Vermont State Legislature
Senate Committee on Natural Resources & Energy
Testimony on the 2024-2026 droughts

20 March 2026

Dr. Lesley-Ann L. Dupigny-Giroux

Distinguished Professor – Geography & Geosciences, UVM

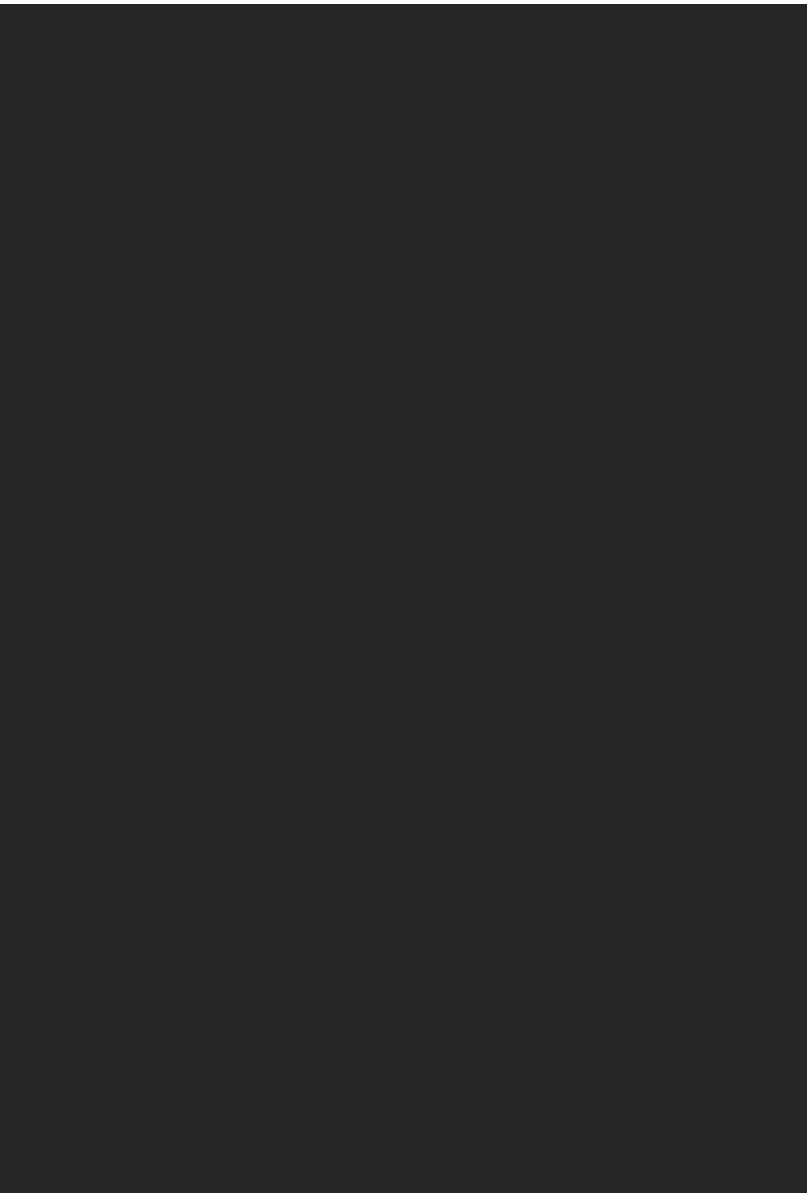
2026 AAAS Mani L. Bhaumik Award for Public Engagement with Science
National Academies –Board on Atmospheric Sciences & Climate
Past President – American Association of State Climatologists
Lead author – Northeast chapter – Fourth National Climate Assessment

Vermont Climate Council – House Appointee with expertise in climate change science
Fellow – Vermont Academy of Science & Engineering; Vermont Academy of Arts & Sciences

Fellow – American Meteorological Society; American Association of Geographers

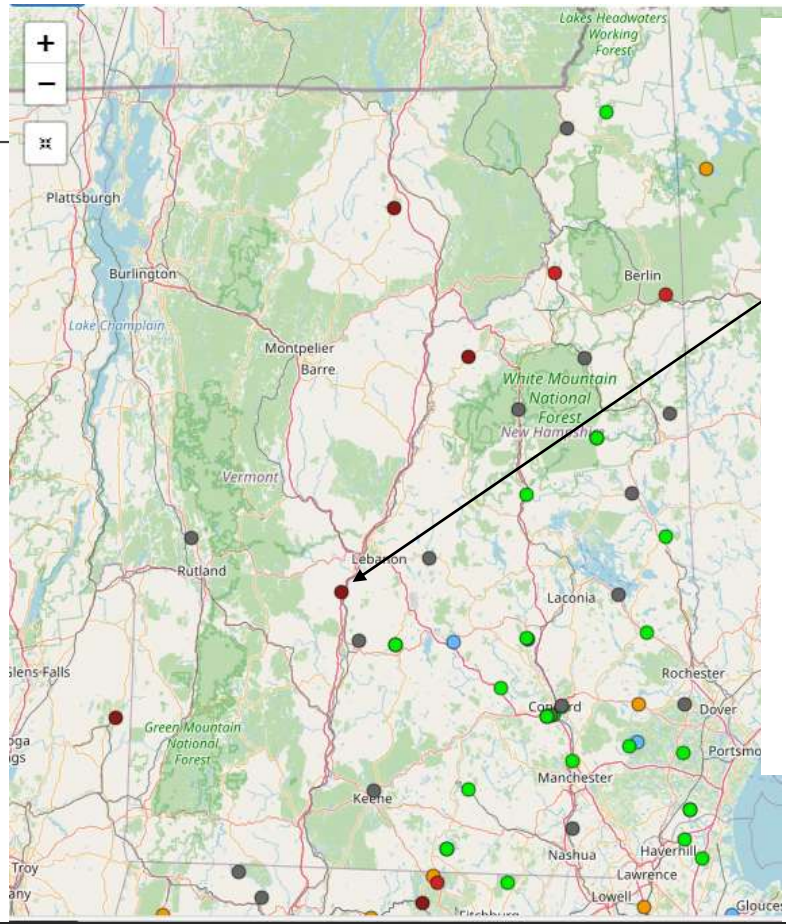
Fellow – Gund Institute of Environment

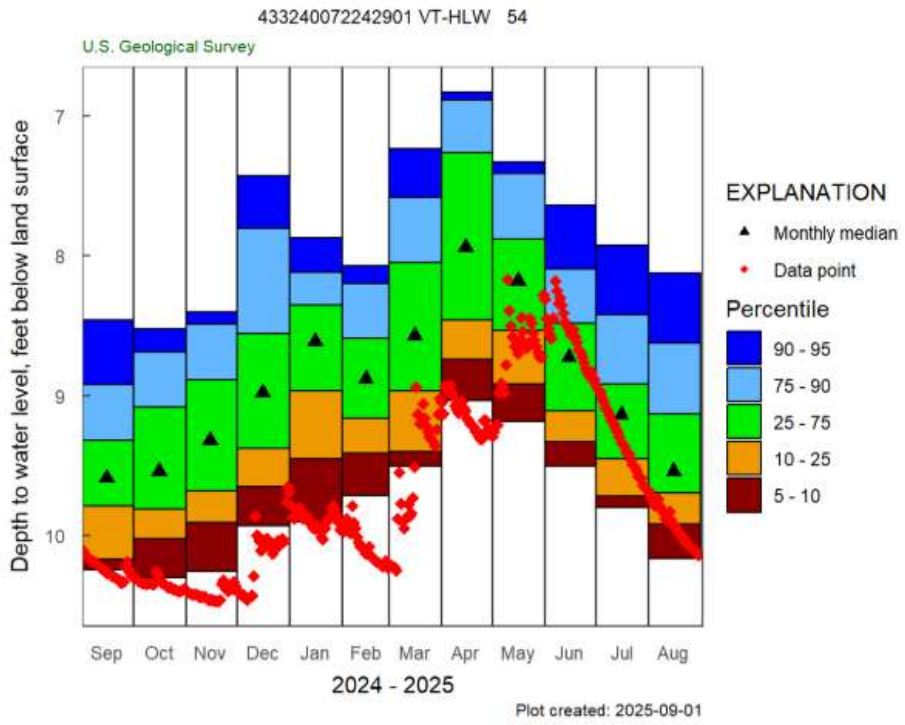
Vermont State Climatologist



The severe droughts of the summer of 2025 actually began in 2024

Groundwater Levels in Vermont





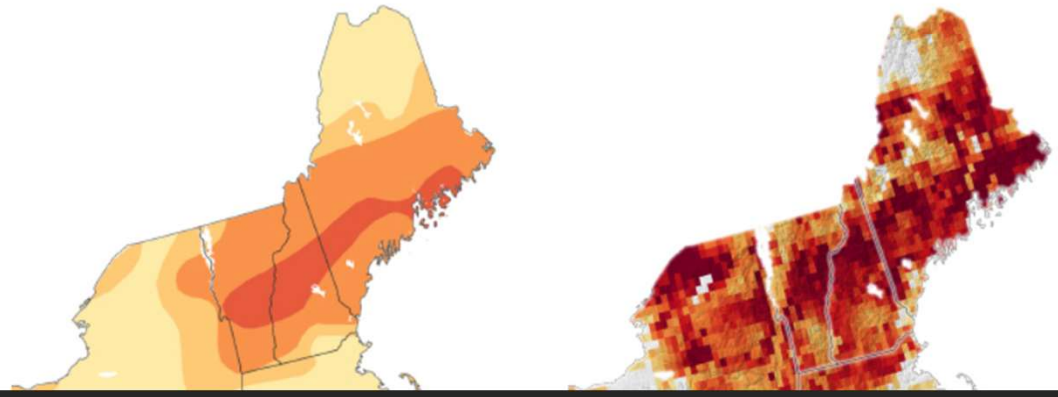
Period of record: 1969 to 2025

USGS

https://newengland.water.usgs.gov/web_app/GWW/GWW.html

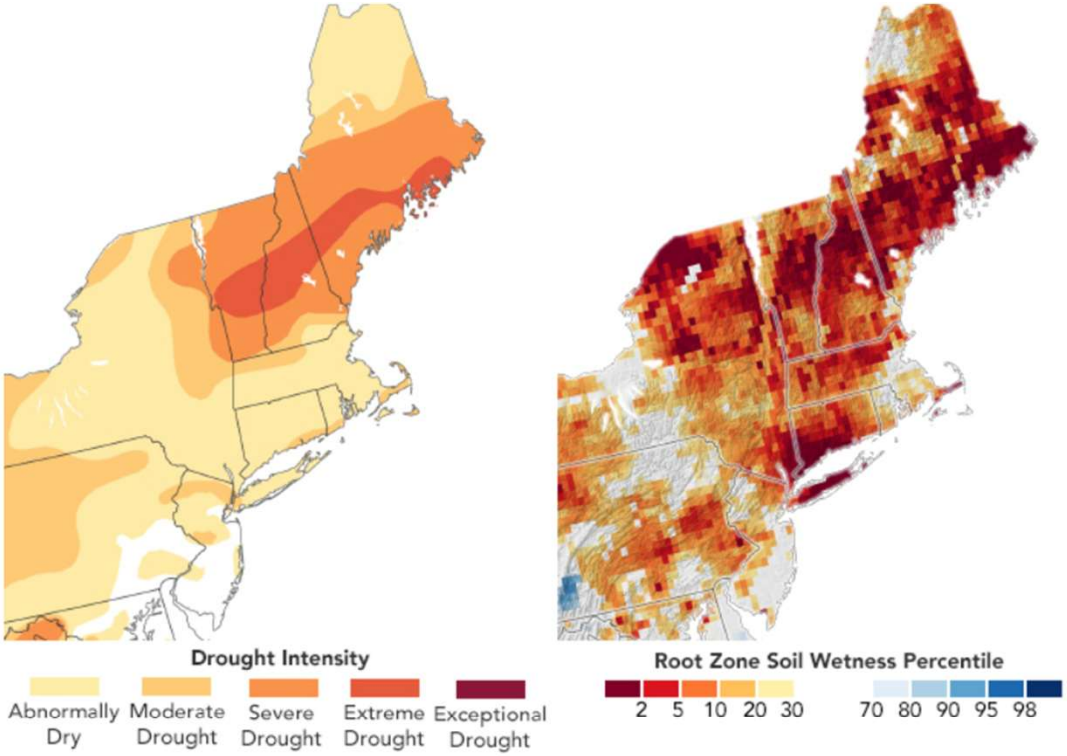
THE 2025 DROUGHTS WERE HISTORIC

Drought Worsens Across Northern New England



View this area in EO Explorer

In late September 2025, a continued lack of rainfall led to stunted



September 23, 2025

September 23, 2025 JPEG

September 23, 2025 JPEG

In mid- to late September 2025, drought conditions across the United States were mixed, with some areas seeing improvement while others worsened. The Northeast was one such place where conditions deteriorated amid persistently dry weather.

