

<b>NWS Form E-5</b> (04-2006) (PRES. BY NWS Instruction 10-924)	<b>U.S. DEPARTMENT OF COMMERCE</b> <b>NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION</b> <b>NATIONAL WEATHER SERVICE</b>	HYDROLOGIC SERVICE AREA (HSA) <b>Boston/Norton MA</b>	
		REPORT FOR: MONTH                      YEAR <b>January                      2021</b>	
<b>MONTHLY REPORT OF HYDROLOGIC CONDITIONS</b>		SIGNATURE Nicole M. Belk Senior Service Hydrologist	
TO:                      Hydrologic Information Center, W/OS31 NOAA's National Weather Service 1325 East West Highway Silver Spring, MD 20910-3283		DATE <b>February 8, 2021</b>	

When no flooding occurs, include miscellaneous river conditions below the small box, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924).

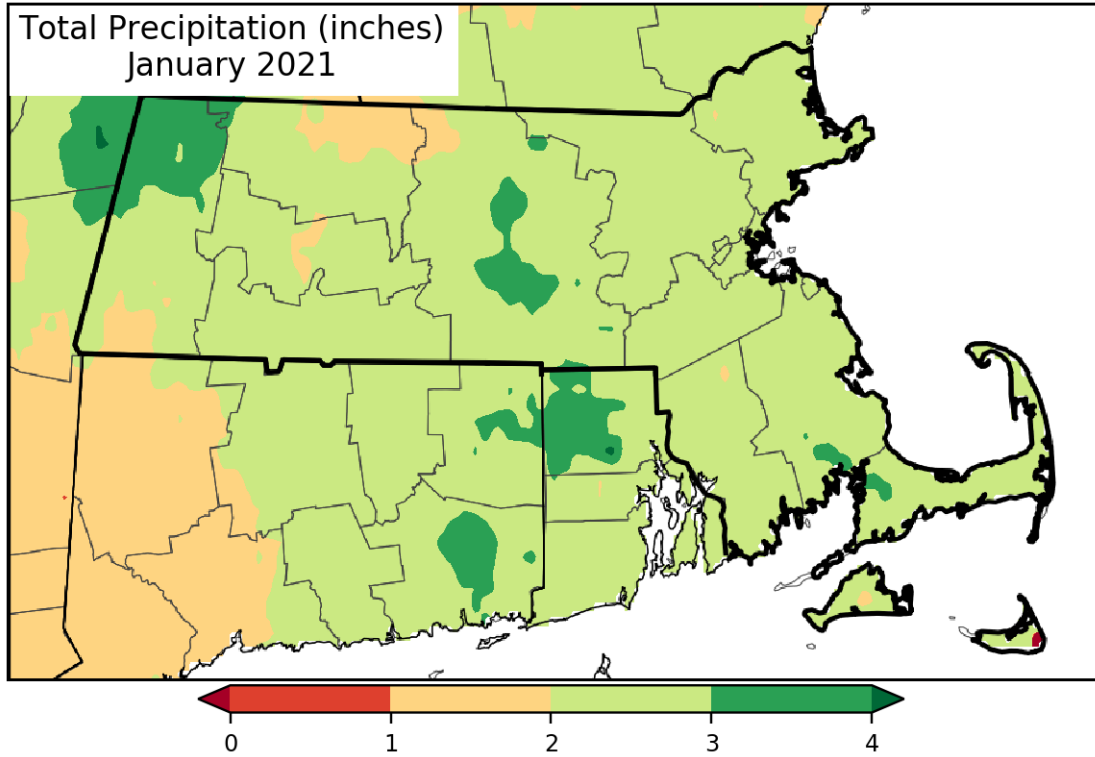
An X inside this box indicates that no flooding occurred within this hydrologic service area.

...Following Generous December Precipitation, State Drought Declarations Ended in Massachusetts and Connecticut...  
 ...Drought Advisory Continues in Rhode Island...

