

NWS Form E-5
(04-2006)
(PRES. BY NWS Instruction 10-924)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL WEATHER SERVICE

HYDROLOGIC SERVICE AREA (HSA)
Boston/Norton MA

REPORT FOR:
MONTH YEAR
July 2022

MONTHLY REPORT OF HYDROLOGIC CONDITIONS

TO: Hydrologic Information Center, W/OS31
NOAA's National Weather Service
1325 East West Highway
Silver Spring, MD 20910-3283

SIGNATURE
Rodney M. Chai
Meteorologist
DATE
August 3rd 2022

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.

....Drought conditions continue and worsen for portions of southern New England....

July 2022 liquid equivalent precipitation varied across southern New England. Eastern MA, RI, and southeast CT received less than 1 inch to 2 inches of precipitation while Nantucket, central MA and rest of CT received about 2-3 inches of precipitation. This was roughly 2-3 inches and 0-2 inches below normal respectively. Western MA received 3-5 inches which was the most rainfall observed in July 2022 in southern New England. Western MA's rainfall was near to slightly above normal while Nantucket's observed rainfall was near normal for July. Temperatures ranged anywhere from 1-5°F above normal across southern New England with the greatest departures observed over eastern MA and western CT. Boston, MA and Providence, RI climate sites recorded the top 5 driest and warmest July in their sites' periods of record while Hartford, CT recorded a top 10 warmest July in site history.

No freshwater flooding occurred within NWS Boston/Norton's Hydrologic Service Area. More details for major climate sites in southern New England are included in Table 1. In addition to precipitation details, temperature departure from normal as well as warmest average temperature and driest rankings for the month of July are provided.

<i>Location</i>	<i>July Precipitation (Inches)</i>	<i>Precipitation Departure from Normal (Inches)</i>	<i>Temperature Departure from Normal (Degrees F)</i>	<i>Driest July on Record Ranking</i>	<i>Warmest July on Record Ranking</i>
<i>Boston</i>	0.62	-2.65	+3.4	4th	3rd
<i>Worcester</i>	3.54	-0.39	+2.5		
<i>Providence</i>	0.46	-2.45	+2.8	3rd	4th
<i>Hartford</i>	2.66	-1.51	+2.5		7th

Table 1. July 2022 precipitation and departure from normal, temperature departure from normal, and where July ranks in terms of dryness and warmth based on climate site history. Details are for major climate sites in southern New England. Rankings are omitted if climate site(s) did not register top 10 driest/warmest in its station history. All July information is preliminary.

Drought Conditions Continue to Worsen Across Southern New England

Below normal precipitation during the month of July resulted in a continuation of below to much below normal stream flows for many streams and rivers across southern New England. In addition to low stream flows, the

continued lack of precipitation in southern New England resulted in below normal soil moisture and below normal ground water at over half of the ground water wells across southern New England. These dry conditions combined with substantial 60 and 90 day precipitation deficits led to most of RI and most of eastern MA deteriorating from D1, moderate drought to D2, severe drought conditions, on the US Drought Monitor (USDM) on July 28th. Cape Cod and the Islands, which were previously in D0, abnormally dry conditions worsened to D1, moderate drought conditions on the on the USDM. The rest of MA and CT remained in D0 and D1, unchanged from last month. Map 3 provides the USDM maps across New England as of July 28th.

State Drought Declarations

MA:

On July 11th, the MA Drought Management Task Force (DMTF) convened to discuss deteriorating drought conditions within the Commonwealth. On July 12th, MA Energy and Environmental Affairs Secretary Bethany Card announced an update to drought declarations in the Commonwealth. Following below normal rainfall from March through June, a Level 2-Significant Drought was declared across the Connecticut River Valley, Central, Northeast and Southeast Drought Regions. A Level 1-Mild Drought was in effect in the Western and Islands Drought Regions, while Normal Conditions were maintained on Cape Cod. The July 2022 Hydrologic Conditions Report for MA can be accessed via this link <https://www.mass.gov/doc/2022-july-hydrologic-conditions/download>. Map 1 further depicts the Drought Regions in MA, with the associated Drought Levels. According to EEA and the Massachusetts Drought Management Plan, a Level 2-Significant Drought warrants the convening of an inter-agency Mission Group to more closely coordinate on drought assessments, impacts and response within the government. A Level 1-Mild Drought places emphasis on water conservation through education, communication, and planning. Details from MA Drought Management Task Force meetings are available at this link: <https://www.mass.gov/service-details/drought-management-task-force-meetings>