View this area in EO Explorer

In late September 2025, a continued lack of rainfall led to stunted vegetation, lowered water levels, and prompted early fall foliage.

Image of the Day for September 27, 2025

Instruments:
GRACE-FO
In situ Measurement

Image of the Day | Heat | Remote Sensing | Temperature Extremes

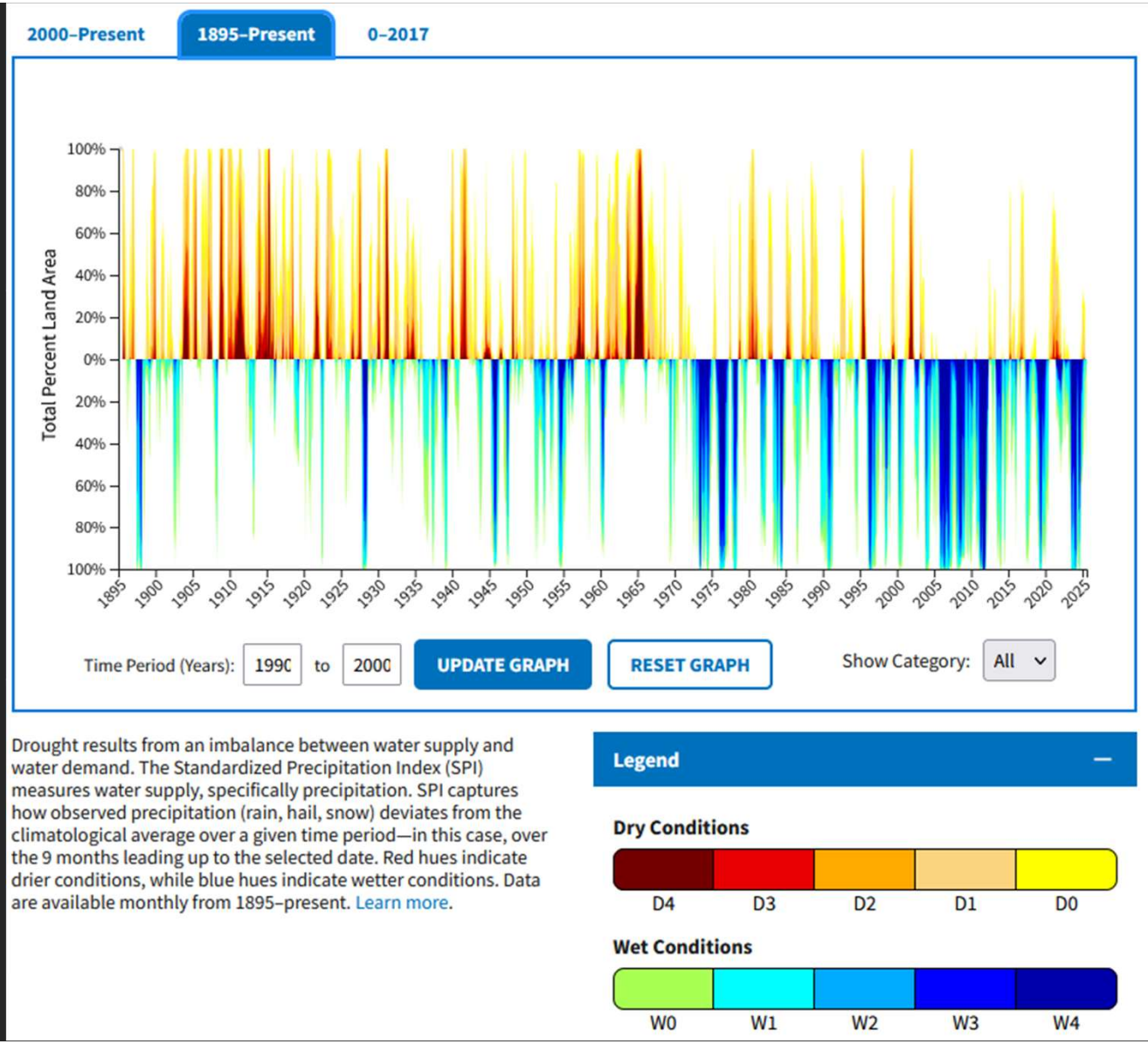
View more Images of the Day:

Did you find w

https://www.earthobservatory.nasa.gov/images/154833/drought-worsens-across-northern-new-england

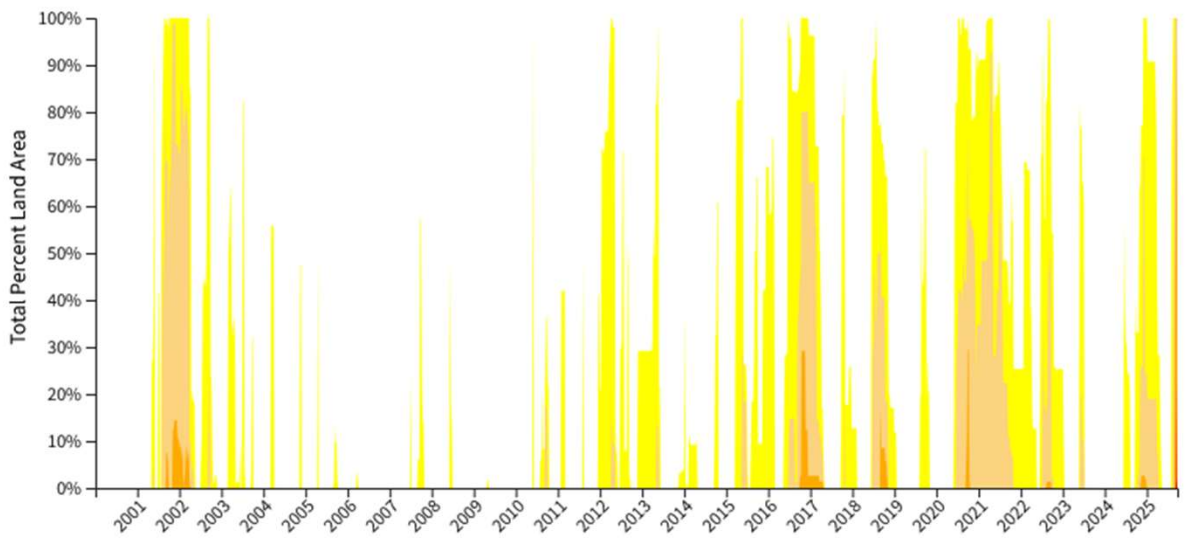
DROUGHTS HAVE & WILL CONTINUE TO OCCUR IN VERMONT

Droughts in Vermont - 1895 to present



https://www.drought.gov/states/vermont

2000–Present | 1895–Present | 0–2017



Time Period (Years): 2000 to 2025 UPDATE GRAPH RESET GRAPH Show Category: All

The U.S. Drought Monitor (2000–present) depicts the location and intensity of drought across the country. Every Thursday, authors from NOAA, USDA, and the National Drought Mitigation Center produce a new map based on their assessments of the best available data and input from local observers. The map uses five categories: Abnormally Dry (D0), showing areas that may be going into or are coming out of drought, and four levels of drought (D1–D4). Learn more.

LATEST AVAILABLE DATA: 2025-09-23

Legend —

U.S. Drought Monitor

https://www.drought.gov/states/vermont

Category	Examples of historically observed impacts
D0	Crop growth is stunted; planting is delayed
	Fire danger is elevated; spring fire season starts early
	Lawns brown early; gardens begin to wilt
	Surface water levels decline
D1	Honey production declines
	Irrigation use increases; hay and grain yields are lower than normal
	Trees and landscaping are stressed; fish are stressed
	Voluntary water conservation is requested; reservoir and lake levels are below normal capacity
	Wildfires and ground fires increase
D2	Fish kills occur; wildlife move to farms for food
	Golf courses conserve water
	Producers begin feeding cattle; hay prices are high
	Specialty crops are impacted in both yield and fruit size
	Trees are brittle and susceptible to insects
	Warnings are issued on outdoor burns; air quality is poor
	Water quality is poor; groundwater is declining; irrigation ponds are dry; outdoor water restrictions are implemented
D3	Crop loss is widespread; Christmas tree farms are stressed; dairy farmers are struggling financially
	Extremely reduced flow to ceased flow of water is observed; river temperatures are warm; wells are running dry; people are digging more and deeper wells
	Water recreation and hunting are modified; wildlife disease outbreak is observed
	Well drillers and bulk water haulers see increased business

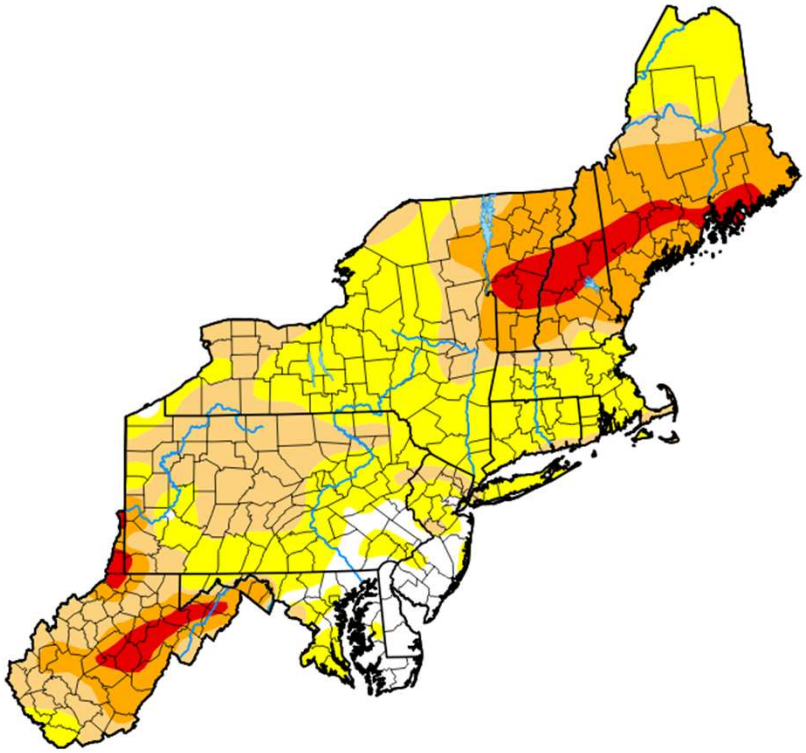
https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?VT

U.S. Drought Monitor

Current | Maps | Data | Summary | About | Conditions & Outlooks | Ag in Drought | En Español | NADM

Northeast

Home / Northeast



Map released: Thurs. September 25, 2025

Data valid: September 23, 2025 at 8 a.m. EDT

Intensity

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)
- No Data

Authors

United States and Puerto Rico Author(s):

