



# Private Wells: Well testing & Drought Initiatives

John Pasquale, MTBE Remediation Bureau  
Derek Bennett, MTBE Remediation Bureau  
Amy Hudnor, Drinking Water & Groundwater Bureau



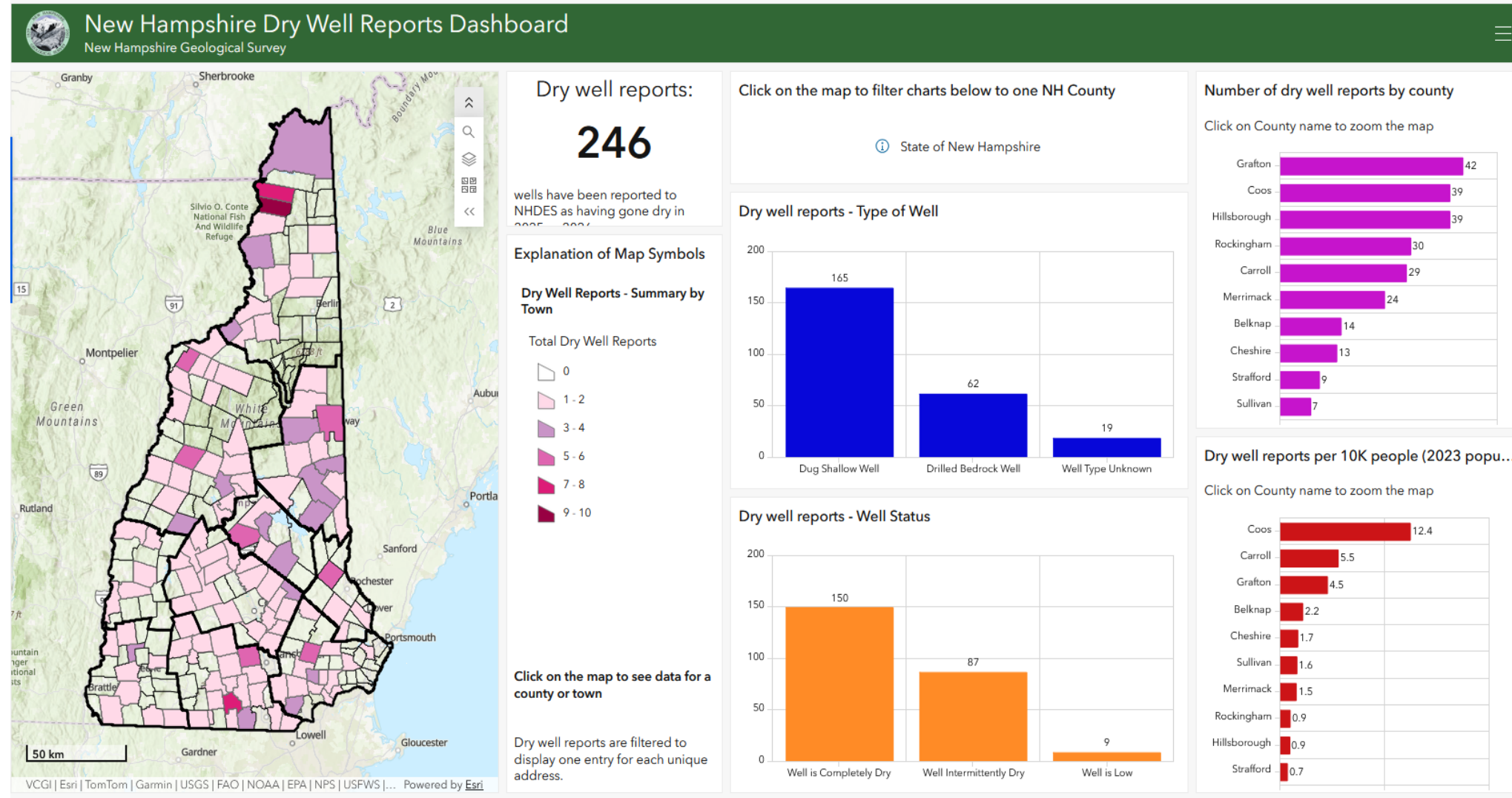


# Emergency Drought Assistance Programs

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# NHGS Dry Well Reporting Dashboard

