Water Quality Report on the Souhegan River and Lower Merrimack River in NH.

Sample Date: 06-10-2025

Volunteers from the Souhegan Watershed Association sampled the defined river locations.
The Wastewater Treatment Labs for Merrimack and Manchester, NH, evaluated the samples.

This year, we have had one of the highest levels of rainfall in May and early June in recorded history. The consequence is high levels of inflow washing into the Souhegan and its tributaries, as well as combined sewer stormwater overflows entering the Merrimack River. The predictable result is high E. coli levels. Since we've had several heavy inflows every week through May, and the last storm finished 3 days before sampling, we've likely had much higher contamination levels than our sampling has captured.

I've modified this year's monitoring plan to bracket brook and river segments by name or their crossing of a town border. The intention is to more closely estimate the source of E. coli contamination and the legal jurisdiction over that source. Through the season, we may adjust our sampling points to converge on narrower areas of concern. Reviewing this week's results, we see that Beaver Brook in Amherst has very high levels of E. coli contamination. I could speculate that the vast meadows (swamps) which Beaver Brook feeds and drains have shallow banks and slower flow, and touch a larger number of residential properties than a fast-flowing and self-cleaning river. Perhaps the slower flow and more residential contact result in a longer duration of E. coli inflow and persistence in Beaver Brook. Amherst river do-gooders have a responsibility to understand the types and reasons for the E. coli levels in Beaver Brook.

The most significant factor contributing to the presence of E. coli and other unobserved bacteria and contaminants in the river is precipitation runoff. We have observed that E. coli levels fluctuate in response to the USGS Station measured discharge rate curves. I postulate that the quickest way to estimate a user's exposure to river-borne risks is by monitoring the USGS discharge rate curves of the Souhegan and Merrimack rivers. In short, "keep the water off your face if the curve is rising, peaking, or rapidly sloping down." If the discharge curve is relatively flat, the E. coli levels are likely to be low. **I believe we should publish E. coli exposure risk based on contemporaneous observation of River Discharge rate curves and CSO warnings.**

I've examined various watershed precipitation records, aiming to utilize rainfall as a leading indicator of E. coli levels. But there are only a few official historical recording stations near the watershed boundaries. (Manchester airport, Boire Field in Nashua) It is unlikely that a few point measurements can adequately describe the accumulated rainfall over the entire watershed. Within the watershed, there are internet-accessible records of measured precipitation and multisensor estimated precipitation (NOAA).

Eric Doberstein, Souhegan Watershed Association.
souhegan.river.monitoring@gmail.com 603.769.1477

Site ID	Site Description	Site Town	Monitor Name	E-coli MPN/100mL	DO	pH
South Branch	**Upper Souhegan River Sample Sites**					
BWP, #1	Billy Ward Pond 1 (south branch of Souhegan pond dam outflow)	Ashburnham	Dave Ward	20	-	-
BWP, #2	Billy Ward Pond 2 (south branch of Souhegan near origin)	Ashburnham	Dave Ward	17	-	-
SoR 333	River Road above Water Loom Pond	New Ipswich		-	-	-
SoR 320	Highbridge	New Ipswich	Doug Waitt	122	9.41	6.7
SoR 291	Green Bridge off Rte 31 below Greenville	Greenville		-	-	-
Downstream o	**f the Confluence of the South Branch, Stoney Brook, and Pine Valley Dam**					
SoR 201	Pine Valley	Wilton	John Nevin	225	9.90	6.8
Lower Souheg	**an Samples Sites**					
SoR 155	Souhegan Valley Boys and Girls Club (Mid Milford before Dam)	Milford	Celeste Barr/Eric	184	9.53	6.4
SoR 122	Rt 122 Canoeport, Amherst Country Club, (upstream of Beaver Brook)	Amherst	Carol Linder	276	9.65	6.5
Beaver Brook,	**tributary to Souhegan in Amherst**					
BeB 750	Great Meadow Outlet, upstream of the Bost Post Rd Bridge	Amherst	Eric Doberstein	365	6.12	6.1
BeB 710	Beaver Brook X Merrimack Road (near end of BeB)	Amherst	Eric Doberstein	365	7.88	6.3
Lower Souheg	**an Samples Sites downstream from Beaver Brook inflow**					.
SoR 095	Boston Post Road Canoeport, (mid Amherst section, downstream Beaver Brook)	Amherst		-	-	-
SoR 070	Seaverns Bridge (end of Amherst section, downstream Beaver Brook)	Amherst		-	-	-
SoR 001	Watson Park (exit of Souhegan before Merrimack River)	Merrimack	Eric Doberstein	127	9.94	7.0
Baboosic Broo	**k, Tributary to Souhegan slightly upsteam of Souhegan inflow to the Merrim**	Merrimack			*9.94*	
BaB 005	Baboosic Brook, Twin Bridges Park, near DW HWY (just before Merrimack)	Merrimack	Eric Doberstein	(skipped for BeB sites)		
Merrimack Riv	**er Sites, Upstream from Souhegan**					
Mer 570	Goffs Falls (downstream of Manchester, downstream of CSO inflows)	Litchfield	Gary Gagne	210	9.59	6.4
Mer 560	Depot Street (near the Upstream border btwn towns Merrimack and Bedford)	Merrimack	Dick Widhu	178	9.67	6.8
Merrimack Riv	**er Sites, Downstream of Souhegan**					
Mer 540	Sklar Waterfront Park, (mid Merrimack urban, downstream Souhegan River)	Merrimack	J & C Hemmingsen	190	9.51	6.9
Mer 530	Greeley Park, Boat Ramp (upstream of Nashua urban)	Nashua	Ellen Kolb	548	9.55	6.9
Mer 510	Sagamore Bridge, Nashua	Nashua	J & C Hemmingsen	214	9.86	7.1
Wasserman Pa	**rk**					
Dock		Merrimack	Merrimack WTL	-	-	-
Beach		Merrimack	Merrimack WTL	-	-	-
Horseshoe Po	**nd**					
Mackey Beach		Merrimack	Merrimack WTL	-	-	-
IDA Beach		Merrimack	Merrimack WTL	-	-	-

