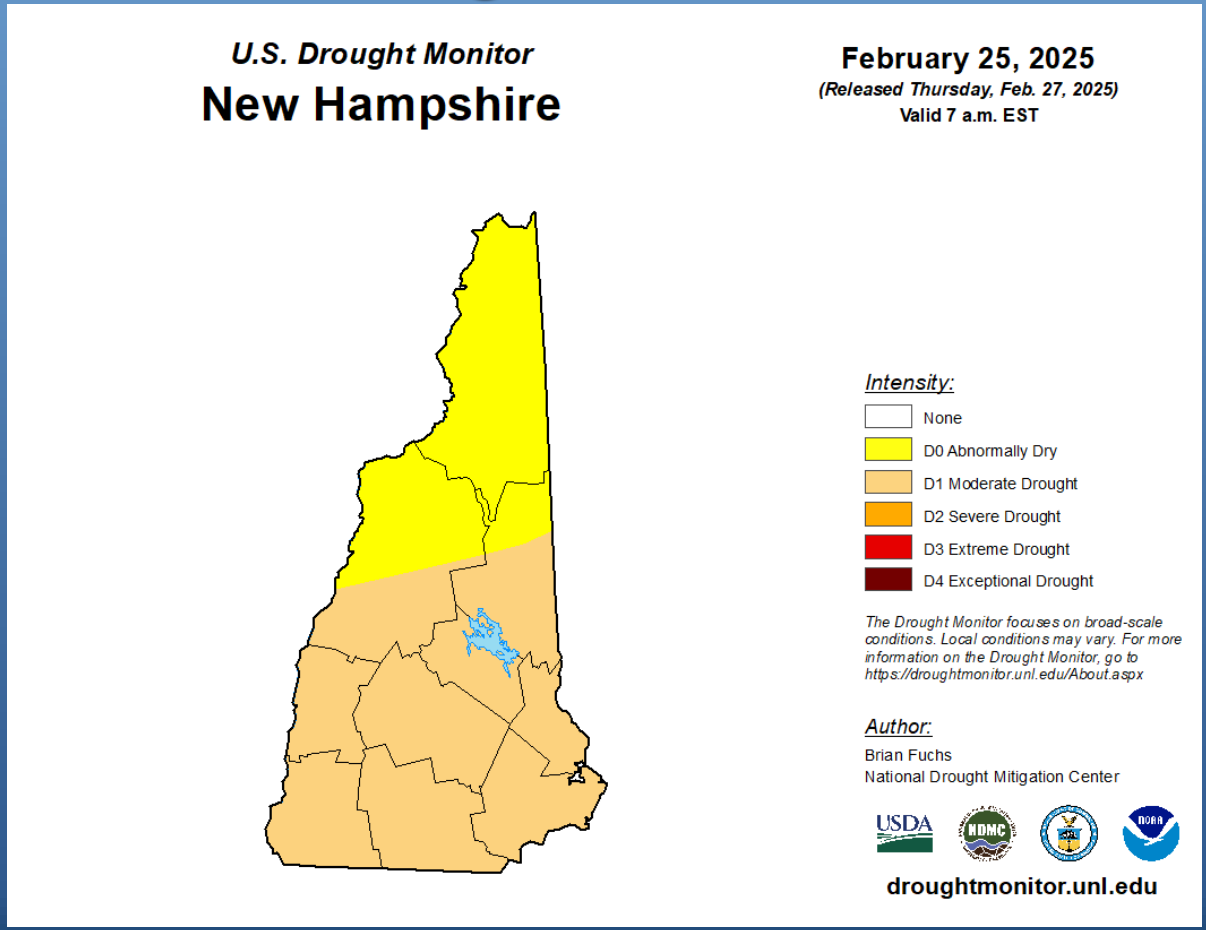
Drought Monitor



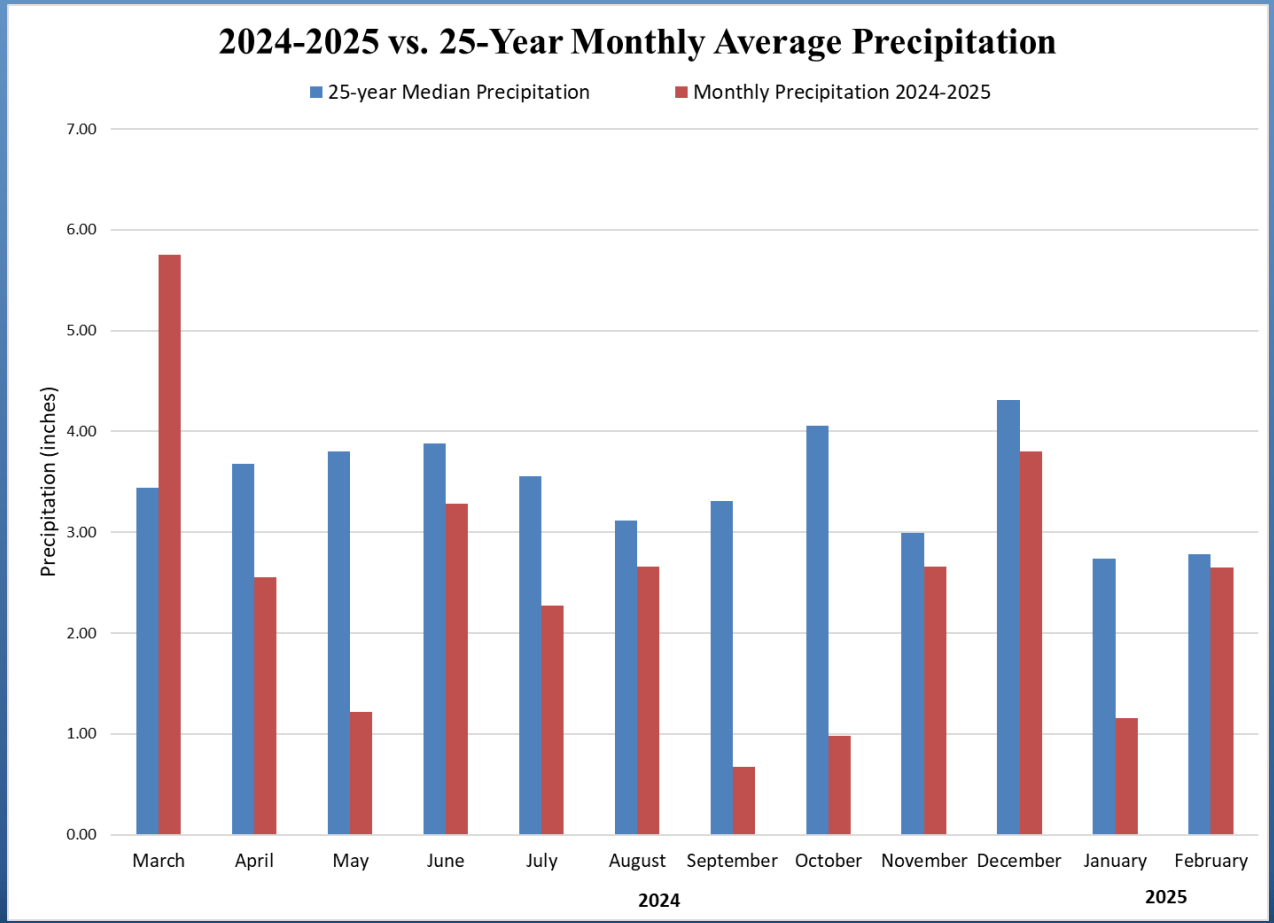
Drought Monitor



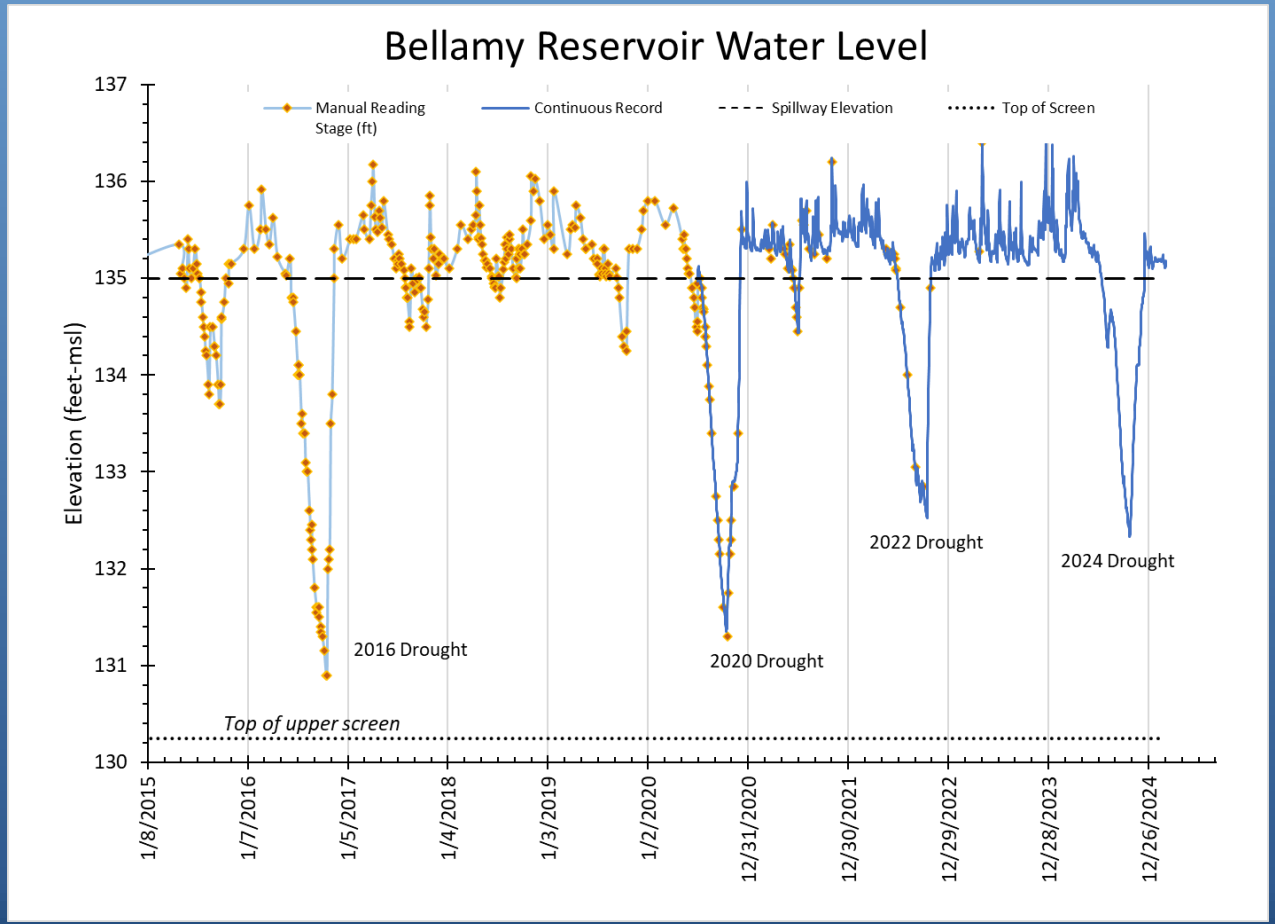