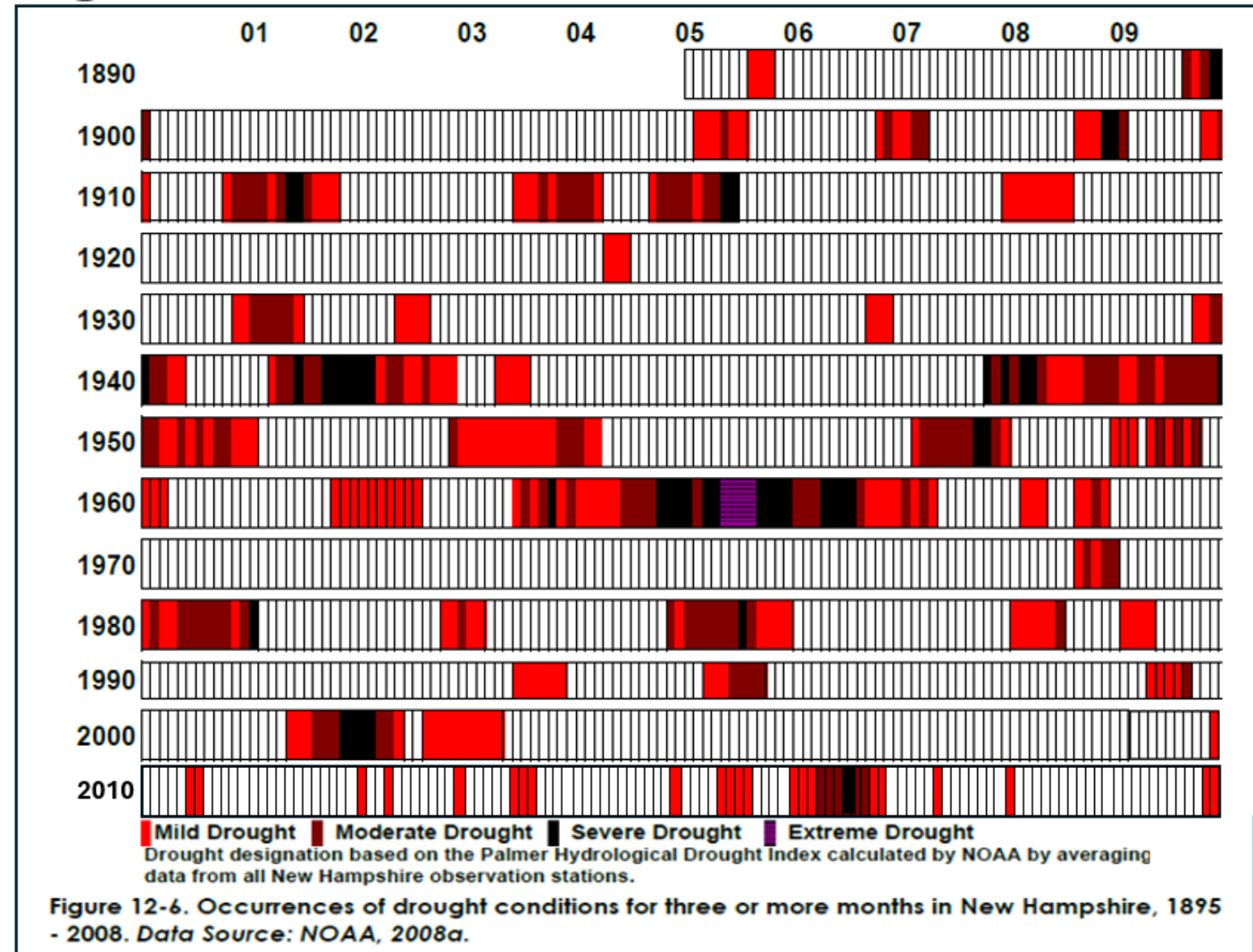


# NH Drought History 1890-2020

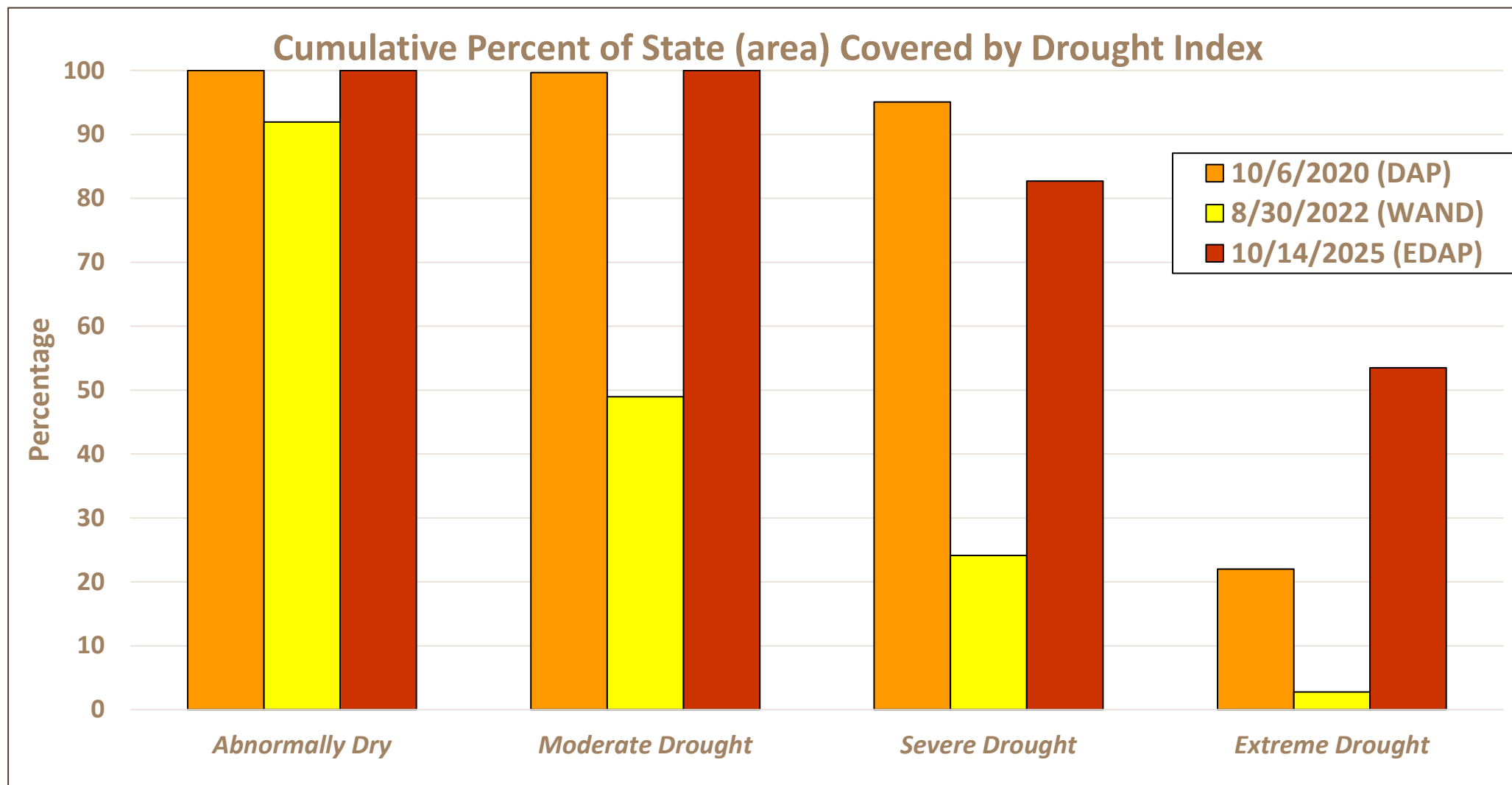


- Last 30-years likely reduction in 'meteorological drought'.
- Increase in the number of 'flash drought'
- Difficult to predict due to large number of factors
- See: *NH Climate Assessment 2021*

<https://scholars.unh.edu/sustainability>



# Area of State Covered by Drought Index

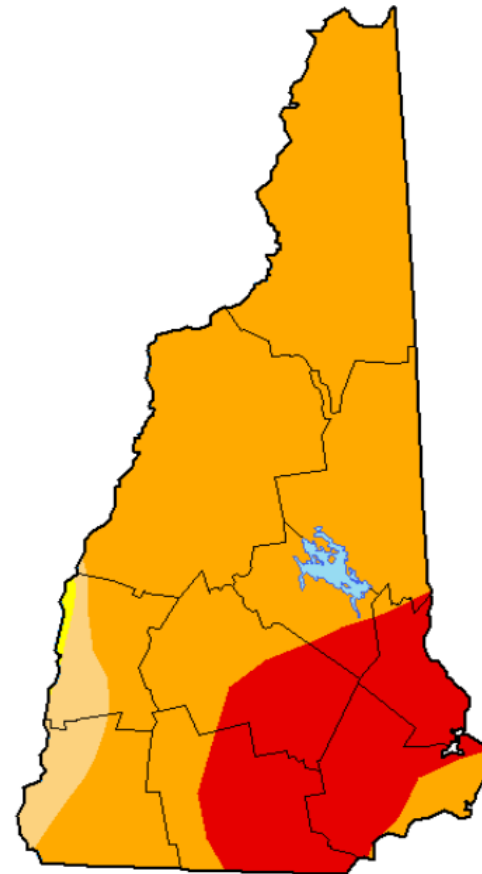


## Emergency Drought Assistance Program(EDAP)

- DWGW Advisory Commission is asked to fund EDAP, approves 1.5 Million establishing EDAP 10/23/2020. Program Opened 11/16/2020
- Eligibility Requirements-
  - Must be primary residence
  - Must own home, well and/or water rights
  - Well certified as “drought impacted”
  - Water use must be domestic
  - Below 50% of State of NH MHI = 100% grant
  - Between 50%-80% of MHI for 50% grant
  - 2020 MHI was ~\$75,000 (Family of 4)
- Program Stats-
  - Applications – 114 approved out of 125
  - Average Cost of Replacement Well - \$15,425
  - Average Cost of Treatment - \$2,860