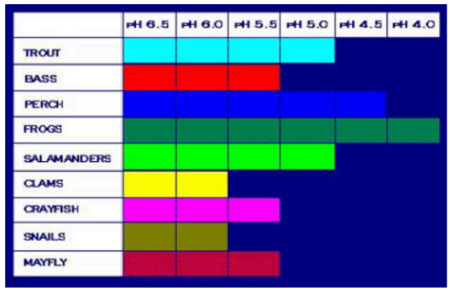
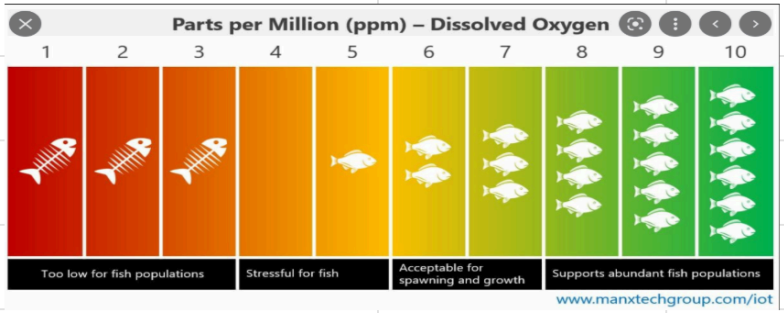


Figure 6. This table illustrates pH values that can be tolerated by different species.



0 < 88	Max Acceptable Level for Swimming (NHDES spec)
<126	Max Acceptable Level for Swimming (Federal EPA spec)
> 126 < 406	Safe for non swimming recreational contact.
> 406	Unsafe for recreational contact (NHDES spec)

100 ft3/s flow at Wildcat Falls is about the minimum flow needed to float a boat from the Kaley Park launch to Seaverns Bridge pull-out without significant bottom dragging.