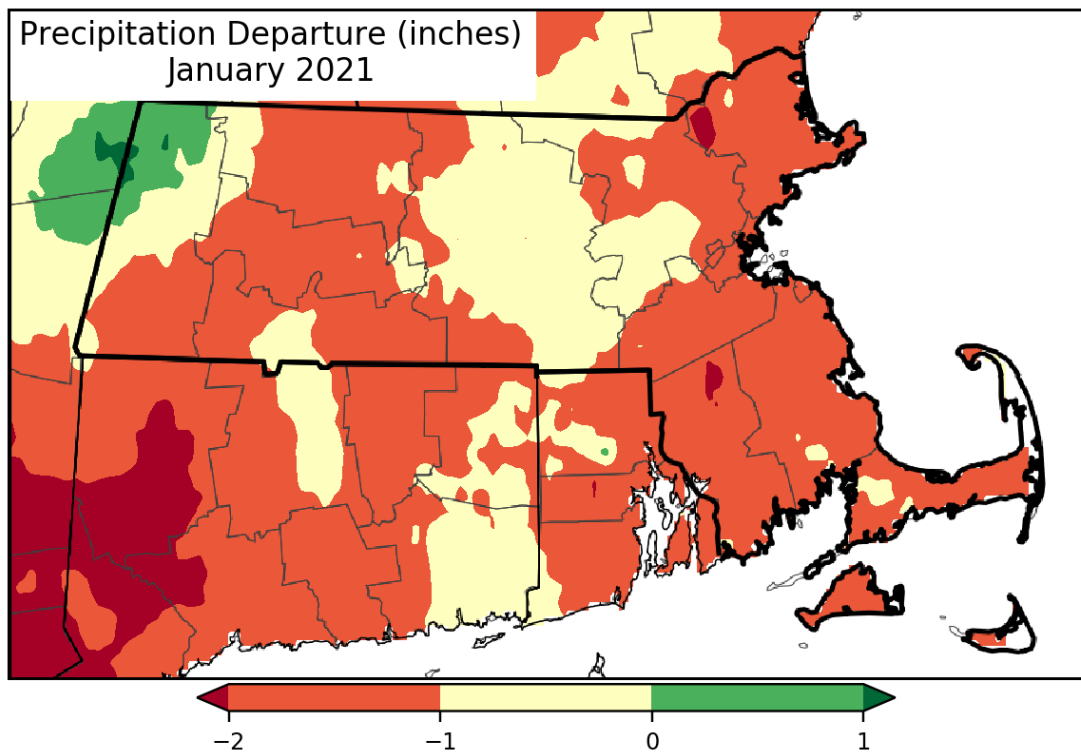
January 2021 precipitation was below normal across southern New England. Precipitation (consisting of rain and melted snow) ranged from 2 to 3 inches across the region, with spot higher and lower totals. This precipitation was 0.5 to 2 inches below normal. Temperatures averaged 2 to 5 degrees above normal. Table 1 provides more details for major climate sites. Maps 1 and 2 depict precipitation and departure from normal precipitation for the area.

<i>Location</i>	<i>January Precipitation (Inches)</i>	<i>Precipitation Departure from Normal (Inches)</i>	<i>Temperature Departure from Normal (Degrees F)</i>
<i>Boston</i>	2.02	-1.34	+2.0
<i>Worcester</i>	2.27	-1.22	+3.4
<i>Providence</i>	2.04	-1.82	+2.9
<i>Hartford</i>	2.43	-0.80	+2.9

Table 1. January 2021 precipitation, precipitation departure from normal, and temperature departure from normal, for major climate sites within southern New England. Precipitation totals include rainfall and melted snow. Information is preliminary.



Map 1: January 2021 precipitation for southern New England. Precipitation includes rainfall and melted snowfall. From the Northeast Regional Climate Center.



Map 2. January 2021 precipitation departure from normal for southern New England. From the Northeast Regional Climate Center.