### U.S. Drought Monitor New Hampshire



**October 6, 2020**

(Released Thursday, Oct. 8, 2020)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

|                                         | None   | D0-D4  | D1-D4  | D2-D4 | D3-D4 | D4   |
|-----------------------------------------|--------|--------|--------|-------|-------|------|
| Current                                 | 0.00   | 100.00 | 99.66  | 95.06 | 21.99 | 0.00 |
| Last Week<br>10-01-2020                 | 0.00   | 100.00 | 100.00 | 95.06 | 10.59 | 0.00 |
| 3 Months Ago<br>07-09-2020              | 0.04   | 99.96  | 56.44  | 0.00  | 0.00  | 0.00 |
| Start of<br>Calendar Year<br>01-02-2020 | 100.00 | 0.00   | 0.00   | 0.00  | 0.00  | 0.00 |
| Start of<br>Water Year<br>10-01-2020    | 0.00   | 100.00 | 100.00 | 95.06 | 10.59 | 0.00 |
| One Year Ago<br>10-10-2019              | 52.70  | 47.29  | 0.00   | 0.00  | 0.00  | 0.00 |

#### Intensity:

|                     |                        |
|---------------------|------------------------|
| None                | D2 Severe Drought      |
| D0 Abnormally Dry   | D3 Extreme Drought     |
| D1 Moderate Drought | D4 Exceptional Drought |

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

#### Author:

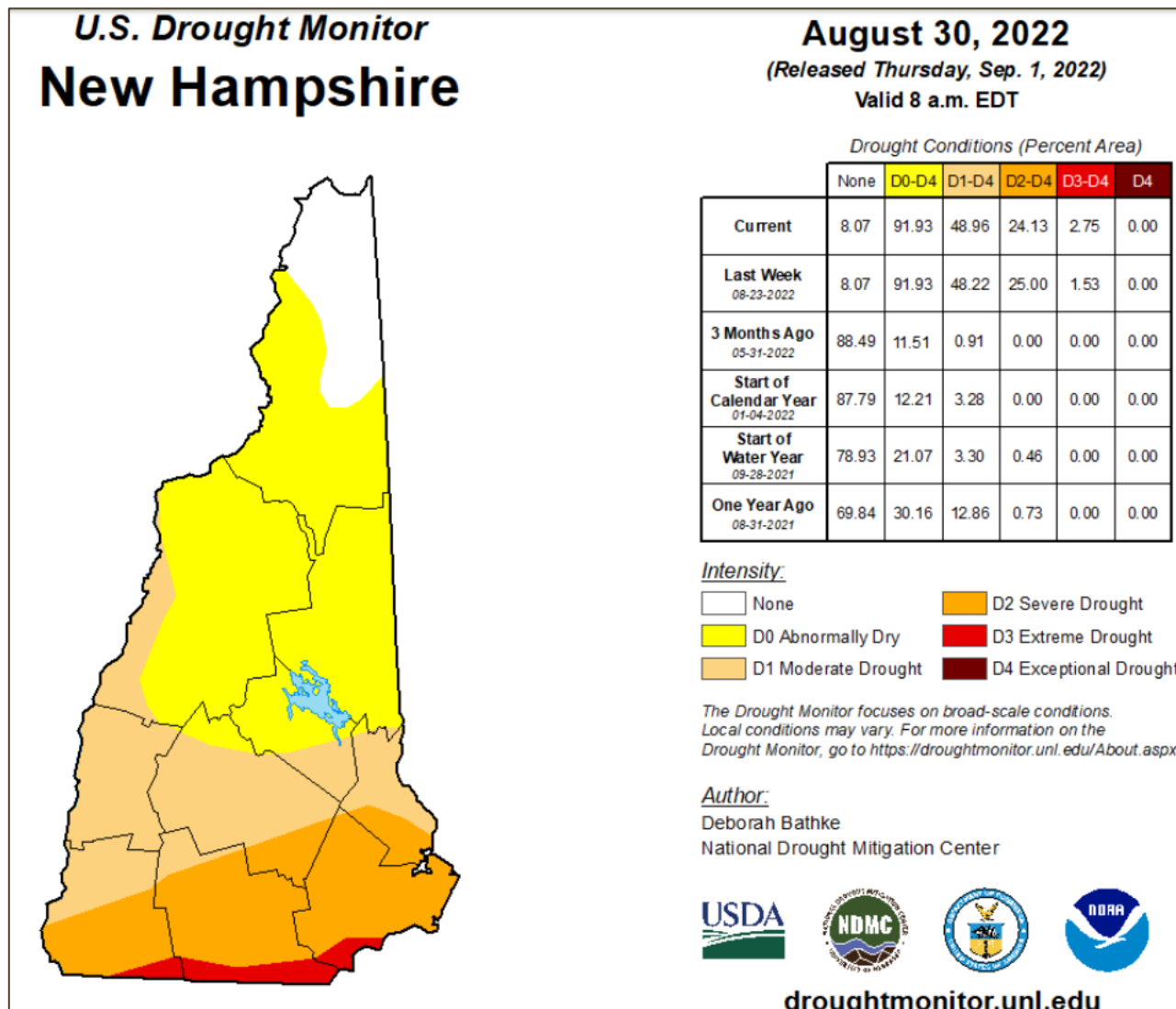
Brian Fuchs  
National Drought Mitigation Center



[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)

## Water Assistance for Natural Disasters (WAND)

- DWGW Advisory Commission approves \$500,000 for WAND February 14, 2022 and recommends permanent funding to legislature, but legislative effort fails.
- DWGW Advisory Commission commits \$750,000 to WAND program bringing total Funds to \$1,250,000 (9/2022) and votes to sunset June 30 2023.
- Stats
  - Approved 52 out of 68 applications
  - Average Cost of Replacement Well - \$25,800
  - Average Cost of Treatment - \$2,226



# Income Limits of EDAP Program 2025



**Table 1 (below).** Income limits for municipalities of Belknap, Carroll, Cheshire, Coos, Grafton, Merrimack, Sullivan, and Hillsborough counties with exceptions listed below for Hillsborough County.

| Household Size | 1        | 2        | 3        | 4         | 5         | 6         |
|----------------|----------|----------|----------|-----------|-----------|-----------|
| Tier 1         | \$44,065 | \$50,360 | \$56,655 | \$62,950  | \$67,986  | \$73,022  |
| Tier 2         | \$70,504 | \$80,576 | \$90,648 | \$100,720 | \$108,778 | \$116,835 |

State MHI for 2025 -  
\$126,000 (family of 4)

State MHI or HUD  
District, whichever is  
higher

**Table 6 (below).** Income limits for Rockingham County municipalities located in the Lawrence, MA-NH HUD district include Atkinson, Chester, Danville, Derry, Fremont, Hampstead, Kingston, Newton, Plaistow, Raymond, Salem, Sandown, Windham.