Brad Rippey, U.S. Department of Agriculture

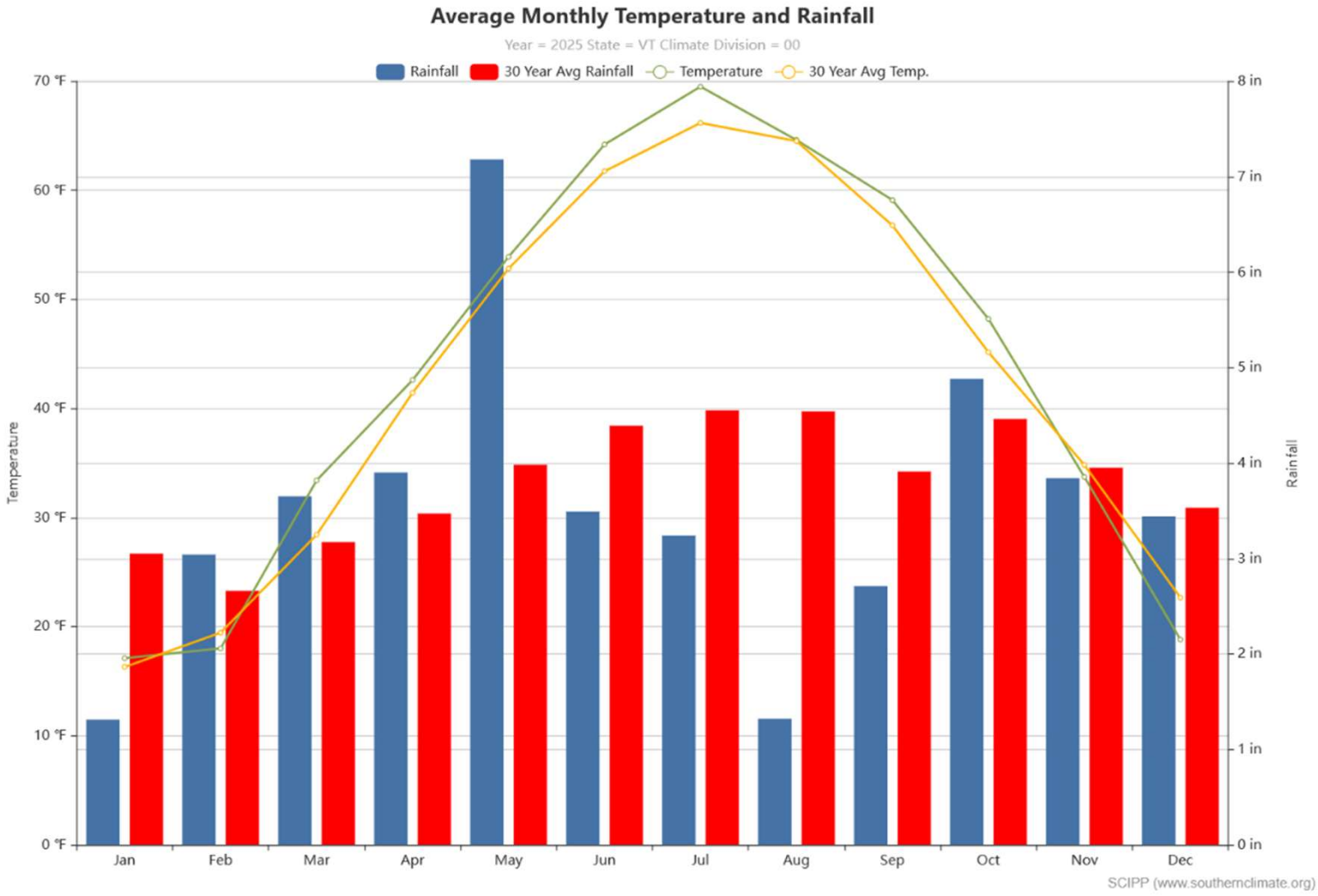
Pacific Islands and Virgin Islands Author(s):

Tsegaye Tadesse, National Drought Mitigation Center

https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?Northeast

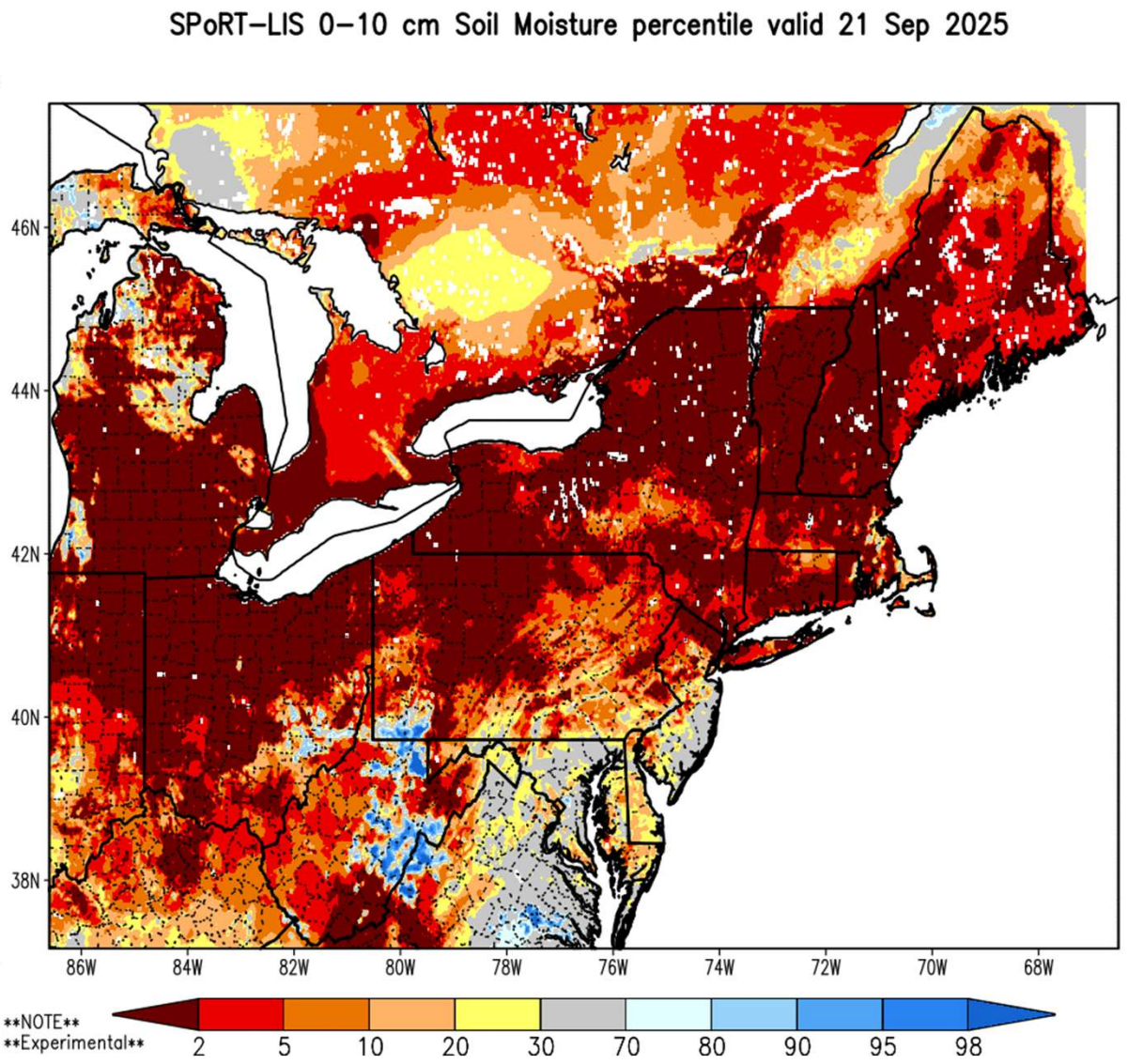
FLASH DROUGHT: RAPID ONSET IN LATE JULY

AUGUST 2025 WAS THE DRIEST AUGUST SINCE 1895 ACROSS VERMONT



https://charts.climate.lsu.edu/mly

SOIL DRYNESS IN THE TOPMOST 3 FEET



Field near Sam Mazza's stand – 5 August 2016

PHOTOS: L-A. DUPIGNY-GIROUX

Champlain Valley
23 August 2025

PHOTOS: L-A. DUPIGNY-GIROUX

Friday, April 18th, 2025

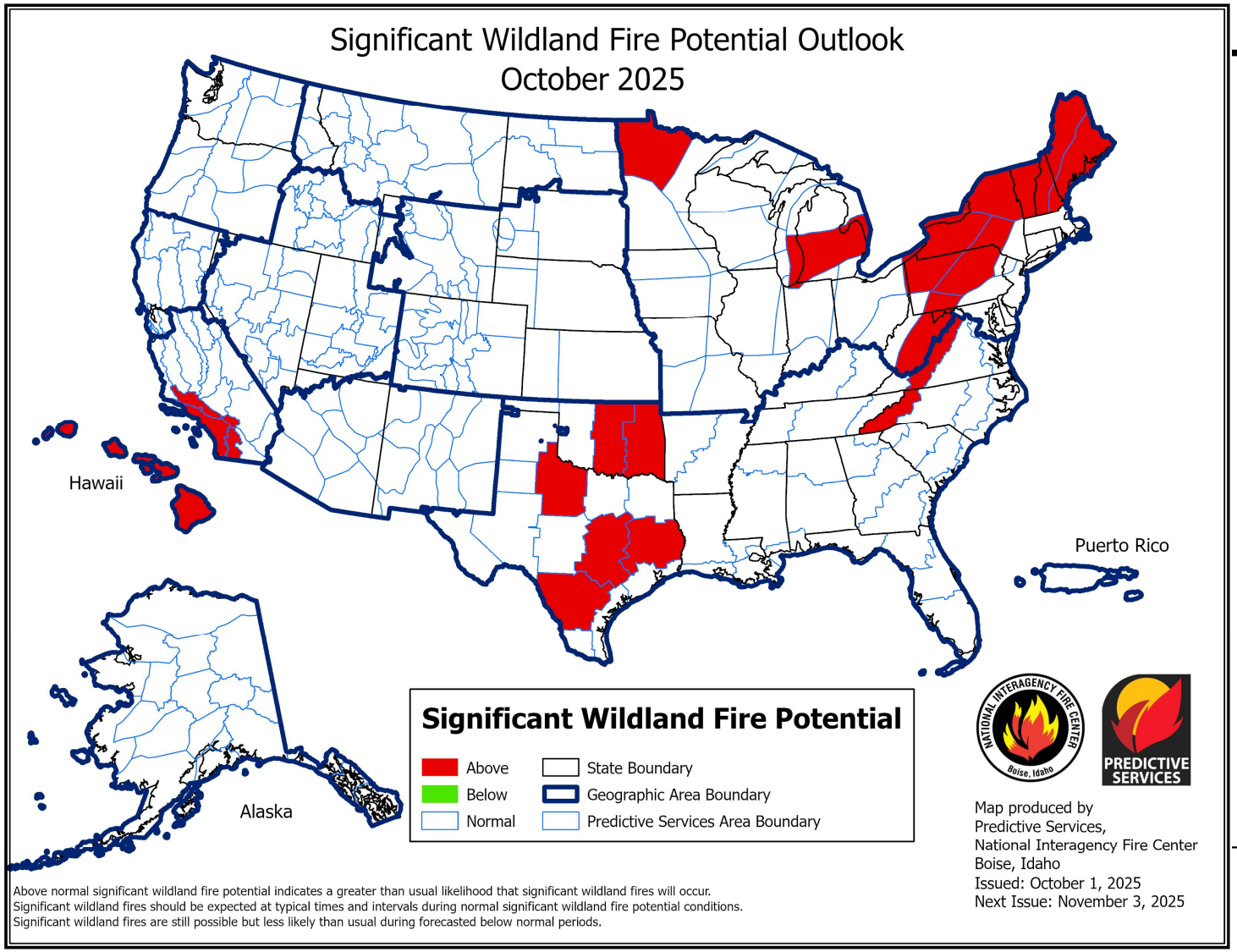
As part of the 2025 Open Burning Weather Awareness Campaign from the NWS in Burlington, VT we will examine Fire Weather Watches and Red Flag Warnings:

- Red Flag conditions develop when the combination of very dry fuels, low relative humidity values, strong winds, and an extended period with little to no precipitation all come together.
- If the potential were to exist for red flag conditions, the NWS issues a Fire Weather Watch 12 to 48 hours in advance of the potential event. A Fire Weather Watch alerts fire and forestry personnel, as well as the public that upcoming weather conditions combined with the very dry fuels could potentially create critical fire weather conditions.
- If Red Flag conditions are expected or occurring, the NWS issues a Red Flag Warning within 24 hours of the expected event to highlight concerns for firefighter and public safety as any fires that did start would likely spread quickly, burn intensely, behave erratically, and be difficult to contain.
- Open burning is strongly discouraged in these situations and you should follow guidance from your state or your local Fire Wardens.