## **State Drought Declaration Updates**

The abundance of precipitation during December 2020 brought southern New England out of drought conditions, even causing minor flooding on a few area rivers (reference December 2020 E-5 Report from NWS Boston). This resulted in the following updates to State Drought Declarations in southern New England.

During January, the Connecticut Interagency Drought Workgroup (IDW) determined that the drought conditions had ended across the State. On January 13th the State announced a return to normal conditions.

On January 8, following a meeting of the MA Drought Management Task Force (MA DMTF), the MA Secretary of Energy and Environmental Affairs announced that the drought conditions had ended across the Commonwealth.

In Rhode Island, a Statewide Drought Advisory remained in effect. While precipitation during October to December was normal to above normal, area ground water levels had been slow to recover. During December ground water levels had mostly returned to normal. However, this was short of the 2 consecutive months of normal groundwater levels required to return to normal conditions in the State, as outlined in the document Rhode Island Water 2030.

The US Drought Monitor depicted southern New England in normal conditions through the month of January.

### **Streamflow and Groundwater:**

Streamflows across southern New England averaged normal to above normal during January. Groundwater levels varied somewhat, but were mainly in the normal range.

**Rhode Island Precipitation**  
**National Weather Service Boston/Norton, MA**  
Preliminary Precipitation Data (inches) by Drought Region  
Past 12 to 36 months ending January 2021  
*Includes CoCoRaHS Data*

<b>RI 1 month January 2021</b>	Rainfall	Departure	Percent	Normal
Northwest	2.79	-1.49	65	4.28
Northeast	2.49	-1.58	61	4.07
Central West	2.74	-1.33	67	4.07
Central East	2.23	-1.63	58	3.86
Eastern	2.01	-1.84	52	3.85
Southern	2.40	-1.71	58	4.11
New Shoreham	2.36	-1.75	57	4.11

<b>RI 2 month Dec 20-Jan 21</b>	Rainfall	Departure	Percent	Normal
Northwest	10.97	1.85	120	9.12
Northeast	12.39	3.58	141	8.81
Central West	13.59	4.92	157	8.67
Central East	12.47	4.39	154	8.08
Eastern	9.30	1.13	114	8.17
Southern	11.97	3.15	136	8.82
New Shoreham	10.50	1.68	119	8.82

<b>RI 3 month Nov 20-Jan 21</b>	Rainfall	Departure	Percent	Normal
Northwest	17.06	2.98	121	14.08
Northeast	16.39	2.79	121	13.60
Central West	17.71	4.29	132	13.42
Central East	16.44	3.85	131	12.59
Eastern	13.46	0.96	108	12.50
Southern	16.64	2.77	120	13.87
New Shoreham	16.26	2.39	117	13.87

<b>RI 6 month Aug 20-Jan 21</b>	Rainfall	Departure	Percent	Normal
Northwest	25.94	-1.33	95	27.27
Northeast	24.89	-1.43	95	26.32
Central West	27.06	1.19	105	25.87
Central East	25.59	1.55	106	24.04
Eastern	21.79	-2.17	91	23.96
Southern	25.46	-1.25	95	26.71
New Shoreham	27.67	0.96	104	26.71

<b>RI 12 month Feb 20-Jan 21</b>	Rainfall	Departure	Percent	Normal
Northwest	48.74	-4.96	91	53.70
Northeast	47.99	-3.43	93	51.42
Central West	48.62	-2.15	96	50.77
Central East	46.71	-0.47	99	47.18
Eastern	40.36	-8.18	83	48.54
Southern	47.29	-5.58	89	52.87
New Shoreham	46.37	-6.50	88	52.87