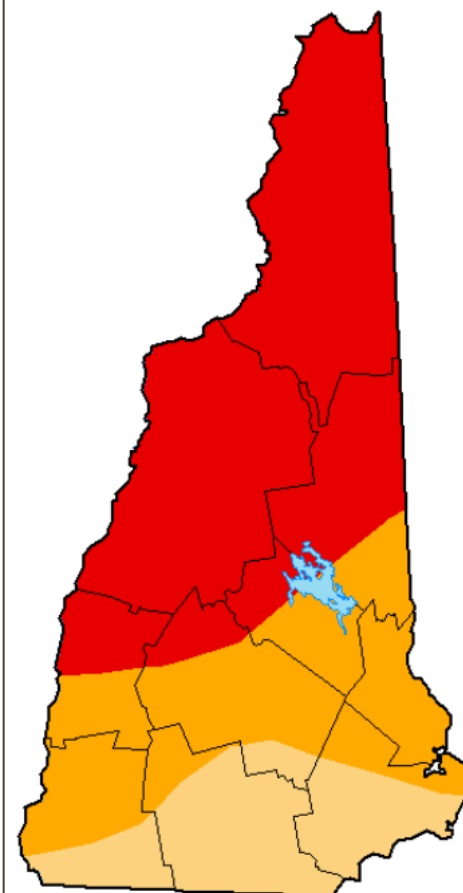
| Household Size | 1        | 2        | 3         | 4         | 5         | 6         |
|----------------|----------|----------|-----------|-----------|-----------|-----------|
| Tier 1         | \$49,455 | \$56,520 | \$63,585  | \$70,650  | \$76,302  | \$81,954  |
| Tier 2         | \$79,128 | \$90,432 | \$101,736 | \$113,040 | \$122,083 | \$131,126 |

**Note:** Household size is determined by the number of people living in the household. Income of children under the age of 18 is not included in total household income. **Tier 1** = 100% if income limit listed by household size and county/town HUD district is less than value shown. **Tier 2** = 50% if income limit listed by household size and county/town HUD district is less than value shown.

## Emergency Drought Assistance Program (EDAP)v2

- EDAP is re-established by DWGW in November 2025 with \$1,500,000 million providing \$1,800,000 in total (\$300,000 left over from WAND)
- Program begins January 2026 and closes 4 months later to demand and lack of funds
- Statistics (only 18 completed project so far)
  - Approved 59 projects out of 90 applications
  - Average Cost of Replacement Well - \$24,808
  - Average Cost of Treatment - \$6,454 (likely skewed due to low number of projects)

### U.S. Drought Monitor New Hampshire



**October 14, 2025**

(Released Thursday, Oct. 16, 2025)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

|                                                            | None  | D0-D4  | D1-D4  | D2-D4 | D3-D4 | D4   |
|------------------------------------------------------------|-------|--------|--------|-------|-------|------|
| <b>Current</b>                                             | 0.00  | 100.00 | 100.00 | 82.68 | 53.50 | 0.00 |
| <b>Last Week</b><br><small>10-07-2025</small>              | 0.00  | 100.00 | 100.00 | 82.68 | 52.73 | 0.00 |
| <b>3 Months Ago</b><br><small>07-15-2025</small>           | 92.74 | 7.26   | 0.00   | 0.00  | 0.00  | 0.00 |
| <b>Start of Calendar Year</b><br><small>01-07-2025</small> | 0.00  | 100.00 | 66.16  | 0.00  | 0.00  | 0.00 |
| <b>Start of Water Year</b><br><small>10-01-2024</small>    | 46.87 | 53.13  | 8.35   | 0.00  | 0.00  | 0.00 |
| <b>One Year Ago</b><br><small>10-15-2024</small>           | 46.49 | 53.51  | 10.08  | 0.00  | 0.00  | 0.00 |

#### Intensity:

|                     |                        |
|---------------------|------------------------|
| None                | D2 Severe Drought      |
| D0 Abnormally Dry   | D3 Extreme Drought     |
| D1 Moderate Drought | D4 Exceptional Drought |

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

#### Author:

Richard Tinker  
CPC/NOAA/NWS/NCEP



[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)

## Drought Assistance Program Sites 2020 - 2026

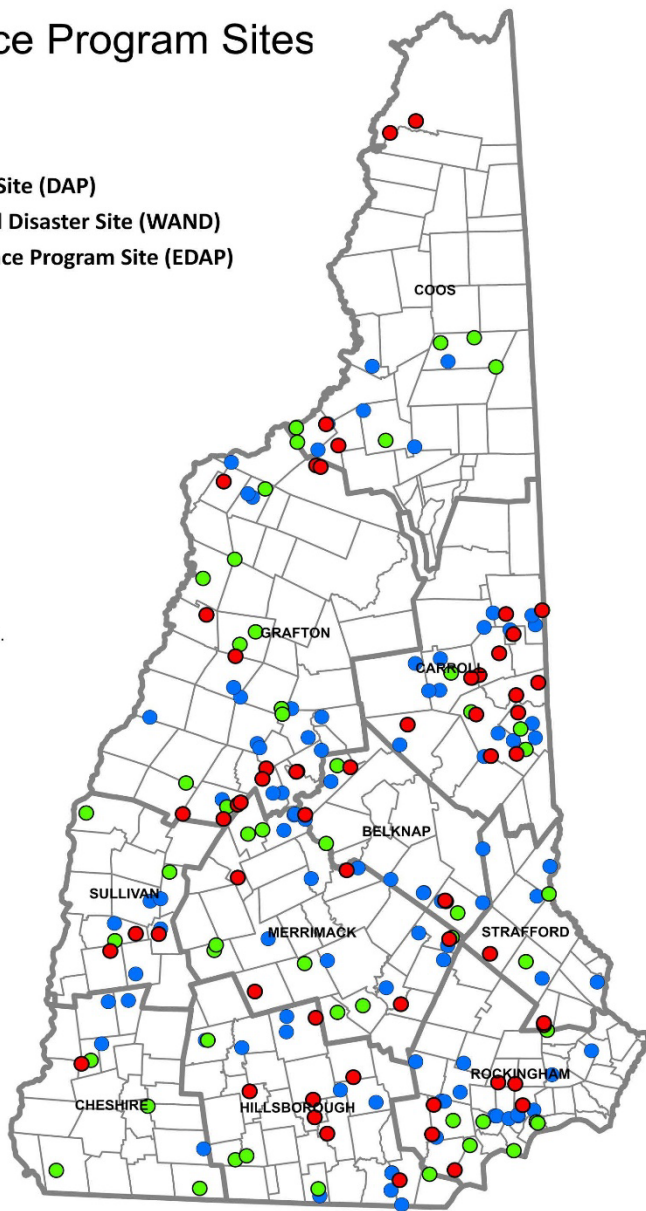
### Legend

- Drought Assistance Program Site (DAP)
- Water Assistance for Natural Disaster Site (WAND)
- Emergency Drought Assistance Program Site (EDAP)
- ▬ County Boundary
- ▬ Town Boundary

0 5 10 20  
Miles



Disclaimer: The status of water well construction records and types are based on information submitted to the New Hampshire Water Well Board and may not be comprehensive.



# Drought Assistance Program Summary



## Statistics

- Total Funding - \$4,250,000
- Applications - 283
- Approvals - 225
- Average Cost of Replacement Well - \$15,800 - \$25,800
- Average Cost of Treatment - \$2,800 - \$6,454
- Projects Completed to date – 182