Fire weather forecasts and additional information are always available at weather.gov/btv and weather.gov/btv/firewx

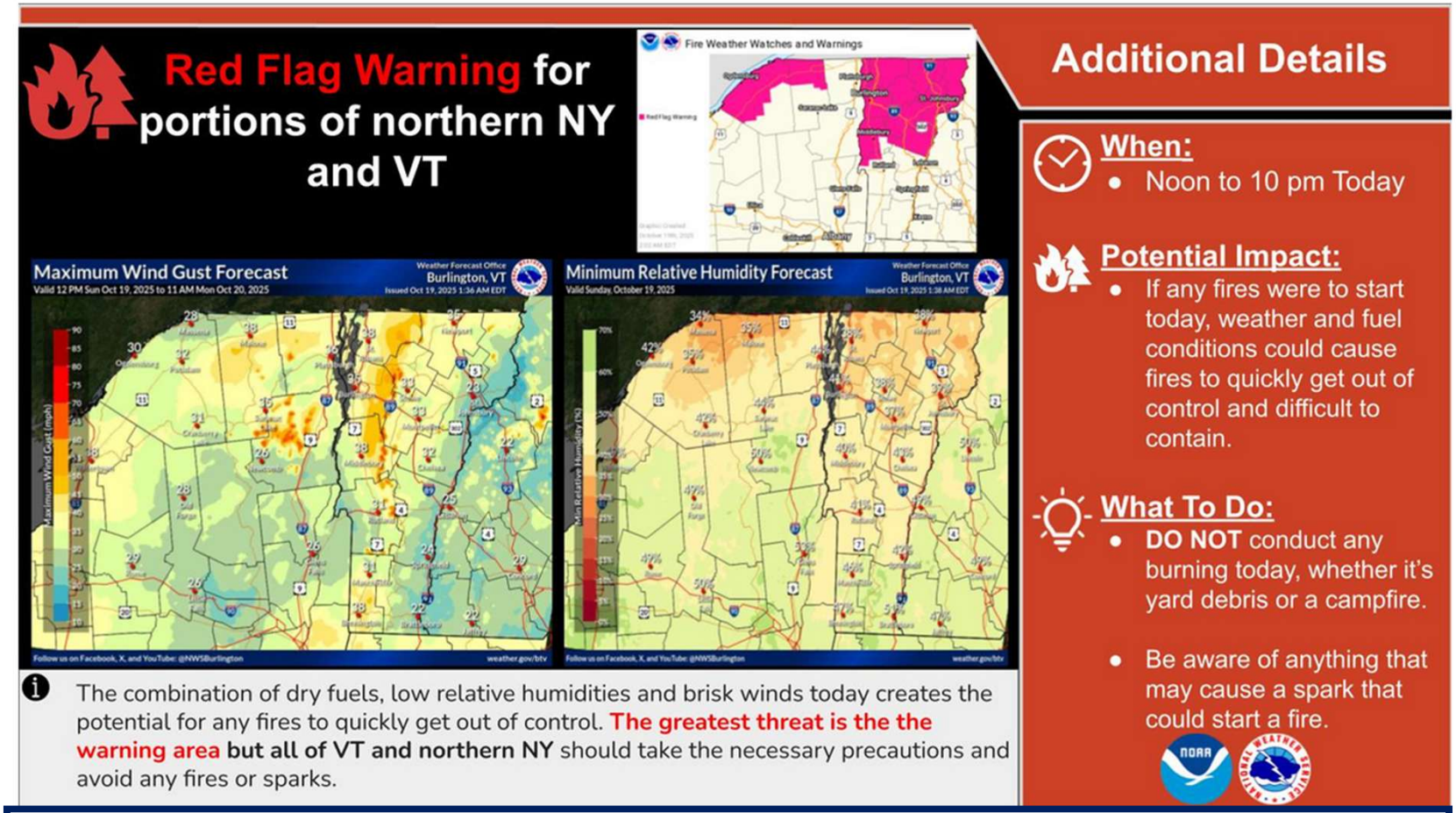
https://www.weather.gov/btv/safetycampaigns

https://www.nifc.gov/nicc-files/predictive/outlooks/month1_outlook.png



Gusty Winds Today and Tonight

Red Flag Warning...Beware of any Burning



The combination of dry fuels, low relative humidity's and brisk winds today creates the potential for any fires to quickly get out of control. The greatest threat is the the warning area but all of VT and northern NY should take the necessary precautions and avoid any fires or sparks.

Red flag day – 12 October 2025

https://www.weather.gov/btv/weatherstory

Wildfire response helicopter staged in Lebanon

By WCAX News Team

Published: Sep. 29, 2025 at 4:18 PM EDT

LEBANON, N.H. (WCAX) - As the drought in our region worsens, officials are upping efforts to keep people safe.

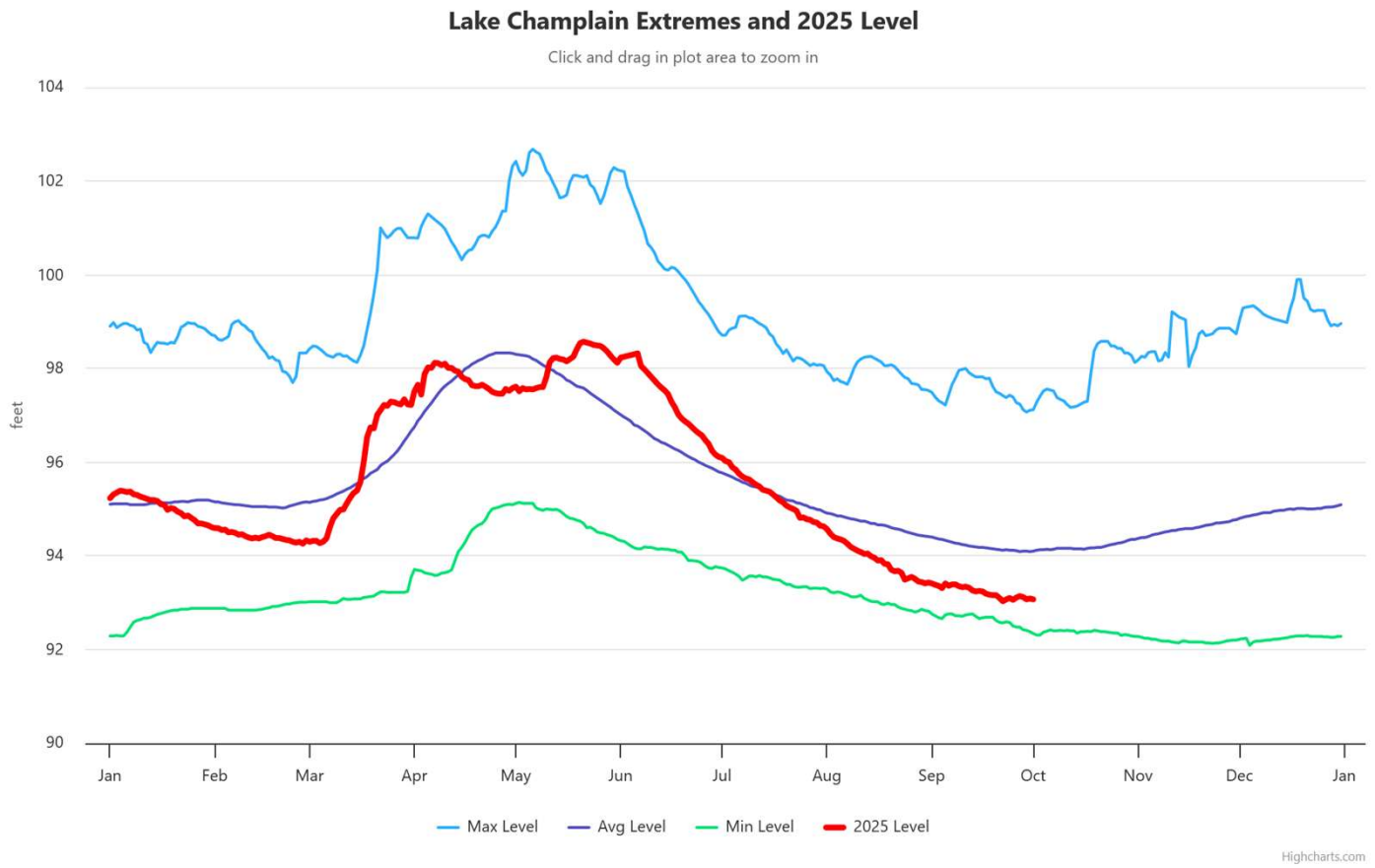
The U.S. Forest Service has stationed a wildfire response helicopter at the Lebanon Municipal Airport.

Officials say it's there temporarily to improve response times to potential wildfires.

They say people who live nearby may notice more flight activity, including low-level flying.

https://www.wcax.com/2025/09/29/wildfire-response-helicopter-staged-lebanon/

Lake Champlain daily heights – as of 1 October 2025



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9	18	97.79	2011	92.69	1941
9	19	97.62	2011	92.69	1941
9	20	97.5	2011	92.62	1941
9	21	97.47	2011	92.58	1941
9	22	97.42	2011	92.57	1941
9	23	97.38	2011	92.59	1941
9	24	97.43	2011	92.58	1941
9	25	97.39	2011	92.5	1941
9	26	97.27	2011	92.48	1941
9	27	97.24	2011	92.48	1941
9	28	97.12	2011	92.42	1941
9	29	97.07	2011	92.41	1941
9	30	97.11	2011	92.38	1941
10	1	97.12	2011	92.34	1941
10	2	97.28	2011	92.31	1941
10	3	97.41	2011	92.31	1941
10	4	97.52	2011	92.37	1941
10	5	97.56	2011	92.39	1941
10	6	97.54	2011	92.42	1941
10	7	97.52	2011	92.4	1941
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10	9	97.34	2011	92.41	1941
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10	13	97.18	1945	92.4	1941
10	14	97.2	1945	92.35	1941
10	15	97.24	1945	92.38	1941
10	16	97.28	1945	92.38	1908
10	17	97.3	1945	92.39	1941
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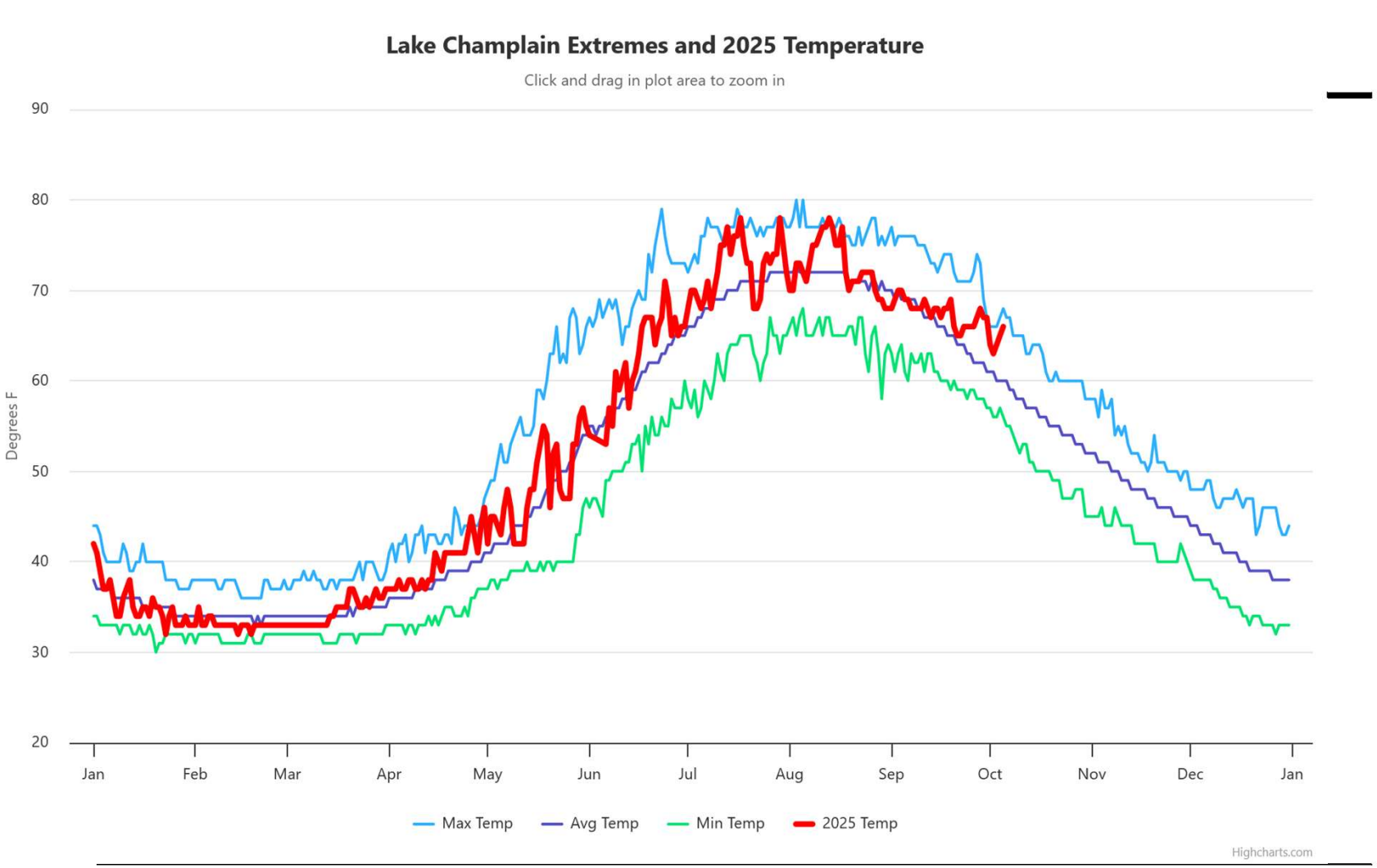
10	19	98.38	1977	92.41	1908