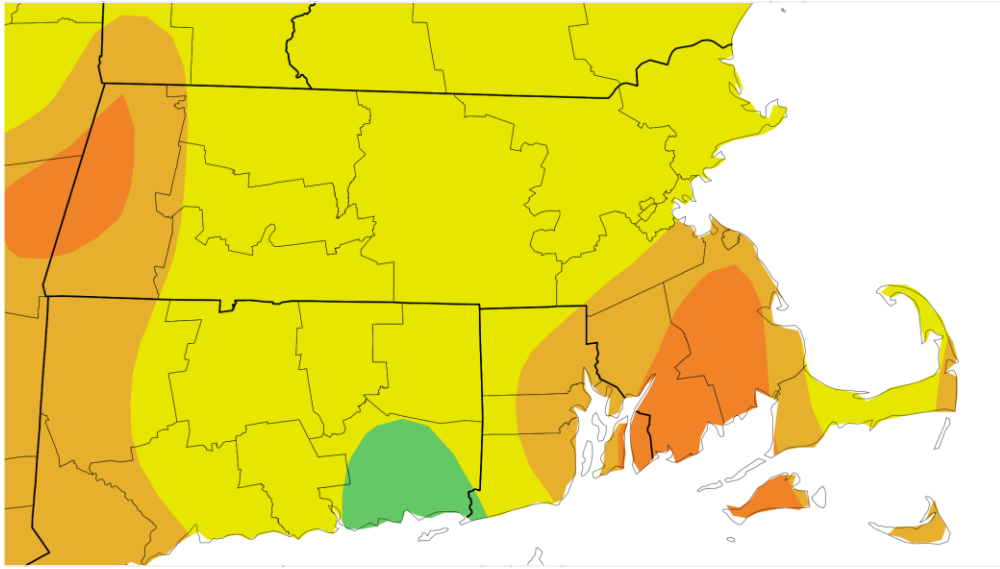
<b>RI 24 month Feb 19-Jan 21</b>	Rainfall	Departure	Percent	Normal
Northwest	105.72	-1.68	98	107.40
Northeast	99.70	-3.14	97	102.84
Central West	105.29	3.75	104	101.54
Central East	97.31	2.95	103	94.36
Eastern	92.16	-4.92	95	97.08
Southern	106.37	0.63	101	105.74
New Shoreham	95.85	-9.89	91	105.74

<b>RI 36 month Feb 18-Jan 21</b>	Rainfall	Departure	Percent	Normal
Northwest	176.46	15.36	110	161.10
Northeast	167.83	13.57	109	154.26
Central West	175.32	23.01	115	152.31
Central East	163.79	22.25	116	141.54
Eastern	150.27	4.65	103	145.62
Southern	168.93	10.32	107	158.61
New Shoreham	153.88	-4.73	97	158.61

<b>RI 4 month Oct 20-Jan 21</b>	Rainfall	Departure	Percent	Normal
Northwest	22.33	3.48	118	18.85
Northeast	21.80	3.55	119	18.25
Central West	23.95	6.08	134	17.87
Central East	22.67	6.15	137	16.52
Eastern	19.13	2.70	116	16.43
Southern	22.95	4.82	127	18.13
New Shoreham	23.00	4.87	127	18.13

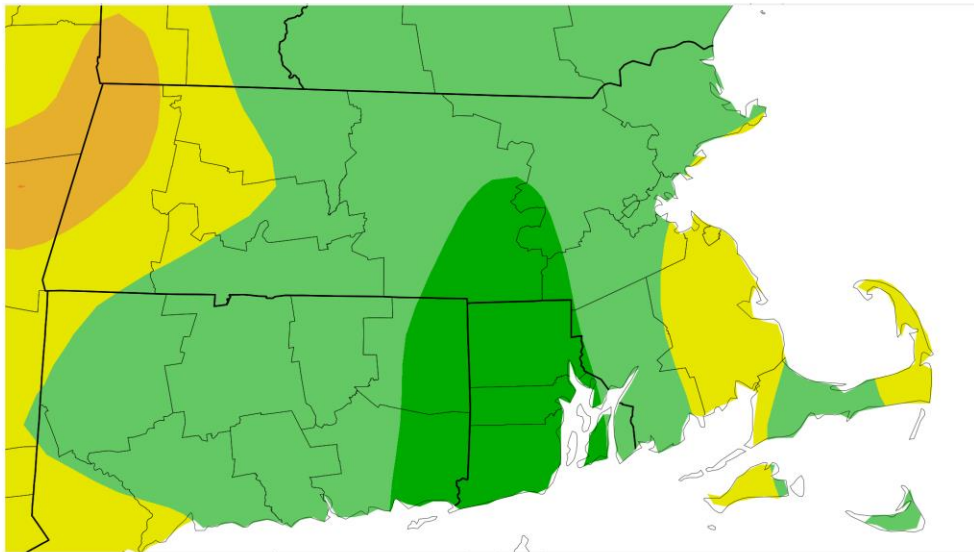
<b>RI 5 month Sep 20-Jan 21</b>	Rainfall	Departure	Percent	Normal
Northwest	23.58	0.64	103	22.94
Northeast	22.89	0.70	103	22.19
Central West	25.02	3.17	114	21.85
Central East	23.95	3.51	117	20.44
Eastern	20.17	0.01	100	20.16
Southern	24.03	1.68	108	22.35
New Shoreham	24.70	2.35	111	22.35