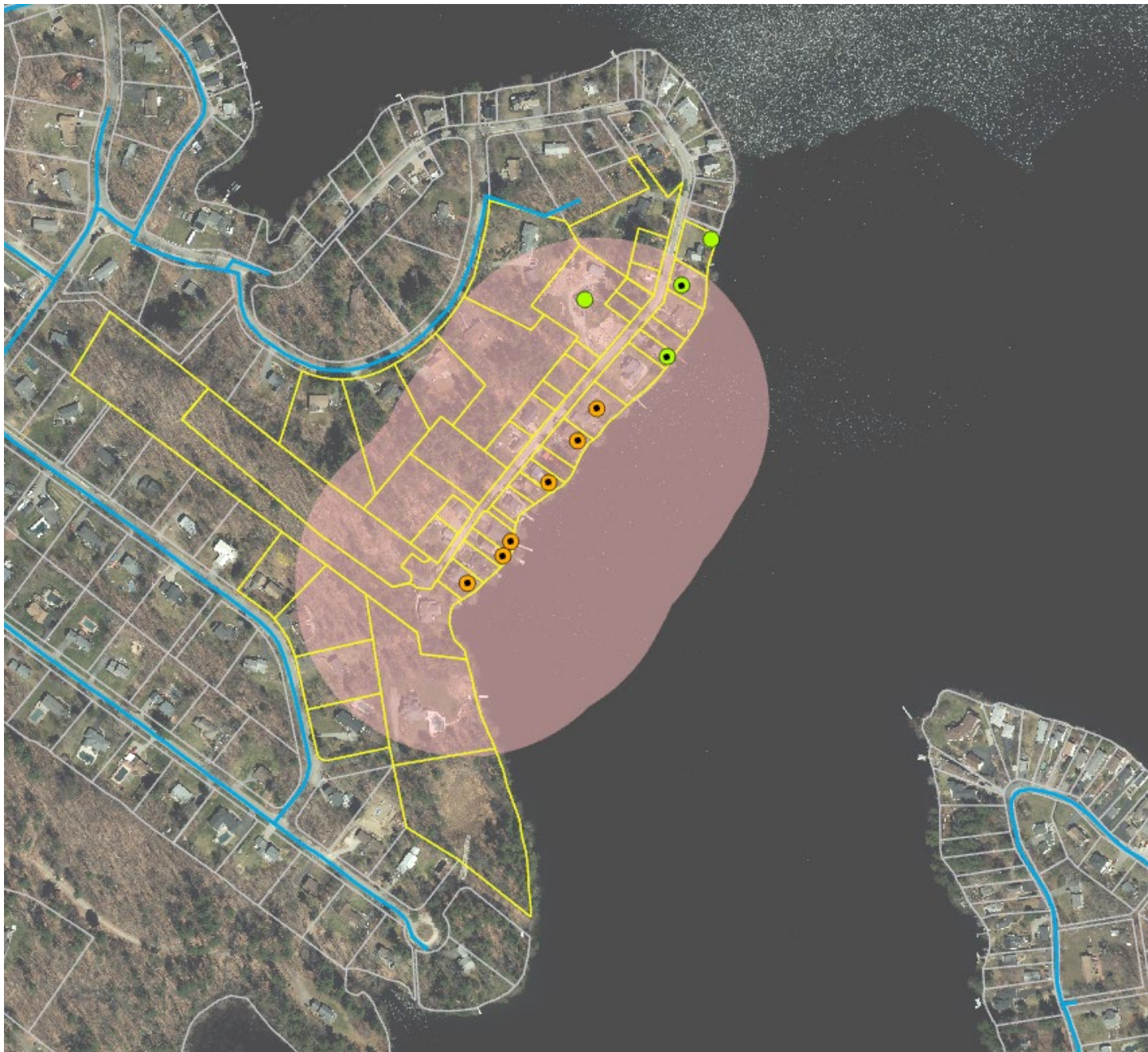
# Drinking Water Quality Program

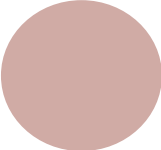
Derek Bennett  
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603-271-8520  
[Derek.S.Bennett@des.nh.gov](mailto:Derek.S.Bennett@des.nh.gov)



## 485-C:14-b Notification of Groundwater Contamination Required

- Upon the discovery of GW contamination DES shall provide notification to:
  - Property owners within 500'
  - Public water suppliers
  - The local health officer
- Notification shall be made in writing within 45 days of discovery



 500' Buffer

 Public Water

● PFAS > Federal MCL

● PFAS > AGQS

● PFAS < AGQS

 Properties to Notify

<https://tinyurl.com/PFAS-Sample-Request>



Home Find ▾ ? Sign In [Create Account](#)

**PFAS Testing for Private Wells Request Form** ? ⚙

Submission HQR-7B6C-GPVYT Revision 1 Form Version 1.4

Last saved 4 minutes ago [SAVE PROGRESS](#)

● Contact Information

○ Property Water Sources

○ Review

○ Certify & Submit

\* Did you receive a notification informing you of nearby contamination?

☐ Yes

☐ No

Do you own or rent the property?