Souhegan River (Site WLR-1) Near Milford, NH - 01093852

IMPORTANT Legacy real-time page

7 days | 30 days | 1 year

Scale: Linear | Log

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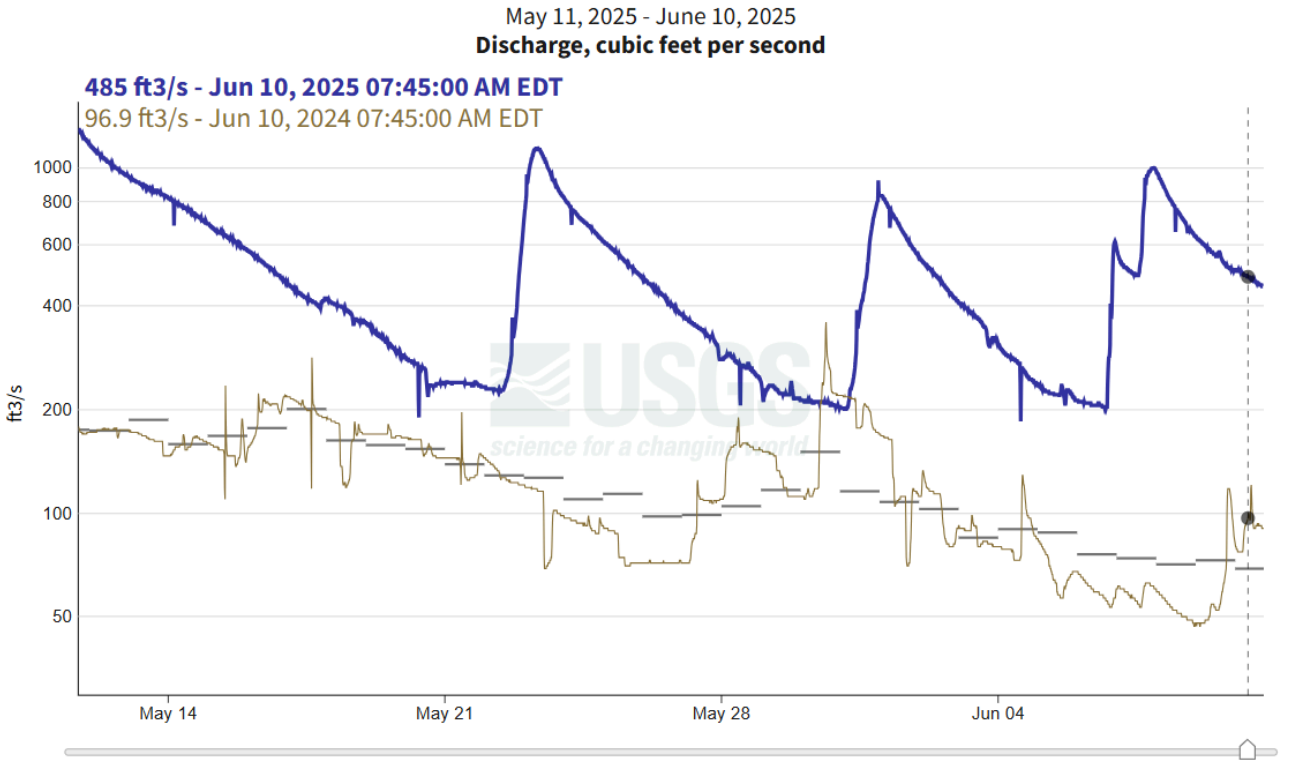
Souhegan River (Site WLR-1) Near Milford, NH - 01093852 Subscribe to WaterAlert



IMPORTANT Data may be provisional

Show legend

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	Value	Status	Time
Latest value	455 ft3/s	Provisional	Jun 10, 2025 16:45:00 PM EDT
Selected	485 ft3/s	Provisional	Jun 10, 2025 07:45:00 AM EDT
Prior year	96.9 ft3/s	Approved	Jun 10, 2024 07:45:00 AM EDT

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Statistics for June 10, 2025 based on 18 years of data

Streamflow, ft^3/s

low (2016)	25th percentile	median	75th percentile	mean	high (2017)
25.3 ft3/s	43 ft3/s	69 ft3/s	141 ft3/s	116 ft3/s	391 ft3/s

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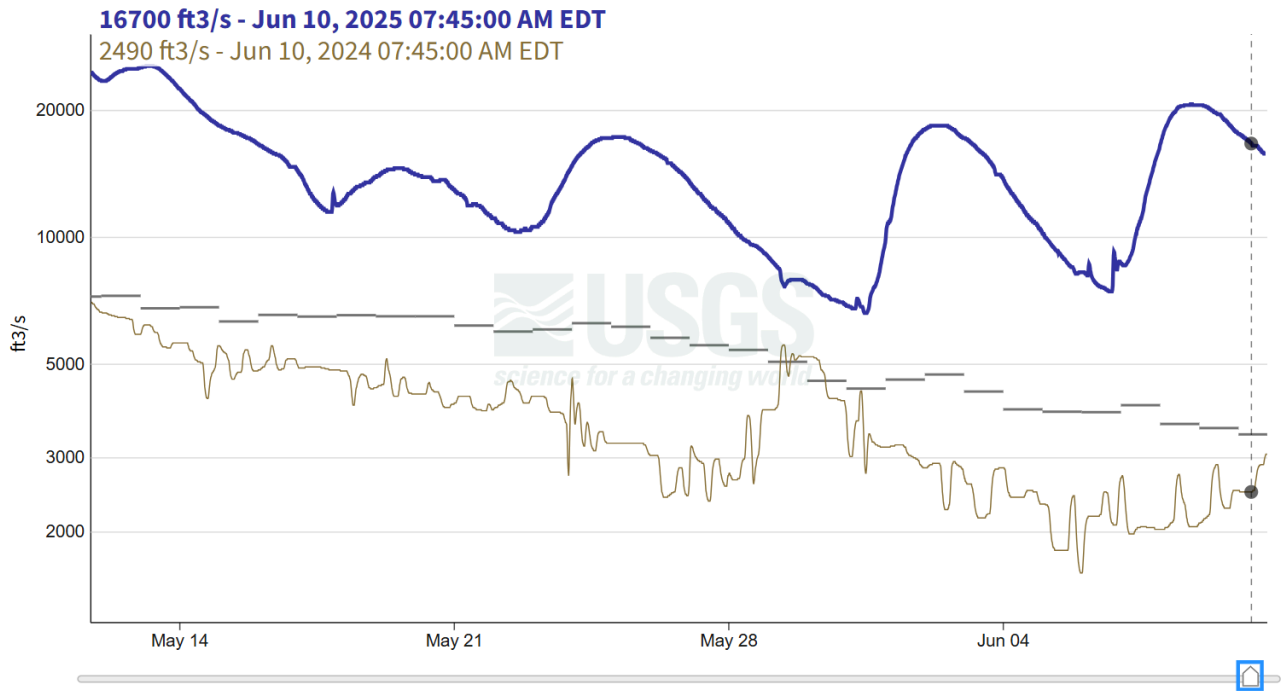
Change time span | Subscribe to WaterAlert | View related graphs | Download data | View data records