Drought Monitor



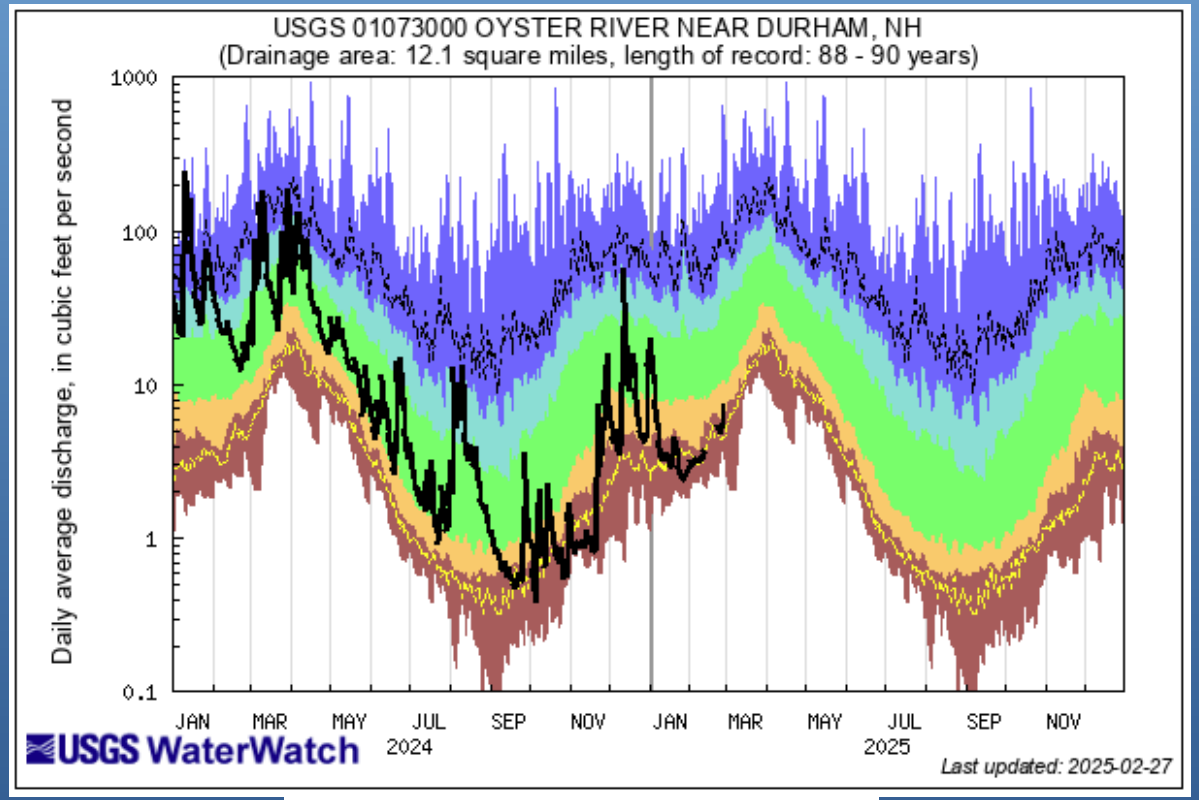
Precipitation – 71% of Annual Average



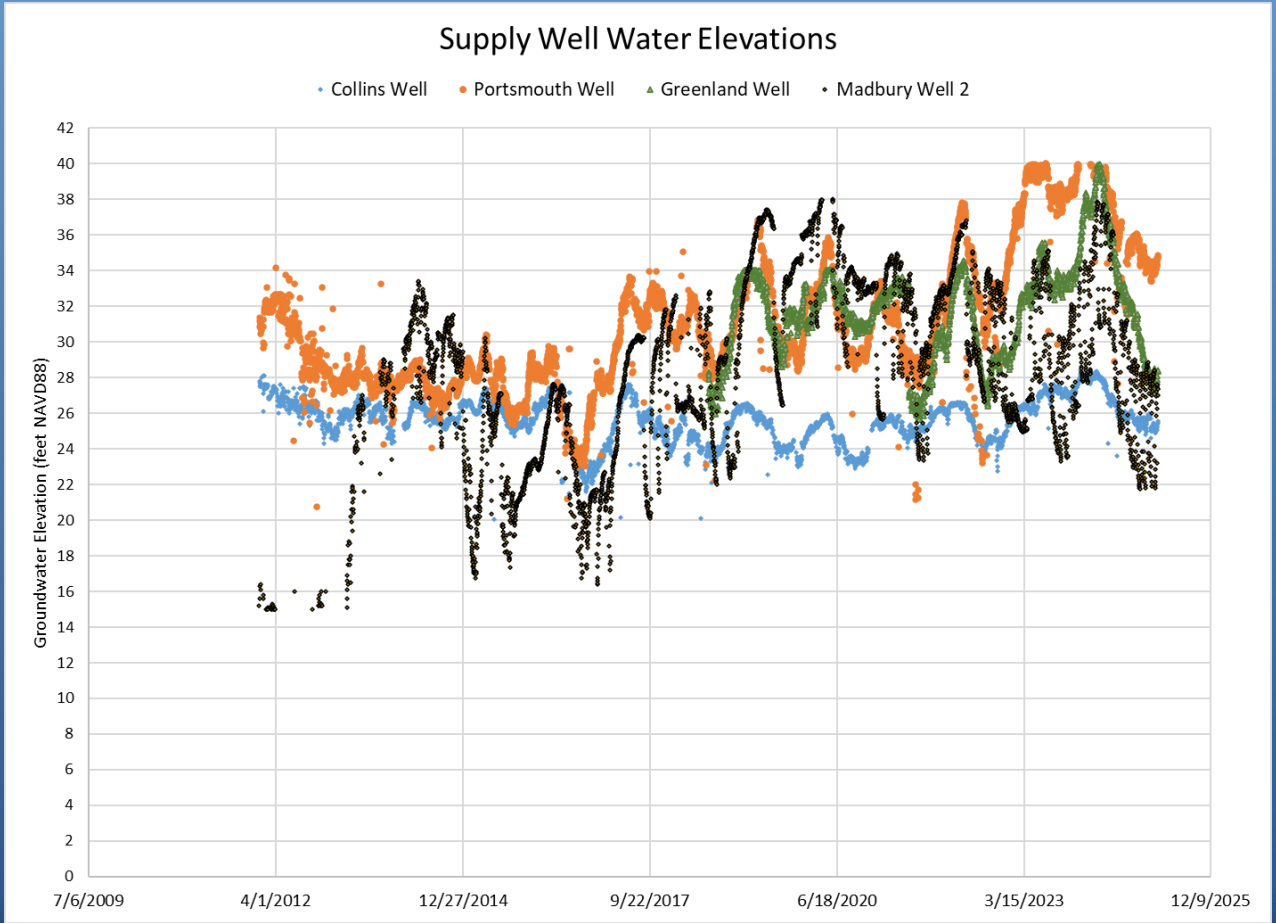
Surface Water Conditions