\*

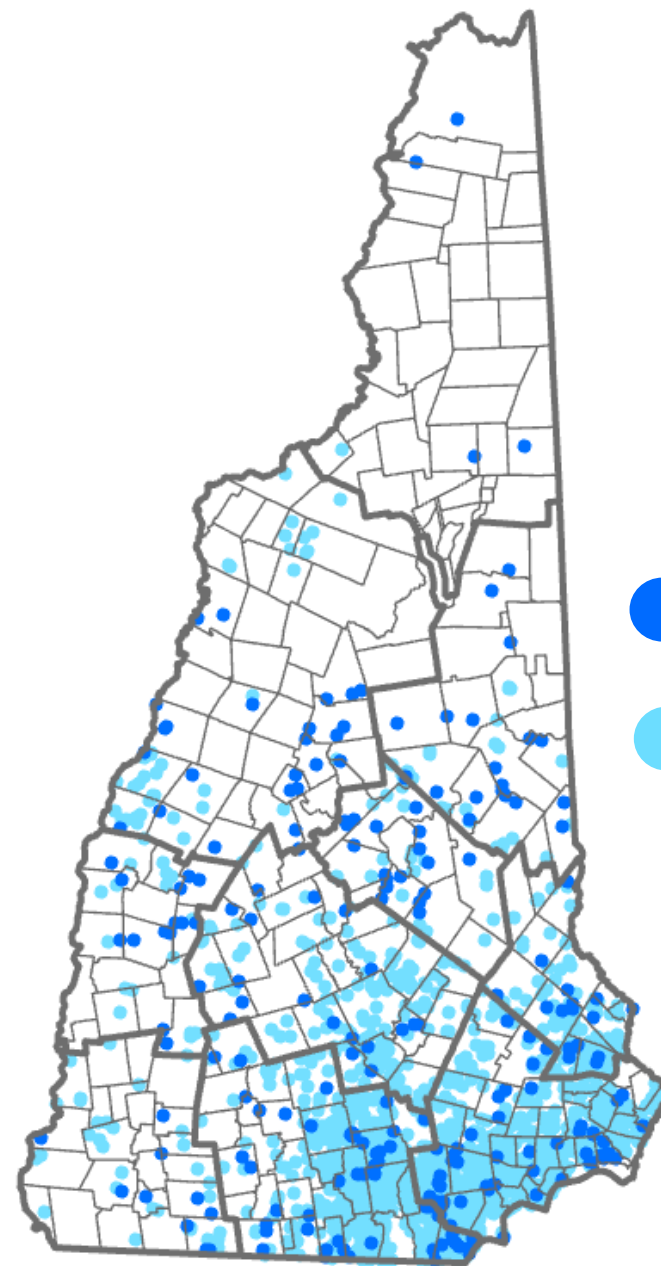
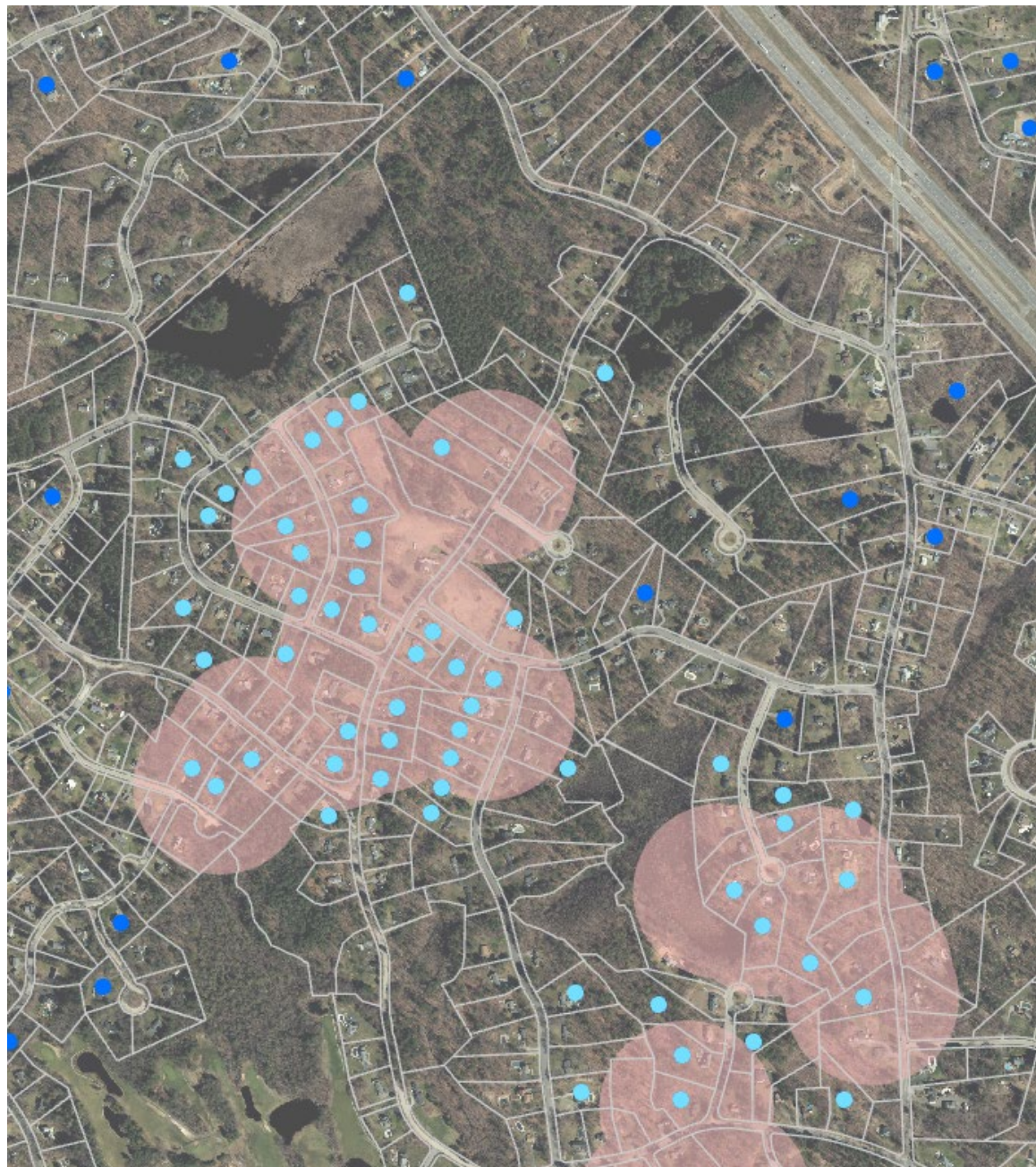
Contact Information

\*  \*

\*  \*

\*





- Requested (296)
- Complete (10,044)

# Water Quality Sampling

- PFAS Analysis (Method 533)
  - 25 Compounds
- Standard Analysis
  - Arsenic, Chloride, Copper, Fluoride, Iron, Lead, Manganese, Nitrate, Nitrite, Radon, Sodium, Uranium
- Other Analytes
  - Radon, Lithium

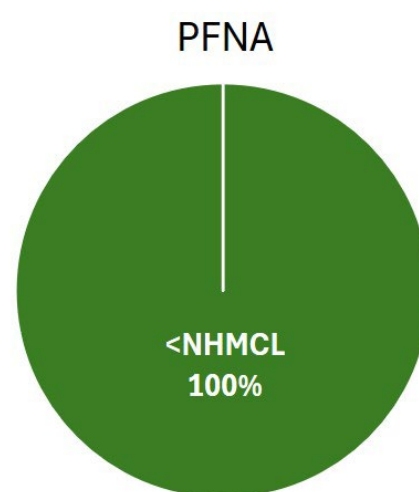
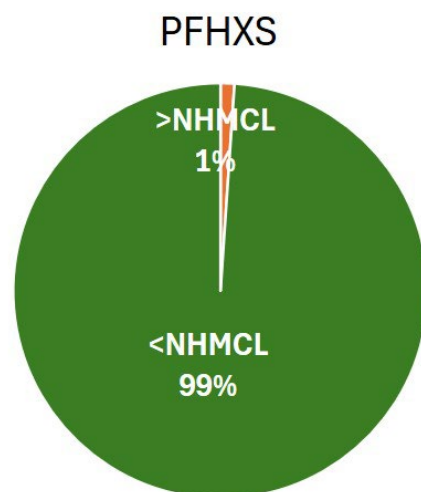
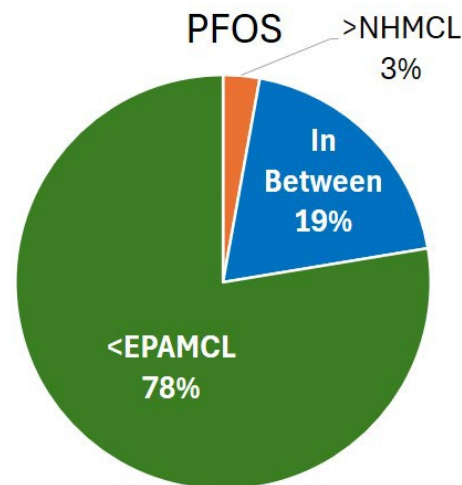
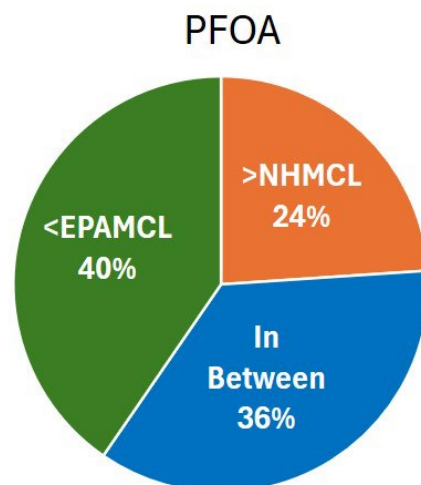




NEW HAMPSHIRE  
DEPARTMENT OF  
**Environmental  
Services**



# PFAS Results N = 2042



## PERCENT OF SAMPLES WITH DETECTIONS

|            |       |
|------------|-------|
| PFOA       | 84.5% |
| PFBS       | 76.8% |
| PFBA       | 74.4% |
| PFHXA      | 71.9% |
| PFPEA      | 69.9% |
| PFOS       | 69.2% |
| PFHXS      | 63.0% |
| PFHPA      | 62.7% |
| PFNA       | 14.8% |
| PFPEs      | 7.0%  |
| FTSA62     | 5.0%  |
| PFDA       | 2.6%  |
| FTSA42     | 1.5%  |
| PFHPS      | 1.5%  |
| F53B_MINOR | 0.7%  |