Continuous data

Merrimack R NR Goffs Falls, Below Manchester, NH - 01092000 Subscribe to WaterAlert

May 11, 2025 - June 10, 2025
Discharge, cubic feet per second



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	Value	Status	Time
Latest value	15800 ft3/s	Provisional	Jun 10, 2025 16:30:00 PM EDT
Selected	16700 ft3/s	Provisional	Jun 10, 2025 07:45:00 AM EDT
Prior year	2490 ft3/s	Approved	Jun 10, 2024 07:45:00 AM EDT

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Statistics for June 10, 2025 based on 88 years of data

Streamflow, ft^3/s

low (1999)	25th percentile	median	75th percentile	mean	high (1984)
1200 ft3/s	2460 ft3/s	3410 ft3/s	5740 ft3/s	4850 ft3/s	23300 ft3/s

Hide today's statistics

https://www.localconditions.com/weather-manchester-new-hampshire/03101/past.php

Mon, Jun 9th

High: 58ºF / 15ºC **Low**: 53ºF / 12ºC **Rainfall Total**: 0in

Mist with a high of 58°F and a low of 53°F. Wind was moderate, blowing around 11mph and gusts of 12.1mph at 2 PM. High humidity levels observed with an average of 95%, the maximum being 97% at 8 AM - it was consistently 96% for 9 hrs from 12 PM to 8 PM. Barometric pressure was its highest of 29.97^{inHg} at 11 AM, a lowest point of 29.92^{inHg} at 5 AM with an avg 29.95^{inHg}.

Time	Temp. (ºF)	Cloud Cover (%)	Humidity (%)	Dew Point (ºF)	Barometer (inHg)	Wind Speed (mph)	Wind Direction	Wind Gust (mph)	1hr. Precip / Rainfall (in)	Snow Depth (in)
12 AM	58	100%	90%	56.1	29.94	2	ENE	4.1	0	0
1 AM	58	100%	91%	55.9	29.94	3.6	NNE	7.5	0	0
2 AM	58	100%	93%	55.6	29.94	2.9	NNE	6.1	0	0
3 AM	57	100%	93%	54.8	29.93	3.1	NE	6.6	0	0
4 AM	57	100%	92%	54.4	29.93	3.6	NNE	7.5	0	0
5 AM	56	100%	92%	53.9	29.92	4.5	NNE	9.1	0	0
6 AM	55	100%	95%	53.8	29.94	4.3	NE	7.7	0	0
7 AM	55	100%	96%	53.8	29.95	6	ENE	7.9	0	0
8 AM	55	100%	97%	53.7	29.95	6	ENE	7	0	0
9 AM	55	100%	97%	53.8	29.96	6.7	E	7.7	0	0
10 AM	55	100%	97%	53.8	29.96	8.1	E	9.3	0	0
11 AM	55	100%	97%	53.9	29.97	9.8	E	11.3	0	0
12 PM	55	100%	96%	54	29.96	9.8	E	11.3	0	0
1 PM	55	100%	96%	54	29.95	10.1	E	11.6	0	0
2 PM	55	100%	96%	54.1	29.95	10.5	E	12.1	0	0
3 PM	55	100%	96%	53.9	29.95	9.8	ESE	11.3	0	0
4 PM	55	100%	96%	53.7	29.95	8.5	ESE	9.8	0	0
5 PM	55	100%	96%	53.6	29.95	8.9	ESE	10.4	0	0
6 PM	54	100%	96%	53.2	29.95	9.2	ESE	10.9	0	0
7 PM	54	100%	96%	53	29.95	7.4	E	9.6	0	0
8 PM	54	100%	96%	52.8	29.95	6.3	ESE	9.6	0	0
9 PM	53	100%	97%	52.4	29.96	5.1	E	9	0	0
10 PM	57	100%	97%	52.2	29.96	3.8	E	7.2	0	0
11 PM	55	100%	87%	56.6	29.94	2	E	3.8	0	0