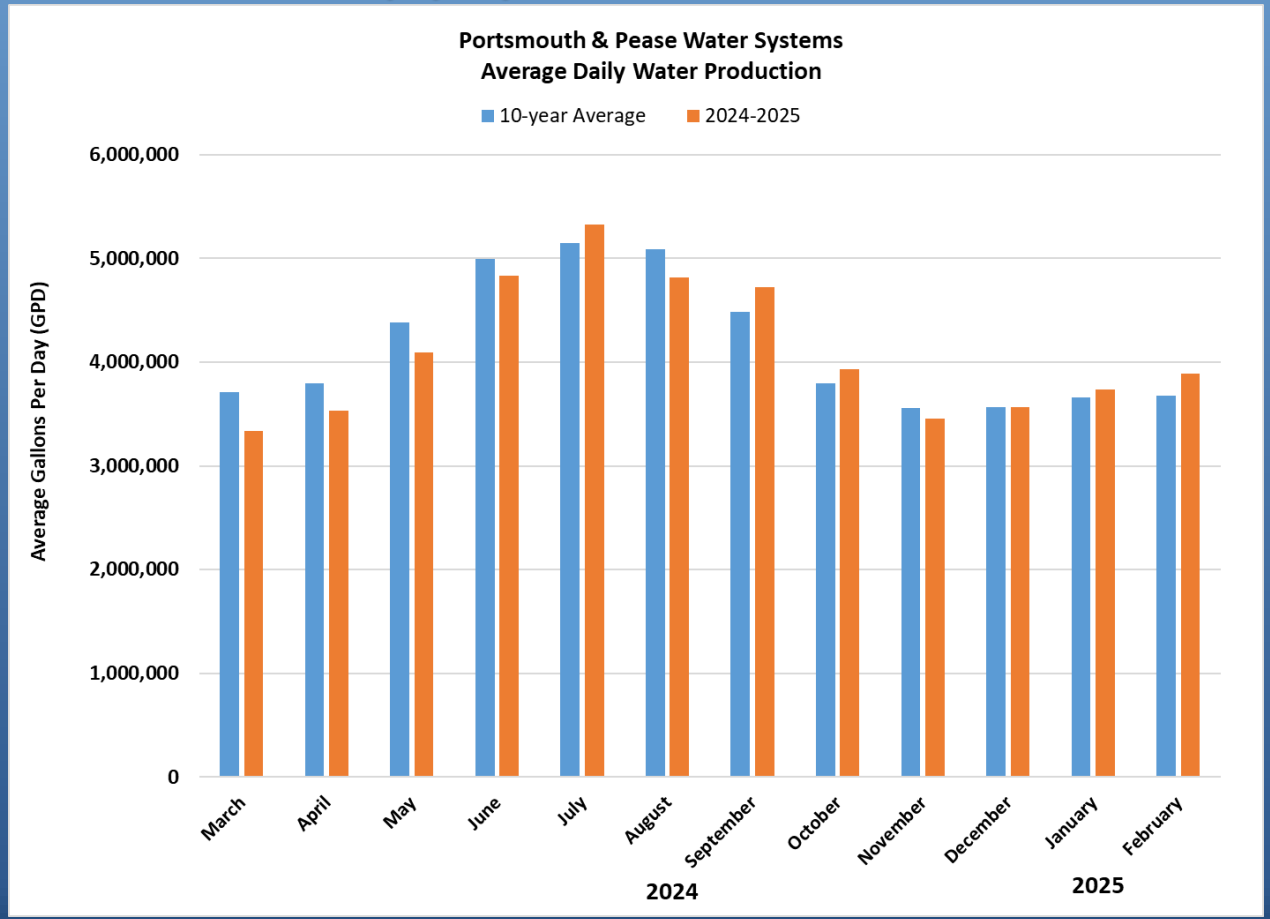
Stream Flow


USGS 01073000 OYSTER RIVER NEAR DURHAM, NH
(Drainage area: 12.1 square miles, length of record: 88 - 90 years)
Daily average discharge, in cubic feet per second
1000
100
10
1
0.1
JAN
MAR
MAY
JUL
SEP
NOV
JAN
MAR
MAY
JUL
SEP
NOV
2024
2025
USGS WaterWatch
Last updated: 2025-02-27
Explanation - Percentile classes
lowest-10th percentile
5
10-24
25-75
76-90
95
90th percentile -highest
Flow
Much below Normal
Below normal
Normal
Above normal
Much above normal