https://www.weather.gov/btv/lakeLevel?year=2025



9	4	76	1973	64	1982
9	5	76	1973	61	2000
9	6	76	1973	60	2000
9	7	76	2023	63	2011
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9	9	75	2015	62	1977
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9	11	75	2015	61	2011
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9	13	73	2015	63	1975
9	14	73	2015	61	1986
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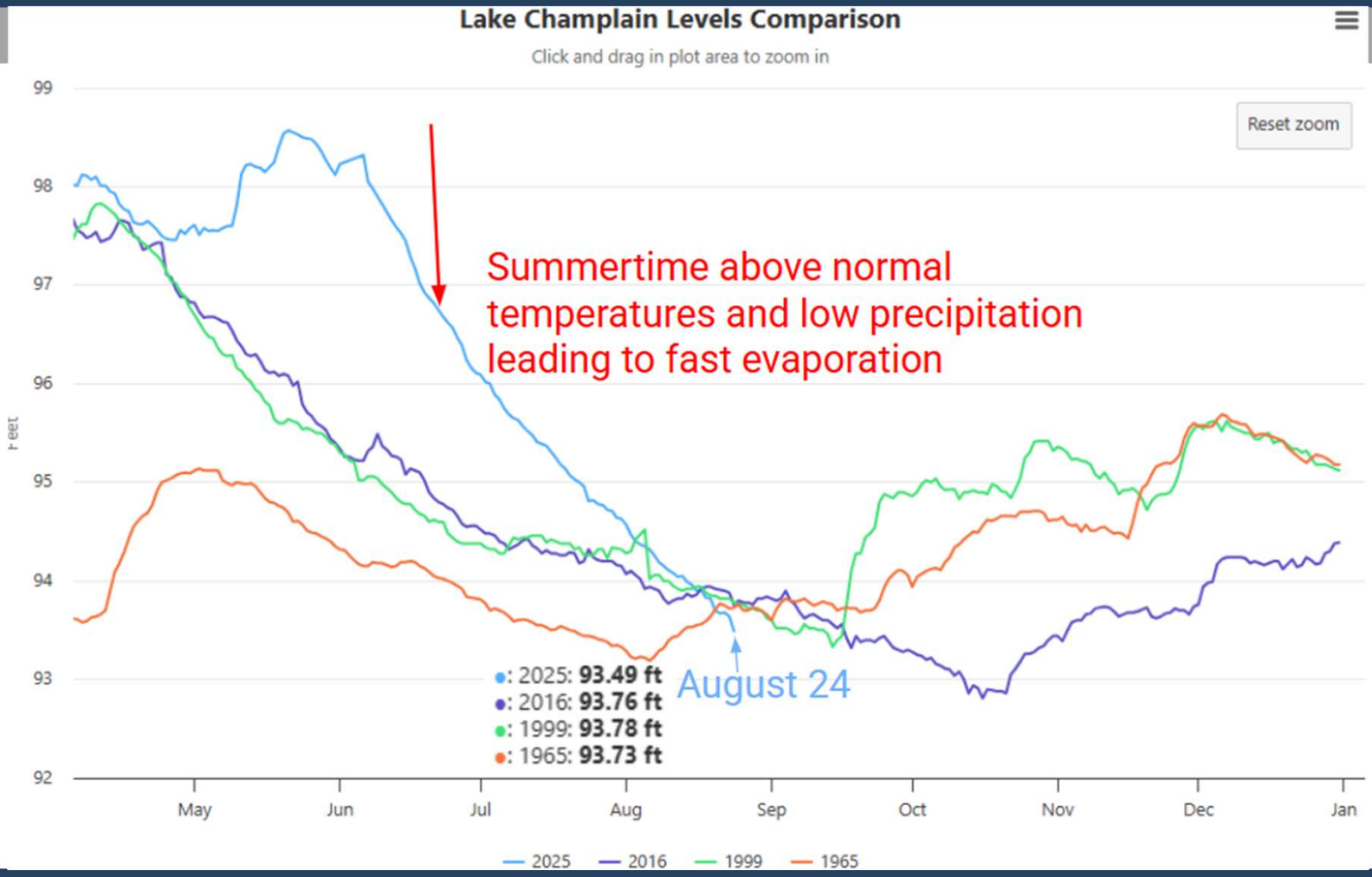
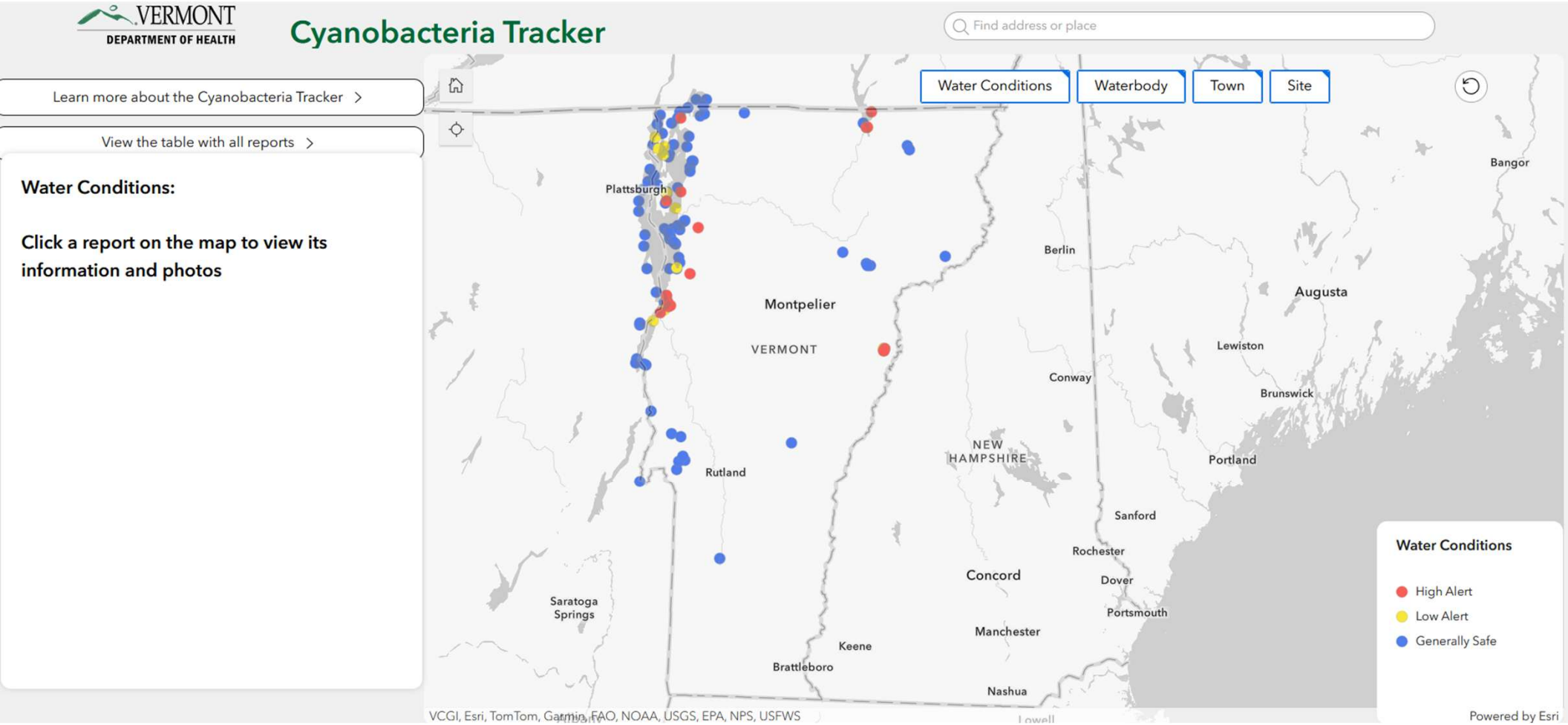
9	17	74	2015	60	1986
9	18	74	2015	60	1986
9	19	74	2015	59	1978
9	20	72	2015	60	1972
9	21	71	2015	59	1986
9	22	71	2015	59	1986
9	23	71	2016	59	1978
9	24	71	2015	58	1999
9	25	71	2017	59	1972
9	26	72	2017	59	1978
9	27	74	2017	58	1978
9	28	73	2017	58	1978
9	29	69	2017	58	1978
9	30	67	2025	57	1978
10	1	66	2016	57	1978
10	2	66	2016	56	2011
10	3	66	2017	56	1972
10	4	67	2023	57	1974
10	5	68	2023	56	1974
10	6	67	2023	55	2011

https://www.weather.gov/btv/lakeLevel?year=2025

Fall 2025 Drought



King Street Dock in Burlington, VT
20 September 2025


VERMONT
DEPARTMENT OF HEALTH
Cyanobacteria Tracker
Find address or place
Learn more about the Cyanobacteria Tracker
View the table with all reports
Water Conditions:
Click a report on the map to view its information and photos
Water Conditions
Waterbody
Town
Site
Plattsburgh
Montpelier
VERMONT
Rutland
Berlin
Bangor
Augusta
Lewiston
Conway
Brunswick
NEW HAMPSHIRE
Portland
Sanford
Rochester
Concord
Dover
Portsmouth
Manchester
Keene
Brattleboro
Nashua
Saratoga Springs
Water Conditions
High Alert
Low Alert
Generally Safe
VCGI, Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, NPS, USFWS
Powered by Esri

LOW LAKE LEVELS – ST. ALBANS BAY

SEPT 2025 VS. 8 JULY 2016

A view from St. Albans Bay Park. Vermont's state climatologist Lesley-Ann Dupigny-Giroux said the state needed 11 plus inches of groundwater to come out of a drought.

https://www.samessenger.com/news/lake-champlain-drought-vermont-effects/article_21919dc2-ad3f-41a8-b699-7d2b65a62cb1.html

Photo: L-A. Dupigny-Giroux

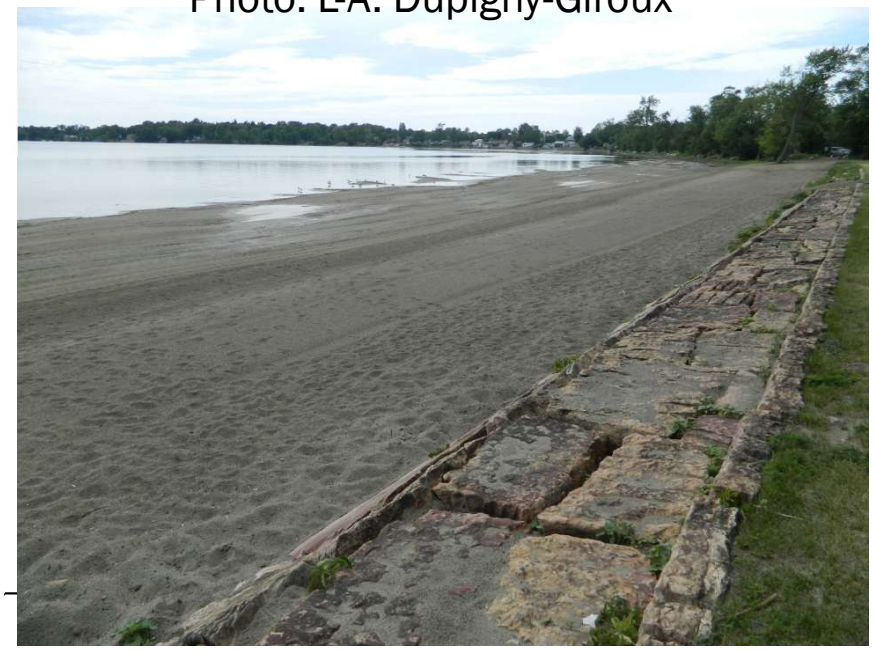


Photo: L-A. Dupigny-Giroux

Photos: L-A. Dupigny-Giroux

Winooski River – Bridge Street from the Farr Farm – 11 September 2025

By Adam Sullivan

Published: Sep. 30, 2025 at 4:46 PM EDT

EAST CORINTH, Vt. (WCAX) - The region's drought conditions don't appear to be getting any better anytime soon. In Vermont, there have been over 400 reports of water shortages impacting wells and springs. Most have been in Orange County, although Caledonia and Orleans Counties are close behind.

The drought is bringing people together, including families at the Waits River Valley School in East Corinth.

The one shower at the school has been getting a lot more use than normal, as roughly half a dozen local families are without water due to wells drying up. All families are invited to use the shower and the washing machine.

"We are well aware, as community members, that this is a significant issue across our state, so any way that we can help," said Waits River Valley School Principal Carlotta Simonds-Perantoni.