Sun, Jun 8th

High: 73°F / 23°C **Low**: 59°F / 15°C **Rainfall Total**: 0in

Fog with a high of 73°F and a low of 59°F. Winds were light at 10mph at times and gusts of 11.9mph at 4 PM. High humidity levels observed with an average of 81%, the maximum being 98% at 5 AM - it was consistently 91% for 2 hrs from 12 AM to 1 AM. Barometric pressure was its highest of 29.9^{inHg} at 10 PM, a lowest point of 29.77^{inHg} at 12 AM with an avg 29.83^{inHg}.

Time	Temp. (°F)	Cloud Cover (%)	Humidity (%)	Dew Point (°F)	Barometer (inHg)	Wind Speed (mph)	Wind Direction	Wind Gust (mph)	1hr. Precip / Rainfall (in)	Snow Depth (in)
12 AM	62	63%	91%	60.1	29.77	3.4	WNW	7	0	0
1 AM	62	55%	91%	59.7	29.77	3.4	WNW	7	0	0
2 AM	61	46%	92%	59.3	29.77	3.6	NW	7.5	0	0
3 AM	60	73%	95%	58.2	29.78	4	NW	8.5	0	0
4 AM	59	86%	96%	57.7	29.79	4	NNW	8.5	0	0
5 AM	59	100%	98%	57.1	29.79	4	NW	8.5	0	0
6 AM	59	91%	97%	57.7	29.81	4	NW	8.5	0	0
7 AM	59	87%	96%	58	29.81	3.8	NW	6.3	0	0
8 AM	62	83%	96%	58.3	29.82	3.6	NNW	4.5	0	0
9 AM	64	57%	88%	60.5	29.84	3.4	NNW	3.9	0	0
10 AM	67	44%	84%	61.5	29.84	4.3	NNE	4.9	0	0
11 AM	69	31%	80%	62.6	29.85	5.1	NE	5.9	0	0
12 PM	71	48%	71%	61.3	29.85	4.9	ENE	5.7	0	0
1 PM	72	56%	66%	60.6	29.85	5.4	E	6.2	0	0
2 PM	73	64%	62%	59.9	29.85	6.9	ESE	8	0	0
3 PM	72	82%	63%	59.4	29.85	8.7	SE	10.3	0	0
4 PM	72	91%	64%	59.2	29.85	9.2	SE	11.9	0	0
5 PM	70	100%	64%	58.9	29.85	9.2	SE	11.5	0	0
6 PM	68	100%	68%	57.3	29.86	8.3	SE	10.6	0	0
7 PM	67	100%	70%	56.5	29.87	6.9	SE	10.7	0	0
8 PM	65	100%	72%	55.7	29.87	4.7	SE	8.7	0	0
9 PM	63	86%	77%	55.6	29.89	3.8	SE	7.1	0	0
10 PM	64	79%	80%	55.5	29.9	3.1	ESE	5.8	0	0
11 PM	62	81%	90%	60.8	29.84	3.6	E	6.4	0	0

Sat, Jun 7th

High: 68°F / 20°C **Low**: 62°F / 17°C **Rainfall Total**: 0.93in

Moderate Rain with a high of 68°F and a low of 62°F. Rain was overall forecasted as having a 100% chance with a rainfall total of 0.93in. Winds were light at 7mph at times and gusts of 13.2mph at 11 PM. High humidity levels observed with an average of 97%, the maximum being 98% at 12 AM - it was consistently 97% for 10 hrs from 9 AM to 6 PM. Barometric pressure was its highest of 29.81^{inHg} at 12 AM, a lowest point of 29.66^{inHg} at 5 PM with an avg 29.74^{inHg}.