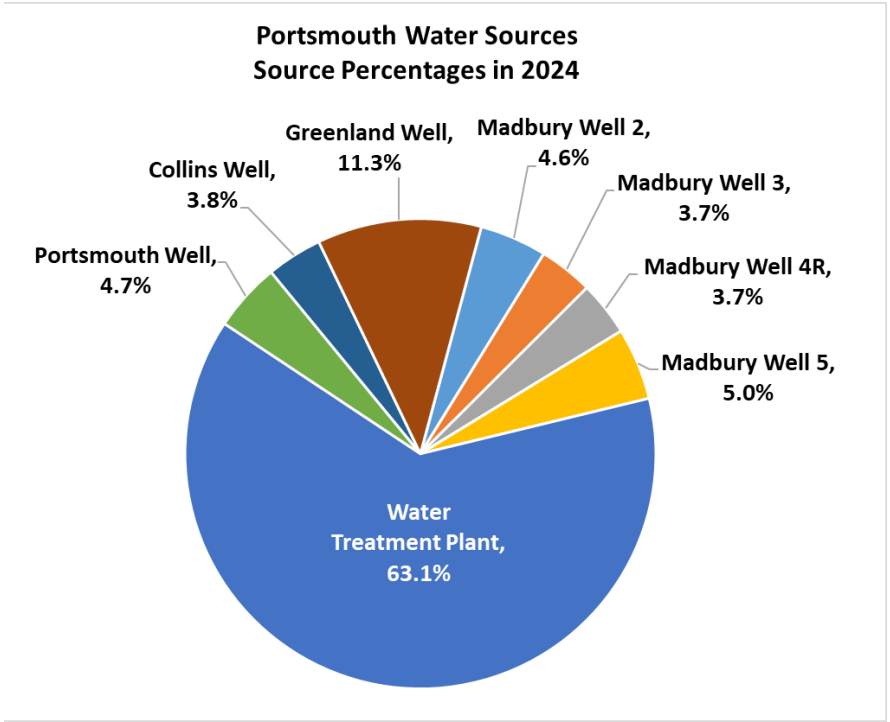
Groundwater Levels

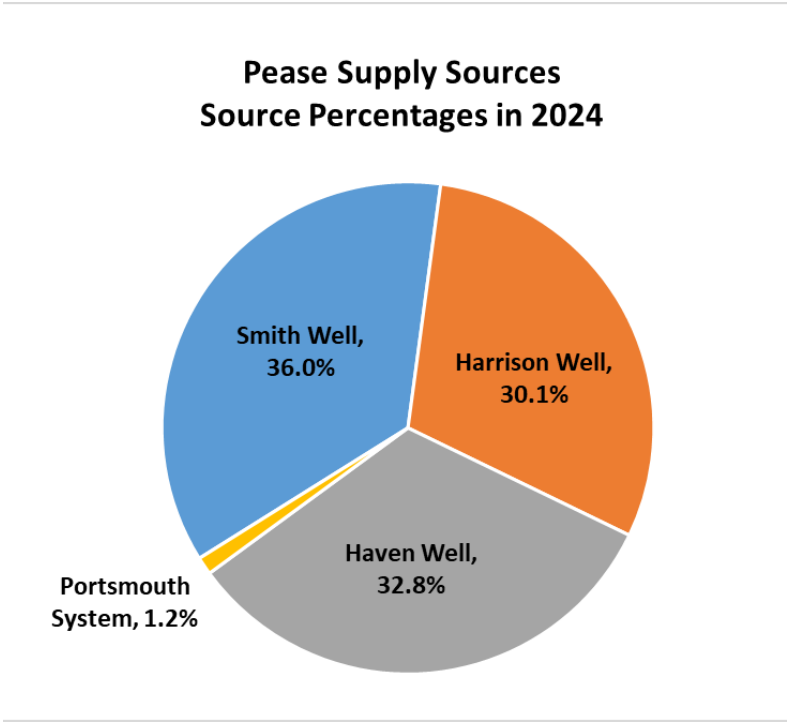


Supply Production

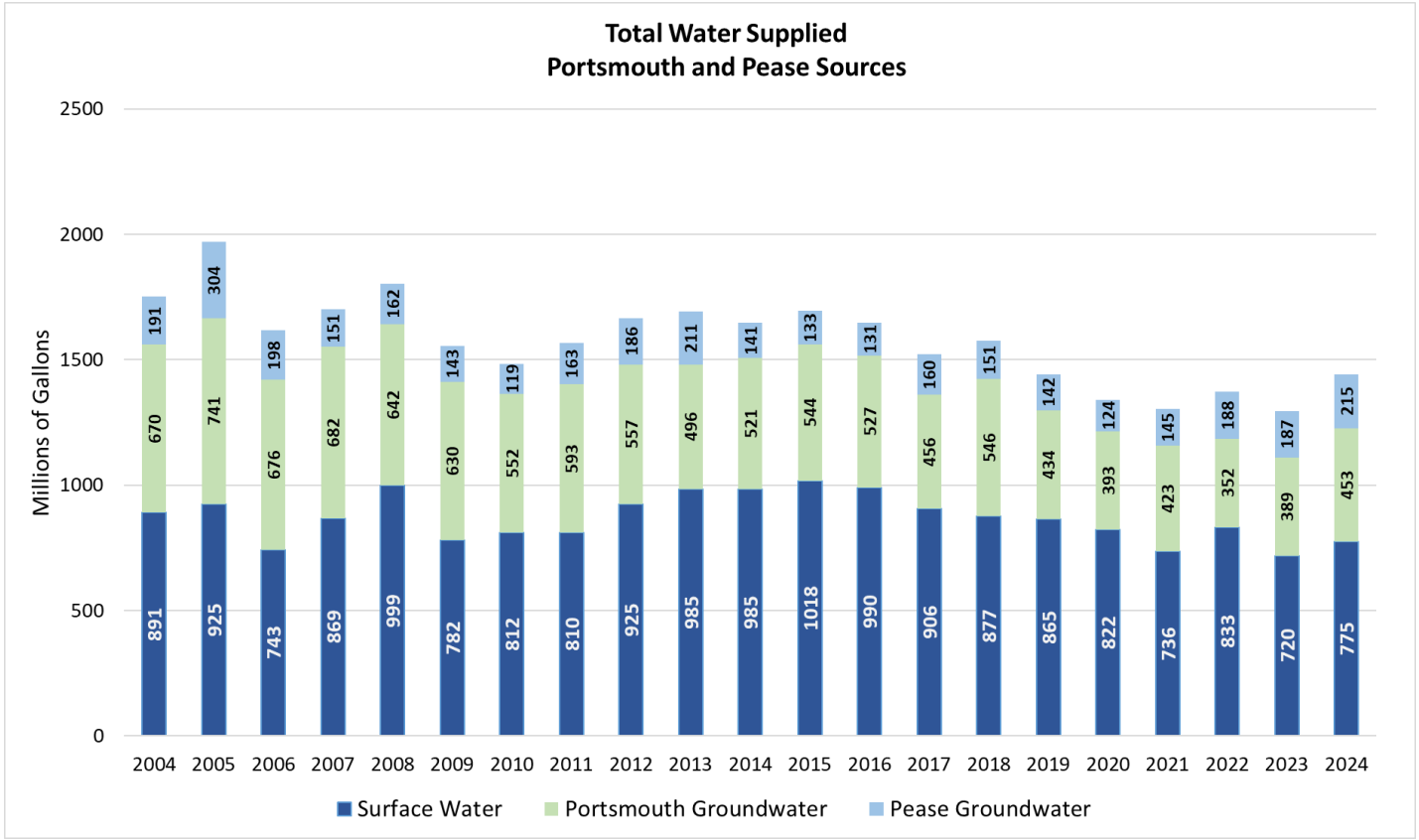


Supply Contribution





System Demand



Letter of Support for Greenland Well

Discuss SWAG sending a letter to Senator Shaheen showing support for Congressionally directed funds to assist with the construction of a water treatment facility to remove PFAS from the drinking water in the Greenland Well.

Due to rising costs, there has been a considerable increase in funds needed to implement treatment on the Greenland Well since the preliminary estimate that was previously provided for this water treatment facility.

Greenland Selectboard has written a letter of support to Senator Shaheen.

Mission Discussion

Current Mission:

Established by Council action on October 5, 2020, the group's stated mission is to:

To review and communicate the latest science on the health and environmental effects of PFAS, to monitor federal and state level legislative changes, and to anticipate policy changes that could impact the city of Portsmouth.

In the SWAG City Council report dated 1/8/24:

“... It is important to note that SWAG meetings have consistently covered topics on the City’s water quantity, quality, preservation and conservation efforts, and projects pertaining to the water master planning through the City’s annual Capital Improvement Plan process and other engineering studies.”

Mission Discussion

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Established by Council action on October 5, 2020, the group's stated mission is to:

To review and communicate the latest science on the health and environmental effects of PFAS, to monitor federal and state level legislative changes, and to anticipate policy changes that could impact the city of Portsmouth.

Proposed Mission:

To review and communicate the latest science on the health and environmental effects of PFAS, to monitor federal and state level legislative changes, and to anticipate policy changes that could impact the city of Portsmouth. To discuss topics relevant to the City's drinking water quantity, quality, preservation and conservation efforts, and water infrastructure projects ~~pertaining to the water master planning through the City's annual Capital Improvement Plan process and other engineering studies~~. To discuss public health aspects of water quality, support and provide public education about drinking water topics, and take proactive stances to protect and conserve water quality and quantity.

UNH Foam Sampling Project

- Foam formulation is an interesting phenomena - can be naturally occurring and can be due to contaminants in the water.
- Foam observed in Great Bay and Berry's Brook by community members.
- Community contacted UNH in July 2024 asking for help with testing foam for PFAS.
- Funding obtained through NH Sea Grant to collect and analyze foam for PFAS.
- 4 paired foam and surface water samples collected in Nov 2024.
- Preliminary results show PFAS concentrate in the foam at higher levels than surface water below.
- UNH applying for grant to do more expansive foam testing in the region.