Monthly SPI  
1/1/2021 - 1/31/2021



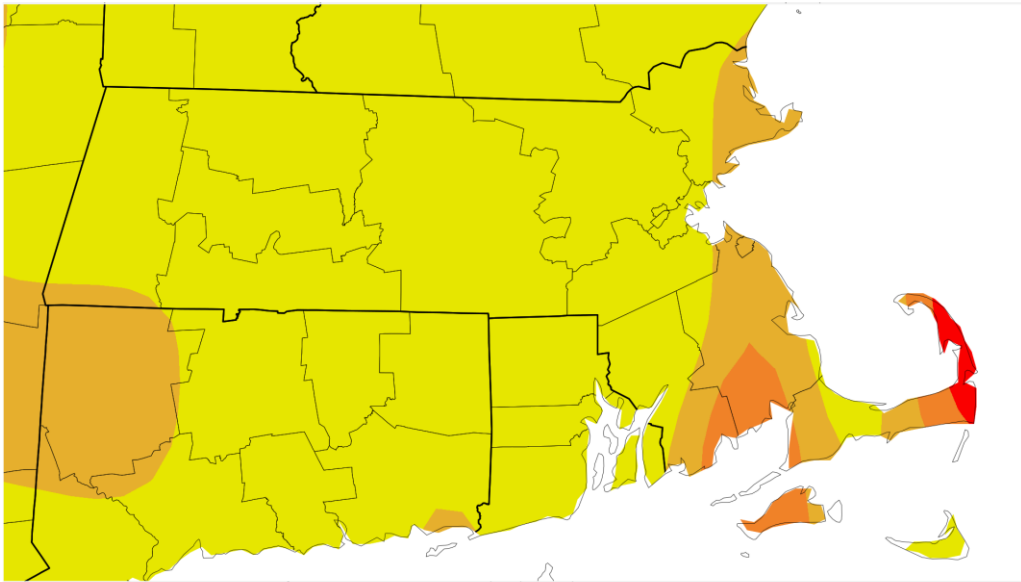
Generated 2/2/2021 at HPRCC using provisional data. NOAA Regional Climate Centers  
Map 1. January 2021 SPI. From the NOAA Regional Climate Centers.

3-Month SPI  
11/1/2020 - 1/31/2021



Generated 2/2/2021 at HPRCC using provisional data. NOAA Regional Climate Centers  
Map 2. Three-Month SPI ending January 2021. From the NOAA Regional Climate Centers.