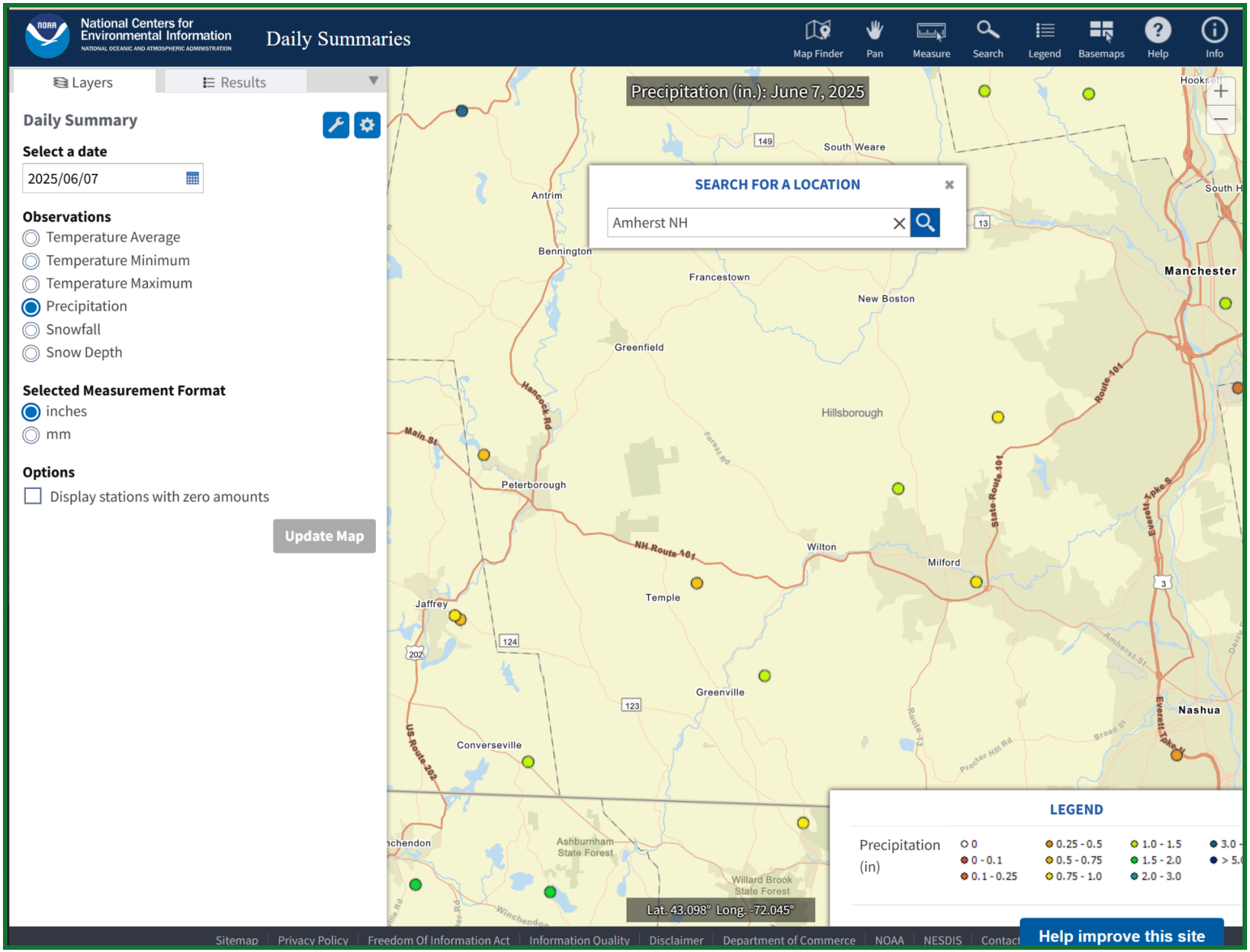
Time	Temp. (°F)	Cloud Cover (%)	Humidity (%)	Dew Point (°F)	Barometer (inHg)	Wind Speed (mph)	Wind Direction	Wind Gust (mph)	1hr. Precip / Rainfall (in)	Snow Depth (in)
12 AM	63	100%	98%	62.5	29.81	5.1	S	7.8	0.02	0
1 AM	63	100%	98%	62.5	29.8	5.4	SSW	8.2	0.01	0
2 AM	63	100%	98%	62.5	29.79	3.6	S	5.9	0	0
3 AM	63	100%	98%	62.8	29.79	3.4	SSW	6.1	0	0
4 AM	63	100%	98%	62.9	29.79	2.9	SSW	5.7	0	0
5 AM	64	100%	98%	63.1	29.78	2.7	SSW	5	0	0
6 AM	64	100%	98%	63.7	29.78	3.4	SSW	5.8	0	0
7 AM	65	100%	98%	64	29.78	3.8	SSW	6.1	0	0
8 AM	65	100%	98%	64.3	29.78	3.6	SSW	5.6	0	0
9 AM	66	100%	97%	64.9	29.77	3.8	S	5.8	0	0
10 AM	66	100%	97%	65.2	29.76	5.1	S	7.3	0	0
11 AM	66	100%	97%	65.4	29.76	4.3	SW	6.2	0	0
12 PM	66	100%	97%	65.4	29.74	3.8	SSW	5.4	0	0
1 PM	66	100%	97%	65.4	29.73	4.7	SW	6.6	0	0
2 PM	67	100%	97%	65.4	29.72	6.3	SW	8.5	0	0
3 PM	67	100%	97%	66.3	29.69	5.1	SW	8	0.07	0
4 PM	68	100%	97%	66.7	29.68	5.8	WSW	8.1	0.1	0
5 PM	67	100%	97%	67.1	29.66	4.5	W	6.3	0.13	0
6 PM	67	100%	97%	66.3	29.67	5.4	NNW	6.8	0.13	0
7 PM	67	100%	98%	65.8	29.67	3.8	N	5.4	0.13	0
8 PM	65	100%	98%	65.4	29.68	2.2	WNW	4.7	0.12	0
9 PM	64	100%	96%	62.5	29.69	4	WNW	8.5	0.1	0
10 PM	63	100%	95%	61.1	29.7	5.8	NW	12.2	0.08	0
11 PM	62	100%	98%	62.4	29.76	6.3	NW	13.2	0.04	0