UNH Foam Sampling Project

NH DES issued a fact sheet on surface water foams.

Key takeaway is to **<u>avoid contact with the foam</u>**.

UNH researchers find concentrated PFAS in foam in New Hampshire waterways

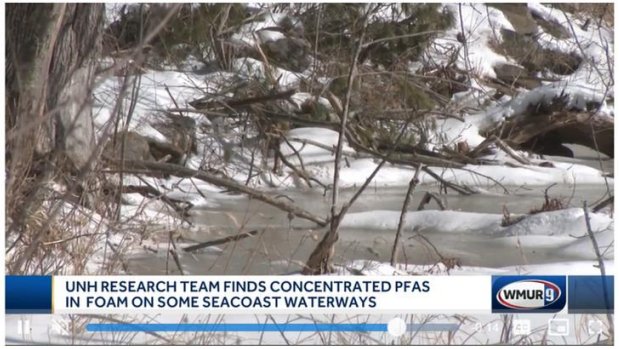
Share

WMUR 9 Updated: 7:20 PM EST Feb 19, 2025

Infinite Scroll Enabled

Arielle Mitropoulos

News Anchor/Reporter



GREENLAND, N.H. — Scientists at the University of New Hampshire are crediting people on the Seacoast for spotting unusual foam in waterways that was found to contain concentrated levels of PFAS chemicals.

Andrea Amico has spent the past 10 years fighting to keep dangerous chemicals out of New Hampshire

WMUR coverage: https://www.wmur.com/article/unh-pfas-foam-new-hampshire-21925/63846311

Boston Globe coverage: https://www.bostonglobe.com/2025/02/19/metro/pfas-forever-chemical-foam-seacoast-nh-great-bay-estuary-berrys-brook/?p1=BGSearch_Overlay_Results

ENVIRONMENTAL Fact Sheet

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

29 Hazen Drive, Concord, New Hampshire 03301 • (603) 271-3503 • www.des.nh.gov

ARD-EHP-38 2025

Surface Water Foams with PFAS

Surface water foam can be found on New Hampshire lakes, rivers and estuaries, floating on the surface or collecting at the water's edge. Foam can occur naturally or be caused or enhanced by environmental pollution. Some water bodies in New Hampshire have been impacted by per- and polyfluoroalkyl substances (PFAS). In those areas, the surface water foam may contain PFAS. PFAS are human-made chemicals used in industry and consumer products to make water-repellent clothing, stain-resistant fabrics, some firefighting foams and more. This fact sheet explains the main types of surface water foams seen in New Hampshire waters, including those with PFAS, how you can be exposed to foam with PFAS and ways you can reduce your exposure.

Do all foams contain PFAS?

No, not all foams contain PFAS. Foams can develop in surface waters due to natural processes (natural), chemical discharges (synthetic) or a combination of the two. In all cases, the color can vary from white to brown. The foam could also contain algae, cyanobacteria, parasites, viruses, bacteria, PFAS or other contaminants that could pose a health risk to people and pets if they are exposed.

- **Natural foams**: These are created when plants or other natural materials break down in the water and release organic substances (similar to compounds that produce bubbles in soap) and rise to the surface. When these substances in the water mix with air, bubbles or foam can form. In some instances, decaying cyanobacterial blooms can be mixed into these foams. Naturally occurring foams typically:
  - Have an off-white or brown color.
  - Collect in bays, eddies or near dams.
  - Have an earthy or fishy odor.
- **Synthetic foams**: Spills, discharges or runoff containing cleaning agents, nutrients, PFAS or other chemicals can cause foaming that is not naturally occurring. Synthetic foams typically:
  - Have a bright white color.
  - Are lightweight and tend to pile up like shaving cream.
  - Can have a perfume-like odor.

While there may be some identifiable differences between natural and synthetic foams, it is not recommended to try to determine the type of foam by smelling or touching it. Also, you can't always tell if surface water foam is natural or synthetic just by looking at it.

NH DES factsheet: chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/ard-ehp-38.pdf

Community Education Discussion

Looking for SWAG member input on needs and/or opportunities for community outreach and education in the near future.

What we have done so far:

- SWAG hosted Community Drinking Water forum May 2022
- SWAG members attended farmers market in Fall 2023 to hand out information on free lead water testing offered by City
- SWAG members have presented on various topics related to legislation, updated PFAS regulations, PFAS testing, lead & copper testing.
- SWAG has invited and hosted numerous guest speakers to provide education on various water quality topics
    - State agencies presented on lead, various PFAS topics, and fluoride.
    - City of Dover presented on the Tolend landfill.
    - Portsmouth School Dept presented on lead testing and remediation efforts in the school.

Public Comment