Related Stories:

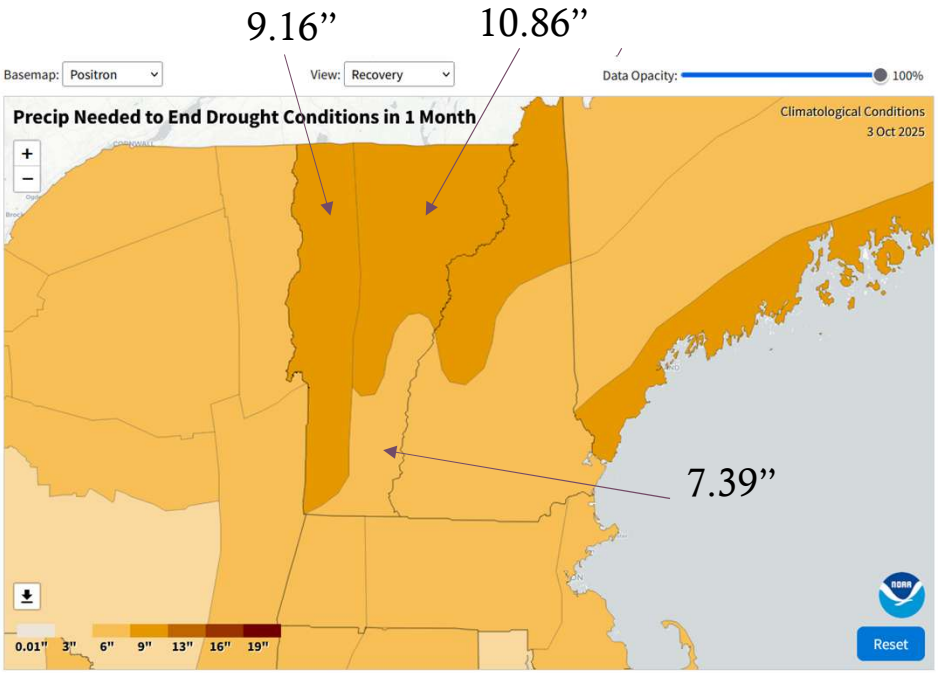
- **Amid drought, property owners coping with dry wells**
- **Vt. may request federal drought declaration**
- **Almost a quarter of Vermont now in extreme drought**

Despite the fact that the Waits River is still flowing, the lack of water across Orange County is the talk of the town at the East Corinth General Store. Kerry Ordway of Topsham is among those without water. "It started about three weeks ago, and it's going to take some rain to recover," Ordway said. "I'm securing a tank I can put in the basement so I can haul water all winter if I have to." Ordway is waiting until next year to have a new well dug.

https://www.wcax.com/2025/09/30/communities-offer-assistance-severe-drought-worsens/

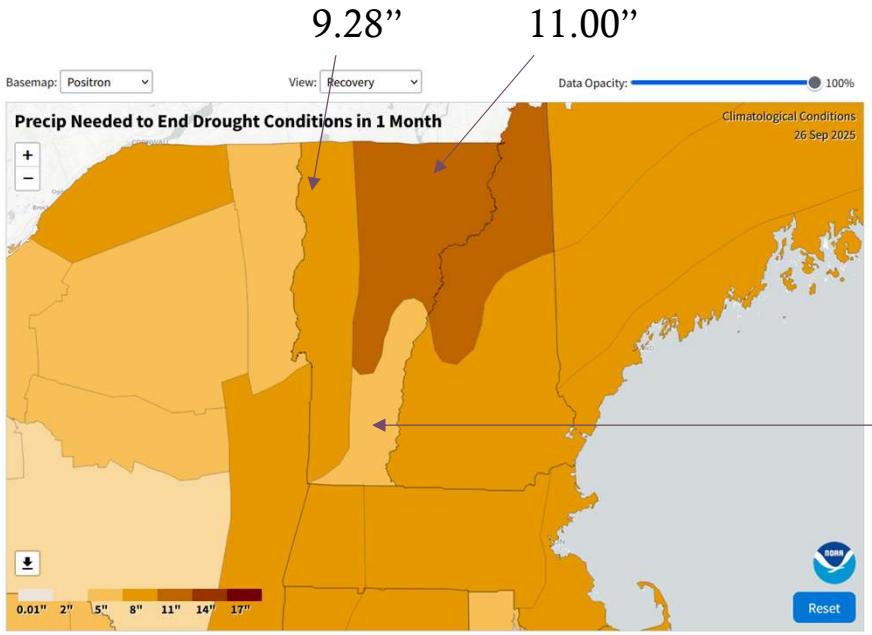
2 day lag

WHAT IS NEEDED FOR DROUGHT AMELIORATION



Based on the PHDI. PHDI is a primary measure of long-term drought but may not apply to all areas, including those with heavily managed surface water. No additional precipitation is needed for white areas.

3 October 2025

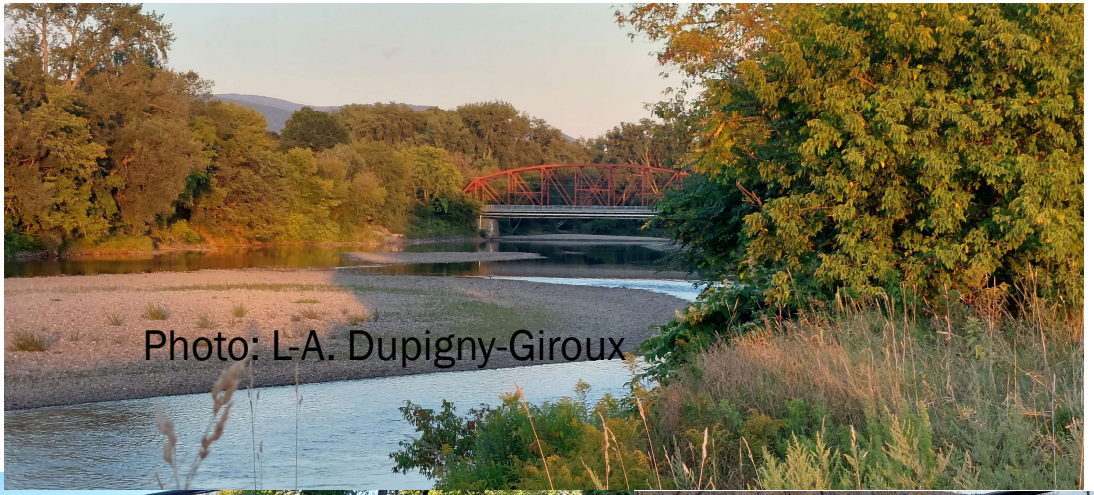


Based on the PHDI. PHDI is a primary measure of long-term drought but may not apply to all areas, including those with heavily managed surface water. No additional precipitation is needed for white areas.