# Naturally Occurring Contaminants



| Contaminant      | Count of Results | Health Limit  | % Exceeding  | Health Goal  | % Exceeding  |
|------------------|------------------|---------------|--------------|--------------|--------------|
| <b>Arsenic</b>   | 2033             | 0.005 mg/L    | <b>27.3%</b> | 0 mg/L       | <b>54.1%</b> |
| Chloride         | 2033             |               |              |              |              |
| Copper           | 2033             | 1.3 mg/L      | 0.1%         | 1.3 mg/L     | 0.1%         |
| Fluoride         | 2033             | 4 mg/L        | 0.1%         | 4 mg/L       | 0.1%         |
| Iron             | 2033             |               |              |              |              |
| Lead             | 2033             | 0.015 mg/L    | 0.5%         |              |              |
| <b>Lithium*</b>  | 151              |               |              |              |              |
| <b>Manganese</b> | 2033             | 0.3 mg/L      | <b>10.4%</b> |              |              |
| Nitrate          | 2271             | 10 mg/L       | 2.1%         | 10 mg/L      | 2.1%         |
| Nitrite          | 2271             | 1 mg/L        | 0.0%         | 1 mg/L       | 0.0%         |
| <b>Radon*</b>    | 2020             | 10,000 pCi/L* | <b>20.2%</b> | 4,000 pCi/L* | <b>39.1%</b> |
| Sodium           | 2033             |               |              |              |              |
| <b>Uranium</b>   | 2052             | 0.03 mg/L     | <b>8.2%</b>  | 0 mg/L       | <b>68.9%</b> |

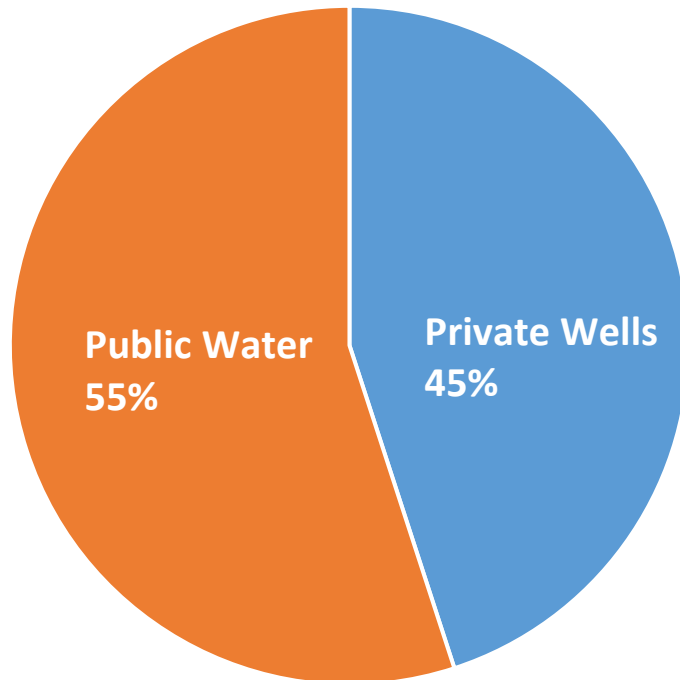


# Importance of private well testing

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## NH Residents' Water Source



### Why does this matter?

- Water contaminants—man-made and naturally occurring—are common
- Public Water Systems are required to test and remove contaminants
- Private well owners are often unaware of the likelihood of contamination and face barriers to testing and treatment

# Drinking Water Contaminants



**Human-caused  
contaminants from  
pollution  
(PFAS & MtBE)**

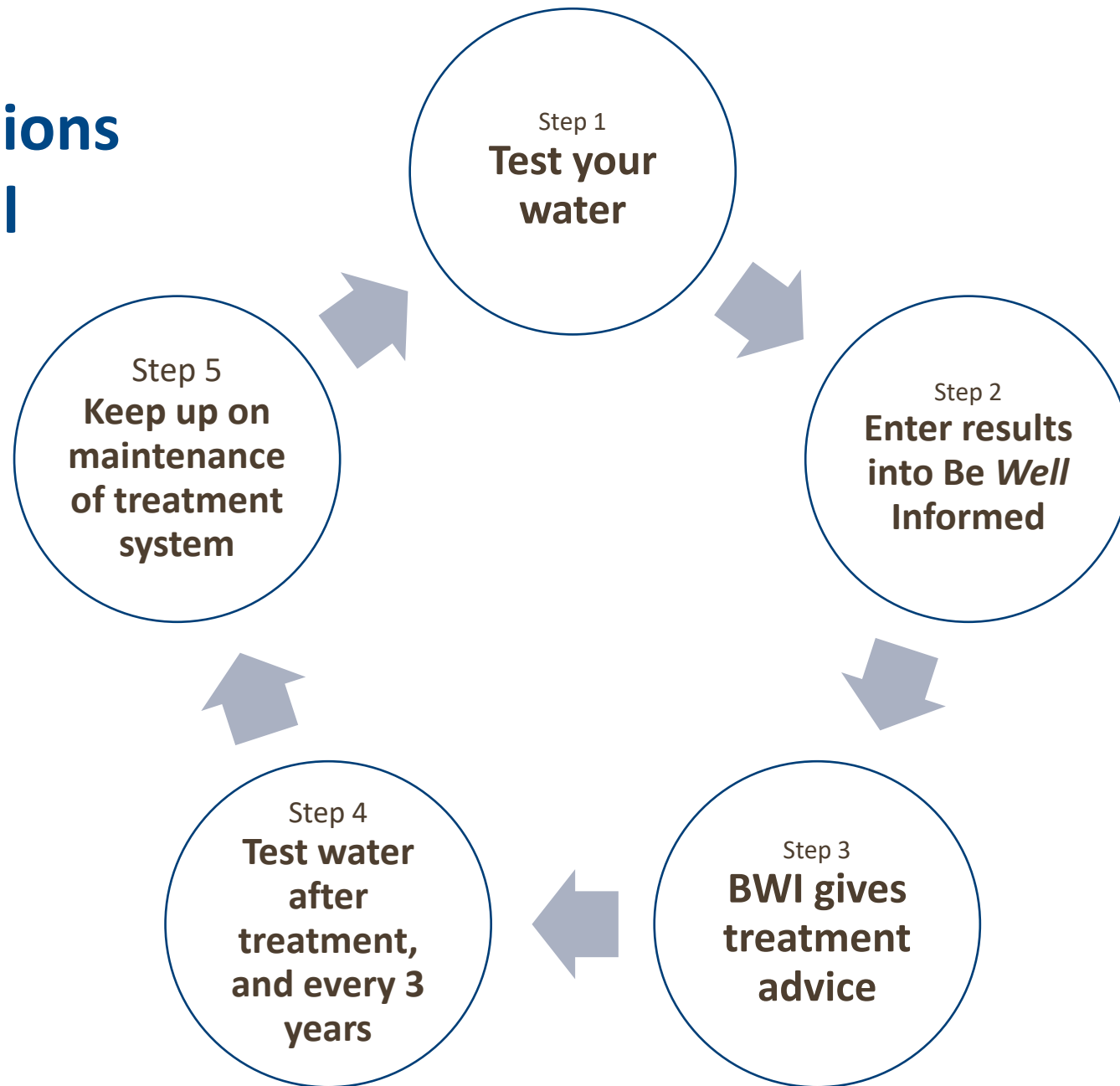


**Human-caused  
contaminants from  
plumbing  
(Lead & Copper)**



**Natural contaminants  
from geology  
(Arsenic, Uranium,  
Radon)**

# Recommendations for private well owners



# What & When to Test



- |             |           |
|-------------|-----------|
| ✓ Arsenic   | ✓ Nitrate |
| ✓ Bacteria* | ✓ Nitrite |
| ✓ Chloride  | ✓ pH      |
| ✓ Copper    | ✓ Radon   |
| ✓ Fluoride  | ✓ Sodium  |
| ✓ Hardness  | ✓ Uranium |
| ✓ Iron      | ✓ PFAS    |
| ✓ Lead      |           |
| ✓ Manganese |           |