Fri, Jun 6th

High: 76°F / 24°C **Low**: 66°F / 19°C **Rainfall Total**: 0.7in

Moderate Or Heavy Rain Shower with a high of 76°F and a low of 66°F. Rain was overall forecasted as having a 100% chance with a rainfall total of 0.7in. Winds were light at 6mph at times and gusts of 11.1mph at 7 PM. The average humidity was on the higher side around 79%, the maximum being 98% at 10 PM - it was consistently 81% for 4 hrs from 5 AM to 8 AM. Barometric pressure was its highest of 29.96^{inHg} at 7 AM, a lowest point of 29.92^{inHg} at 12 AM with an avg 29.93^{inHg}.

Time	Temp. (°F)	Cloud Cover (%)	Humidity (%)	Dew Point (°F)	Barometer (inHg)	Wind Speed (mph)	Wind Direction	Wind Gust (mph)	1hr. Precip / Rainfall (in)	Snow Depth (in)
12 AM	76	45%	64%	63.2	29.92	3.4	WNW	7	0	0
1 AM	75	56%	68%	63.7	29.92	4	WNW	8.5	0	0
2 AM	73	67%	72%	64.3	29.93	3.8	NW	8	0	0
3 AM	72	50%	77%	63.7	29.94	4.3	NW	8.9	0	0
4 AM	70	41%	79%	63.4	29.94	4.3	NNW	8.9	0	0
5 AM	70	32%	81%	63	29.94	3.6	N	7.5	0	0
6 AM	70	44%	81%	63.4	29.95	2.7	NNE	5.2	0	0
7 AM	70	50%	81%	63.5	29.96	3.4	NE	5.1	0	0
8 AM	71	56%	81%	63.7	29.96	3.8	ENE	4.7	0	0
9 AM	73	58%	73%	63.6	29.96	2.2	E	2.6	0	0
10 AM	74	59%	69%	63.6	29.96	2	NNE	2.7	0	0
11 AM	75	60%	65%	63.5	29.95	2.9	ENE	3.4	0	0
12 PM	76	76%	66%	64.1	29.94	1.8	ENE	2.1	0	0
1 PM	76	83%	67%	64.4	29.93	2	SSE	2.6	0	0
2 PM	75	91%	67%	64.7	29.92	2	SSW	2.9	0	0
3 PM	73	96%	79%	66.2	29.92	2	SSW	3.1	0.04	0
4 PM	72	98%	85%	67	29.92	1.8	SSE	3.6	0.06	0
5 PM	70	100%	91%	67.7	29.92	2.7	ESE	4.9	0.08	0
6 PM	69	100%	94%	66.7	29.92	3.8	ESE	5.5	0.11	0
7 PM	68	100%	96%	66.2	29.92	5.4	SSE	11.1	0.12	0
8 PM	67	100%	97%	65.7	29.92	3.1	ESE	5.6	0.14	0
9 PM	66	100%	97%	65.4	29.92	2	ENE	3.2	0.09	0
10 PM	73	100%	98%	65.2	29.92	2.2	S	3.6	0.07	0
11 PM	69	23%	56%	62	29.92	2	S	3.3	0	0