26 September 2025

WEATHER & CLIMATE WHIPLASH

WINOOSKI RIVER AT RICHMOND – BRIDGE STREET



11 September 2025

20 September, 2025

1 November, 2025

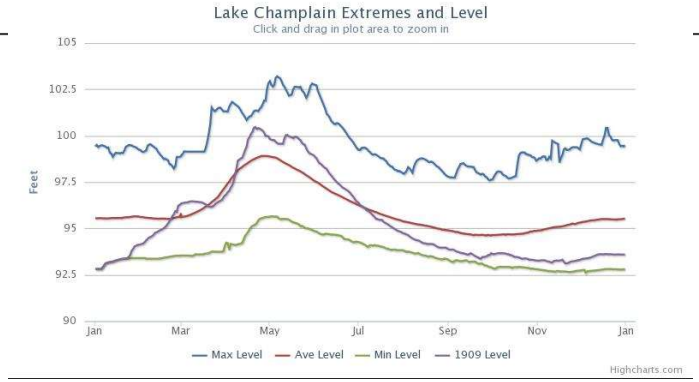
Photos: L-A. Dupigny-Giroux

EAST CORINTH – 1 NOVEMBER 2025

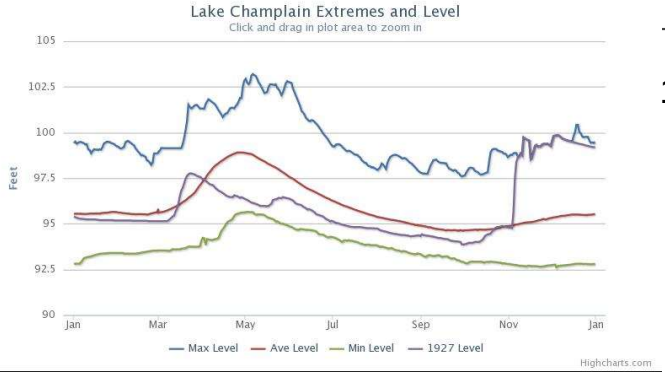
Photos: L-A. Dupigny-Giroux

Floods & droughts

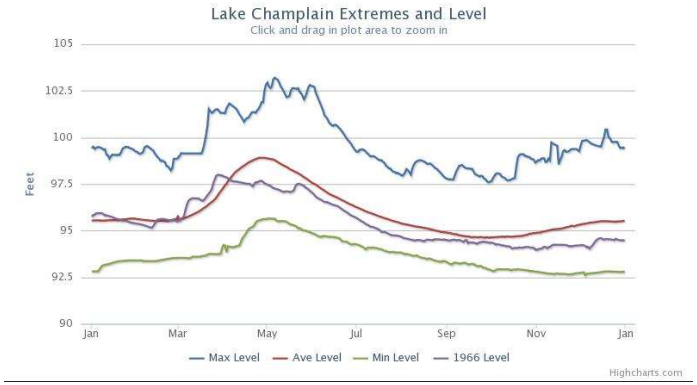
1909



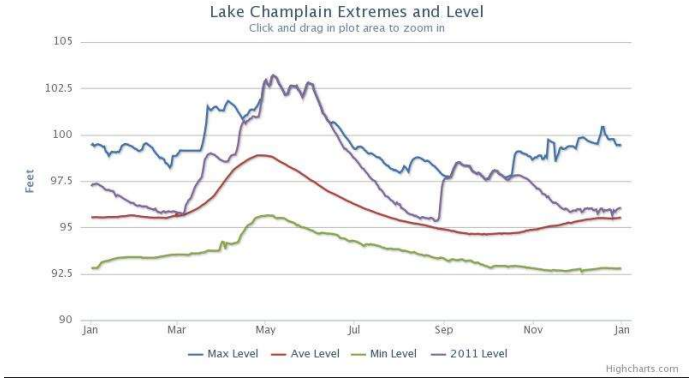
1927



1966

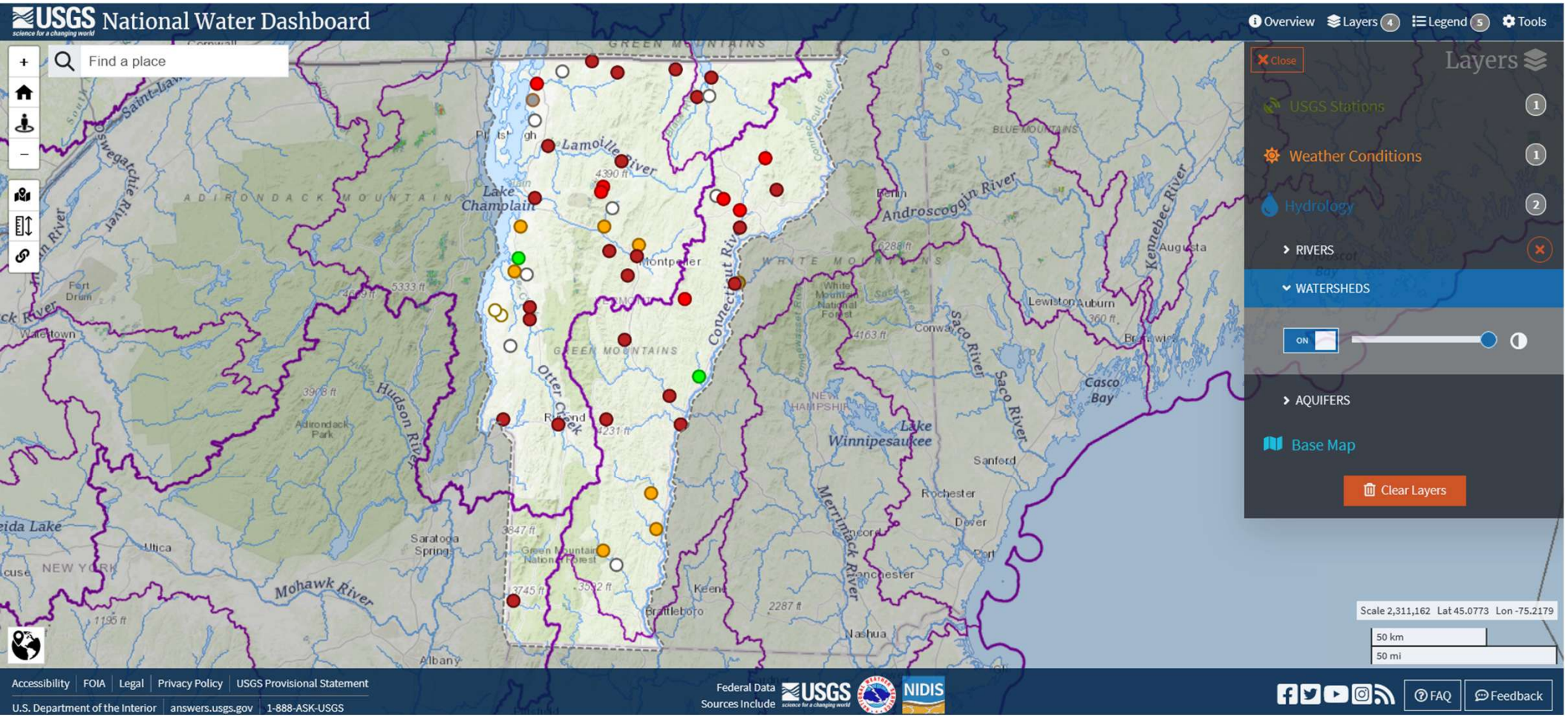


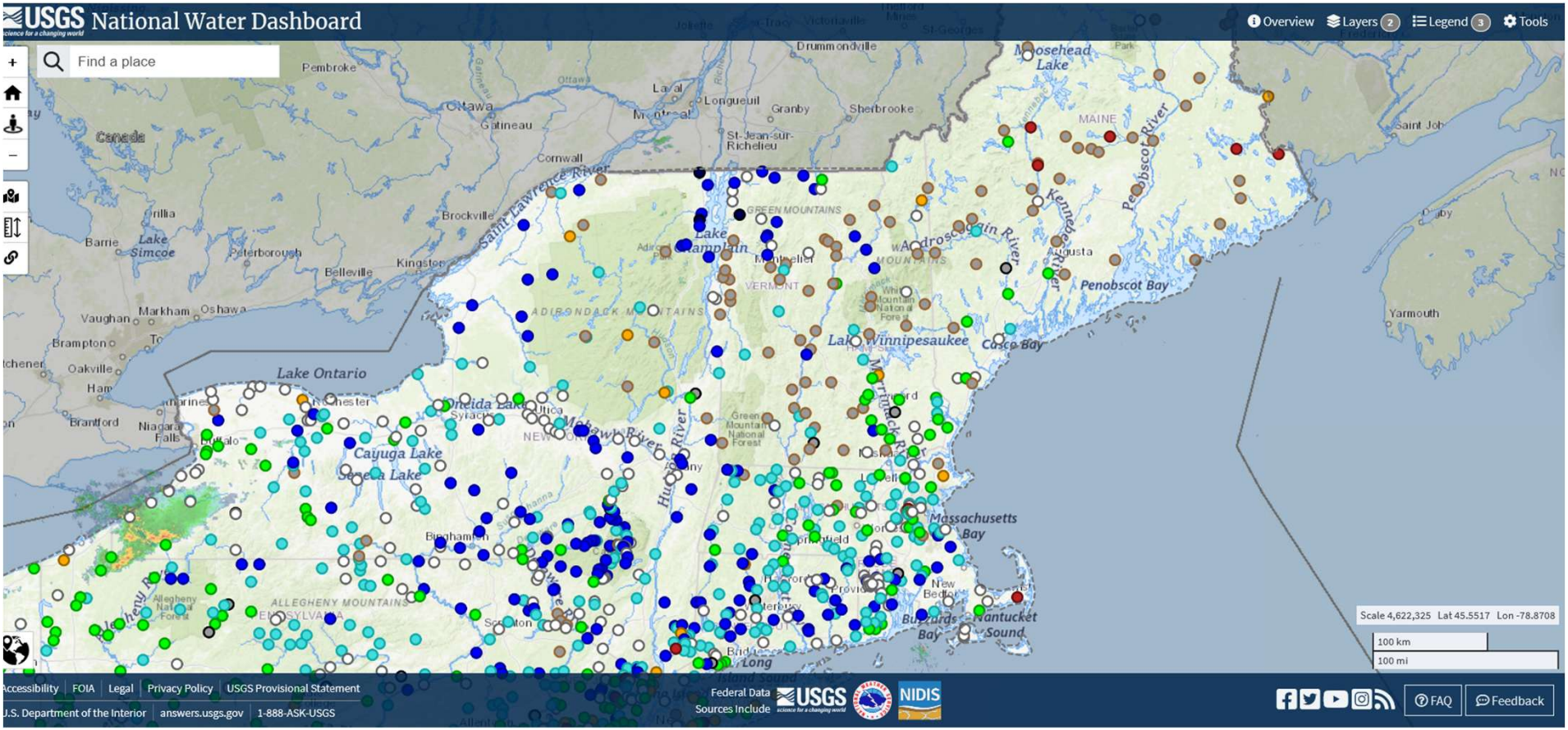
2011



Courtesy: National Weather Service

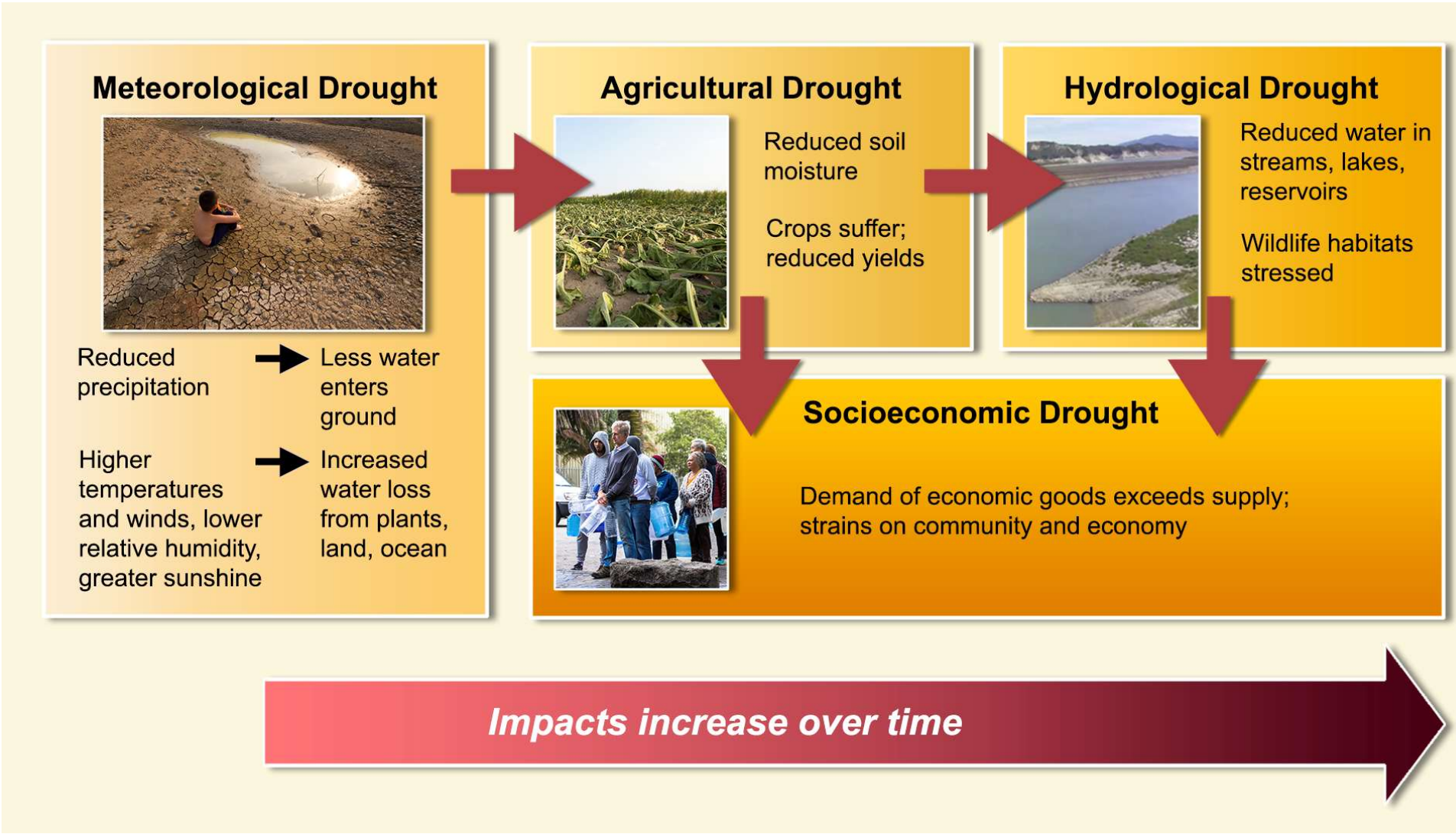
1 October 2025





https://dashboard.waterdata.usgs.gov/app/nwd/en/

RESPONDING TO THE ONGOING DROUGHTS



https://ilp-media.wgbh.org/filer_public/a2/7c/a27c77da-a995-4348-a21d-8ea2fd6ef2c1/kend19-img-typesdrought.png

Drought conditions persist

19 March 2026

~132,400
Vermont residents in areas of drought, according to the Drought Monitor

— 0.0% since last week

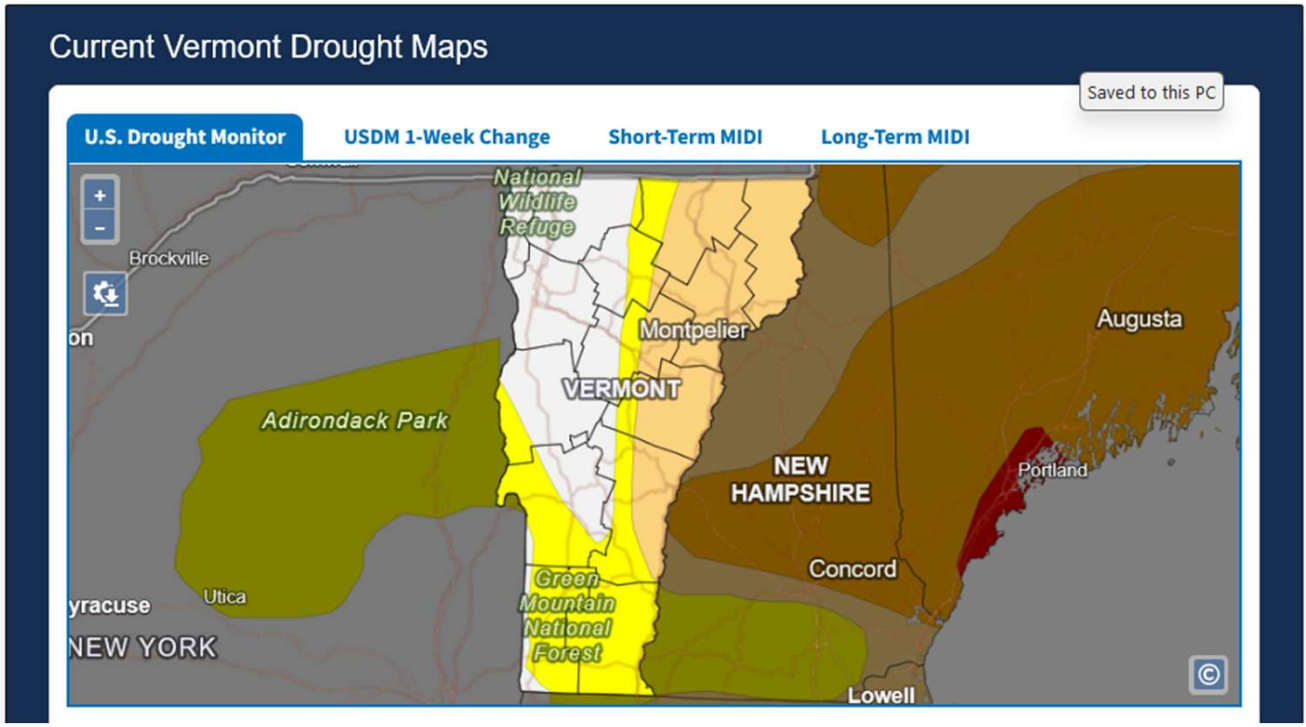
10th
driest February on record (since 1895)

1.24 in. total precipitation
↓ 1.31 in. from normal

9th
driest January—February on record (since 1895)