**Every 3-5 years. \*Annually for bacteria or after any compromising event.**

**After installation of a treatment system.**

**When buying or selling a home.**

**If the taste, color or smell of the water changes.**

Draft - Testing Version

PUBLIC GOVERNMENT BUSINESS ABOUT US

# NH DES's Be Well Informed Guide

PROTECT YOUR FAMILY'S HEALTH AND HOME

INFORMATION AND GUIDANCE FOR  
TREATING YOUR WELL WATER



The **Be Well Informed** Guide from NH DES is designed to help you understand your water test results and, if your well water has commonly found pollutants in it, provide information about health concerns and water treatment choices. New Hampshire is fortunate to have an abundance of clean groundwater, and nearly half of New Hampshire's residents (over 500,000 people) rely solely upon domestic wells (also called "private wells") as their primary source of drinking water. While many private wells provide safe drinking water, certain pollutants like arsenic, iron and manganese are sometimes present in groundwater at levels that can affect your health and home.

NH DES recommends private well owners test their well water every three to five years for pollutants commonly found in New Hampshire's groundwater. This group of commonly found pollutants is listed in NH DES's Private Well Brochure and is referred to as the "**Standard Analysis**." The Be Well Informed Guide evaluates the pollutants that are part of the Standard Analysis. NH DES recommends that you have your water tested at a **NH ELAP accredited laboratory**. When you have your water tested, your test results will be summarized in the form of a **lab report**.

With your water test results in hand, click the button below to enter your test results from your laboratory report. You will receive an evaluation of your well water quality and, if necessary, water treatment options.

Read This Disclaimer Before Proceeding

Information provided on this website is for informational purposes only and should not be substituted for direct consultation with a qualified water treatment professional. Other conditions or factors related to your well or home not considered by this online guide may determine the most appropriate water treatment option.

Enter Your Well Water Test Results

DES Private Well Brochure

Accredited Labs in NH

NH DES Private Well Testing Program

Questions or Comments

(603) 271-2513  
dwginfo@des.nh.gov

## NHDES Be Well Informed Web Tool

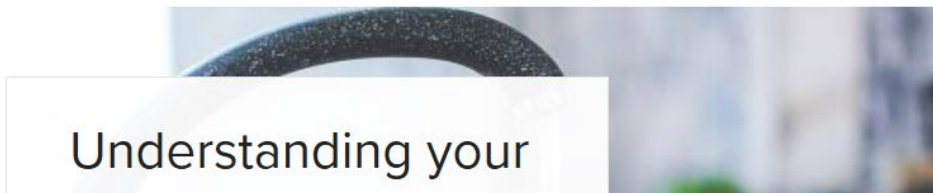
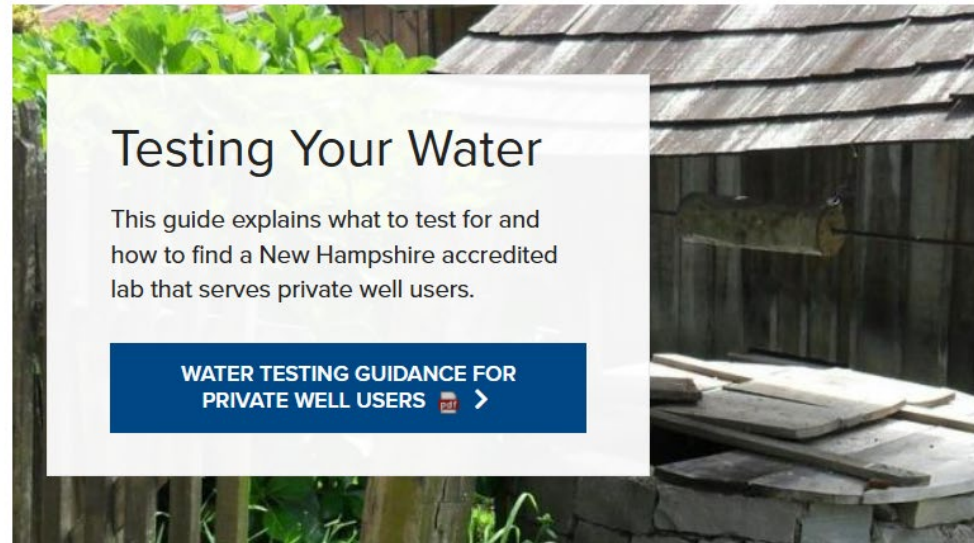
<https://www4.des.state.nh.us/DWITool/Welcome.aspx>

Or type 'NHDES Be Well Informed' into a search engine

## Private Wells

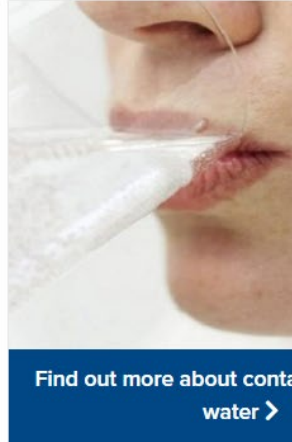
*A private well users guide to ensuring safe drinking water*

Nearly half of New Hampshire residents get their water from a private well. Well water can have substances that can be harmful especially if consumed over a long time. Arsenic and radon occur naturally in the rock and soil, along with manganese and coliform bacteria. Pollutants such as PFAS and MTBE are also present in groundwater. NHDES recommends private well users test their water regularly and install water treatment if needed.



# NHDES Private Well webpage:

- [Private Wells | NH Department of Environmental Services](#)



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Phone: (603) 271-5986



## Community Private Well Testing Initiatives

- Started in 2022
- Covered 30 towns so far
- Served 1,630 households so far
- Contaminants most often found above health limits:

**ARSENIC**

**RADON**

**LEAD**

**COLIFORM BACTERIA**

# KUDOS and THANK YOU to the funders & contributors to the 3 private well programs we described:



## Funding provided by:

- US EPA: Emerging Contaminants in Small and Disadvantaged Communities
- NH Drinking Water & Groundwater Trust Fund



NEW HAMPSHIRE DRINKING WATER  
& GROUNDWATER TRUST FUND

## Some key contributors (in addition to today's speakers):

- Lucio Barinelli, NHDHHS
- Kim Aviado, NHDES
- Marysa Boire, NHDES
- Brandon Kernan, NHDES
- Stephen Roy, NHDES
- Cheryl Bondi, NHDES
- Greg Barker, NHDES (former)
- Erin Holmes, NHDES (former)