National Centers for Environmental Information
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
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Temperature Maximum
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Snowfall
Snow Depth
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Update Map
Precipitation (in.): June 7, 2025
SEARCH FOR A LOCATION
Amherst NH
South Weare
Antrim
Bennington
Francestown
New Boston
Greenfield
Hillsborough
Peterborough
Wilton
Milford
Temple
Jaffrey
Greenville
Converseville
Ashburnham State Forest
Willard Brook State Forest
Manchester
Nashua
Hancock Rd
Main St
NH Route 101
State Route 101
Route 101
US Route 202
Lat. 43.098° Long. -72.045°
LEGEND
Precipitation (in)
0
0 - 0.1
0.1 - 0.25
0.25 - 0.5
0.5 - 0.75
0.75 - 1.0
1.0 - 1.5
1.5 - 2.0
2.0 - 3.0
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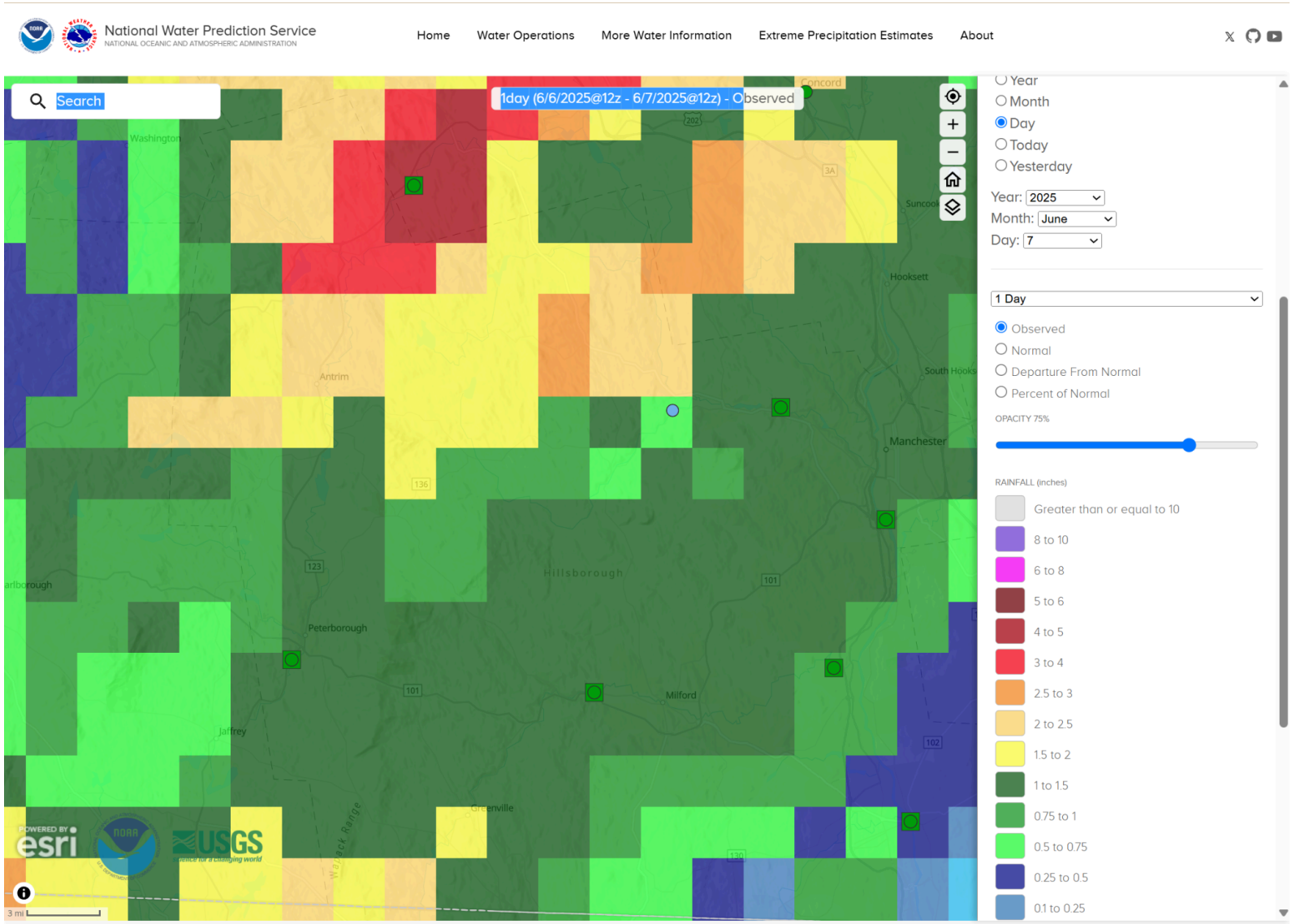

[National Water Prediction Service]