3.61 in. total precipitation
↓ 1.89 in. from normal

Learn More About These Stats



https://www.drought.gov/states/vermont

We need to prepare for all hazards

Week of 8 March 2026 – temperature extremes, flooding, ice jams, freezing rain

Current difficulty in communicating about multiple, overlapping hazards

Resource allocation at address sequential hazards

Dr. L-A. Dupigny-Giroux


Wildland fire smoke – 17 July 2023
NEXLAB-College of DuPage
GOES-16 "RGB-TRUE COLOR" 1.0 KM | VALID 17 JUL 23 18:06:17 UTC

6. Climate and Climate Change in Vermont

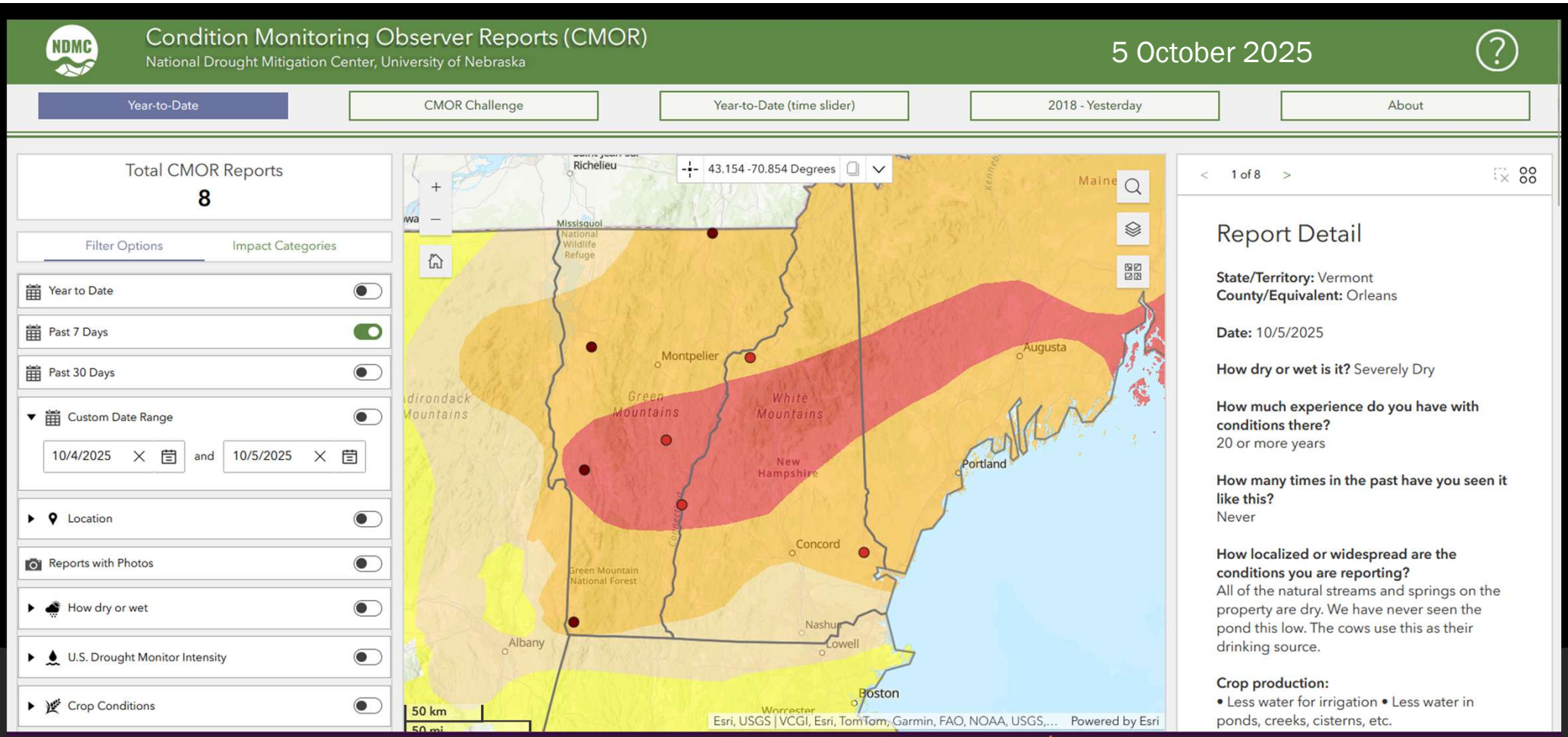
Citation: Dupigny-Giroux, L.A., Shafer, J., Kulkani, T., Bowden, B., Dow, J., Paske, C., Dejong, B., Kim, J., Myrick, E. "Climate and Climate Change in Vermont," *Vermont Climate Action Plan 2025*. Montpelier, VT, 2025.

Preface

This section of the *Vermont Climate Action Plan 2025* presents the land, air, water and plant dimensions of climate change in Vermont and the interconnected ways that we as peoples both affect and are impacted by such changes. From the homelands of the Abenaki and the Mohican, we honor all ways of knowing[3] and present mitigation, adaptation and resilience through the overlapping lenses of natural hazards, inclusion and vulnerability of peoples, the natural environment, and human infrastructure, as we seek to do no harm. For consistency with other state-level Climate Action Plans, this section uses data, methodologies and results developed in support of the 2023 Fifth National Climate Assessment (NCA5)[4] as well as those from multiple federal and State of Vermont agencies. Following the presentation style used in NCA documents, information here will be organized into Key Messages that highlight updates and developments made since the Initial Vermont Climate Action Plan of 2021.

Vermont Climate Action Plan 2025

https://outside.vermont.gov/agency/anr/climatecouncil/Shared%20Documents/VermontClimateActionPlan2025-Chapter6.pdf?_gl=1*1qvmrfr*_ga*MTkyMzQwNDgzLjE3NzMxNjcwNTI.*_ga_V9WQH77KLW*czE3NzMyNDIzNzUkbzEkZzAkdDE3NzMyNDIzODMkajUyJGwwJGgw



https://experience.arcgis.com/experience/016ac3b48c5049909106a23e6556311b

“If you see something, say something”

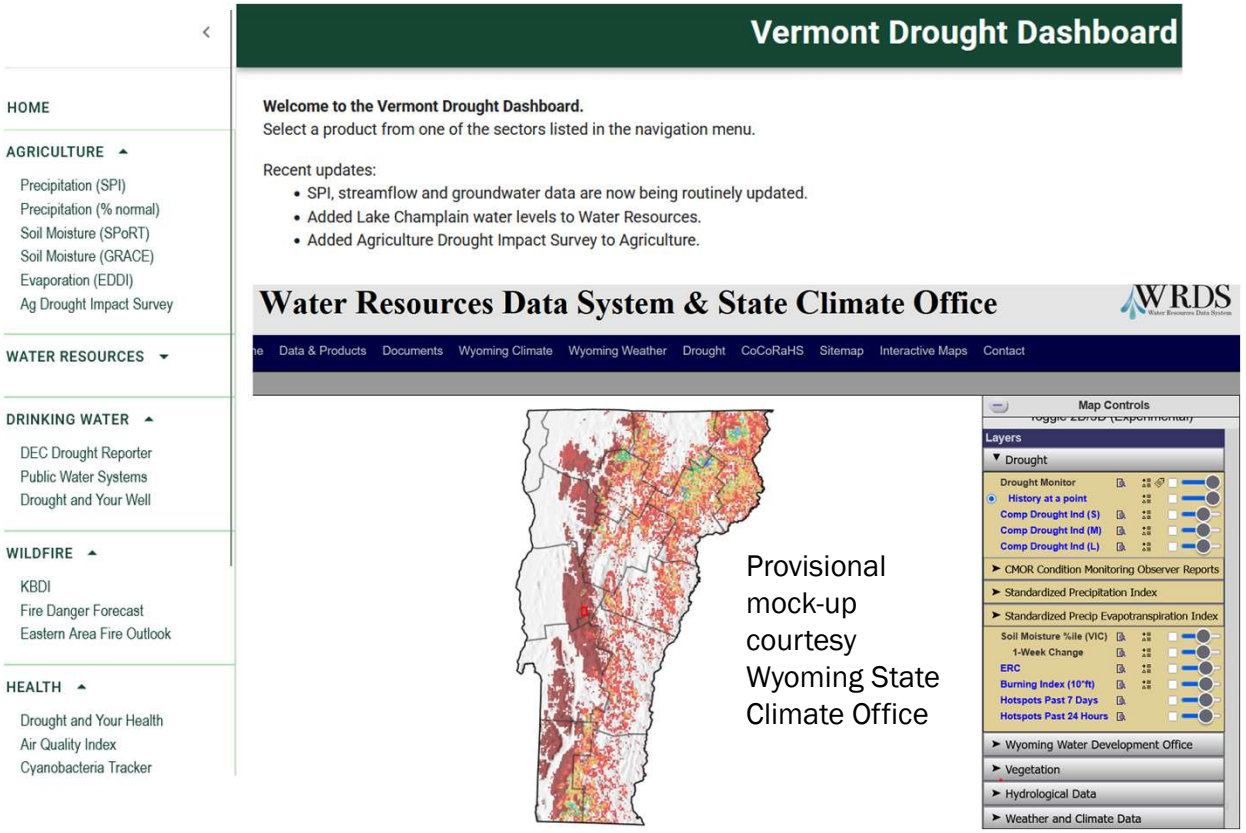
VERMONT DROUGHT DASHBOARD

Office of the Vermont State Climatologist

Website build in progress

Funded by NOAA/NIDIS

Dr. L-A. Dupigny-Giroux



Provisional mock-up courtesy Wyoming State Climate Office

1985 Drought Response Act

(South Carolina)

South Carolina Legislature

March 10, 2026, 09:37:48 pm

Session 106 - (1985-1986)

H*2243 (Rat #0096, Act #0063 of 1985) General Bill, By P. Freeman, R.L. Altman, J.F. Anderson, L.E. Bennett, L. Blanding, Boan, J.D. Bradley, C.D. Chamblee, M.J. Cooper, W.N. Cork, C.M. Dangerfield, F.L. Day, J. Faber, L.E. Gentry, J.V. Gregory, M.S. Gulledge, P.B. Harris, Harvin, R.L. Helmly, B.L. Hendricks, T.E. Huff, T.L. Hughston, H.H. Keyserling, Kirsh, R.A. Kohn, J.G. McAbee, F.E. McBride, McKay, H.L. Mitchell, H.E. Pearce, L. Phillips, A.V. Rawl, J.I. Rogers, T.F. Rogers, R. Schwartz, S.V. Shelton, J.J. Snow, J.H. Toal, Townsend, J.W. Tucker, J.M. White and D.E. Winstead

A Bill to amend the Code of Laws of South Carolina, 1976, by adding Chapter 23 to Title 49, so as to enact the South Carolina Drought Response Act of 1985.

01/24/85	**House**	**Introduced and read first time HJ-405**
01/24/85	**House**	**Referred to Committee on Agriculture and Natural Resources HJ-405**
03/07/85	**House**	**Committee report: Favorable with amendment Agriculture and Natural Resources HJ-1163**
03/14/85	**House**	**Amended HJ-1316**
03/14/85	**House**	**Read second time HJ-1325**
03/15/85	**House**	**Read third time and sent to Senate HJ-1370**
03/19/85	**Senate**	**Introduced and read first time SJ-907**
03/19/85	**Senate**	**Referred to Committee on Agriculture and Natural Resources SJ-907**
04/09/85	**Senate**	**Committee report: Favorable Agriculture and Natural Resources SJ-1395**
04/10/85	**Senate**	**Read second time SJ-1451**
04/10/85	**Senate**	**Ordered to third reading with notice of amendments SJ-1451**
04/17/85	**Senate**	**Read third time and enrolled SJ-1546**
04/24/85		**Ratified R 96**
04/29/85		**Signed By Governor**
04/29/85		**Effective date 04/29/85**

https://www.scstatehouse.gov/billsearch.php?billnumbers=2243&session=106&summary=T&PRINT=1

Dr. L-A. Dupigny-Giroux

Preparing for the next droughts

- All state, multi-sector Drought Plan – continuous monitoring, thresholds, triggers, activations, drought termination
- Bifurcation of the roles and responsibilities of Drought 'Council' and Drought Task Force
- Fostering a culture of monitoring and reporting
- Leveraging geospatial resources from the local/state level, regional, national
- Communications to the public
- Communications with partner institutions

https://weather.gc.ca/firework/firework_anim_e.html?type=pa&utc=12&region=ontario

Storymap about the Vermont droughts

2025 Climatology & Natural Hazards Geography class

Caroline Kroeger, Linnea Fried, Sam Moore, Sophie Williams, Matt Puchniak, Ella Stafford, Jocelyn Hooper, Anika Zia, Patti Kellogg

Dr. L-A. Dupigny-Giroux

Thank you for the opportunity to provide testimony

For more information contact:

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