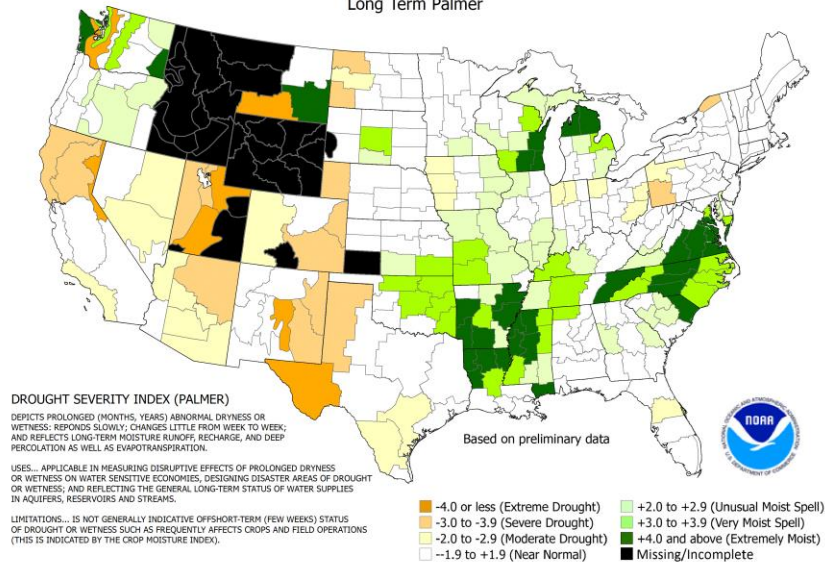
12-Month SPI  
2/1/2020 - 1/31/2021



Generated 2/2/2021 at HPRCC using provisional data. NOAA Regional Climate Centers

Map 3. Twelve month SPI ending January 2021. From the NOAA Regional Climate Centers.

Drought Severity Index by Division  
Weekly Value for Period Ending Jan 30, 2021  
Long Term Palmer



Map 4. Palmer Drought Index from the Climate Prediction Center, NOAA, dated 1/30/21.  
**RI Palmer is in the Normal range, +1.36.**

**U.S. Drought Monitor  
Rhode Island**

**February 2, 2021**  
(Released Thursday, Feb. 4, 2021)  
Valid 7 a.m. EST



**Intensity:**

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme 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:**

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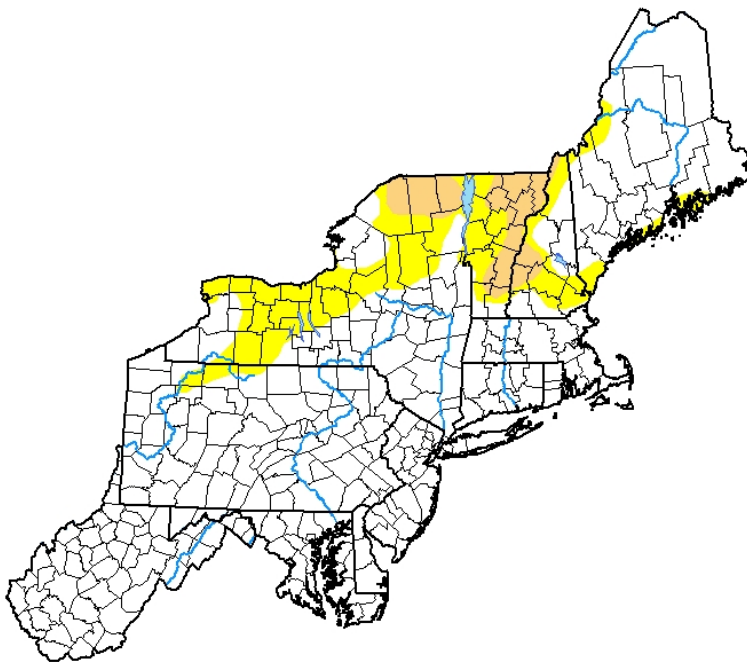


[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)

Map 5. US Drought Monitor for Rhode Island. valid 2/2/2021.

**U.S. Drought Monitor  
Northeast**

**February 2, 2021**  
(Released Thursday, Feb. 4, 2021)  
Valid 7 a.m. EST



**Intensity:**

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme 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>*

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Map 6. US Drought Monitor for the Northeast US, valid 2/2/2021.