CT:

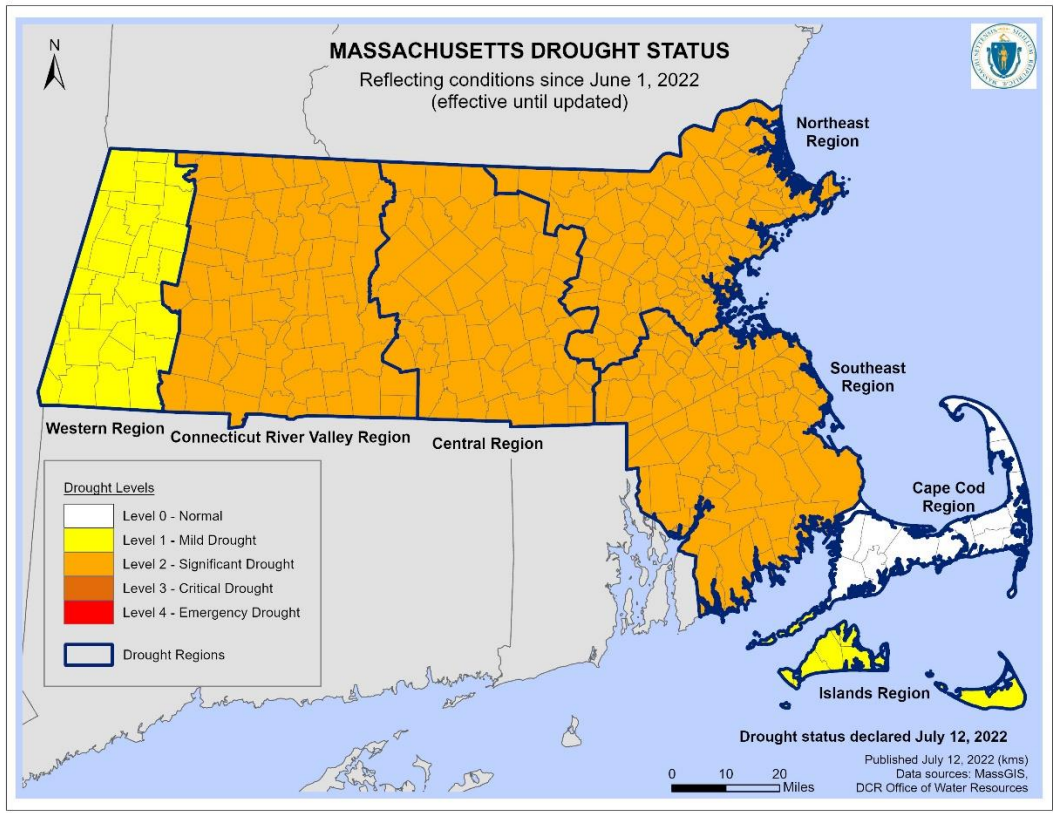
The Connecticut Drought Working Group convened on July 13th to assess drought conditions in the State. On July 14th, Governor Ned Lamont approved the recommendations of the Drought Working Group, declaring that the State is now experiencing Stage 2 Drought Conditions. The declaration was made due to a combination of below normal rainfall, below normal river and groundwater levels, and below normal soil moisture. On July 14th a Press Release was sent from the [CT Office of Policy and Management](#). More details can be found at the [Connecticut Drought Information Center](#).

RI:

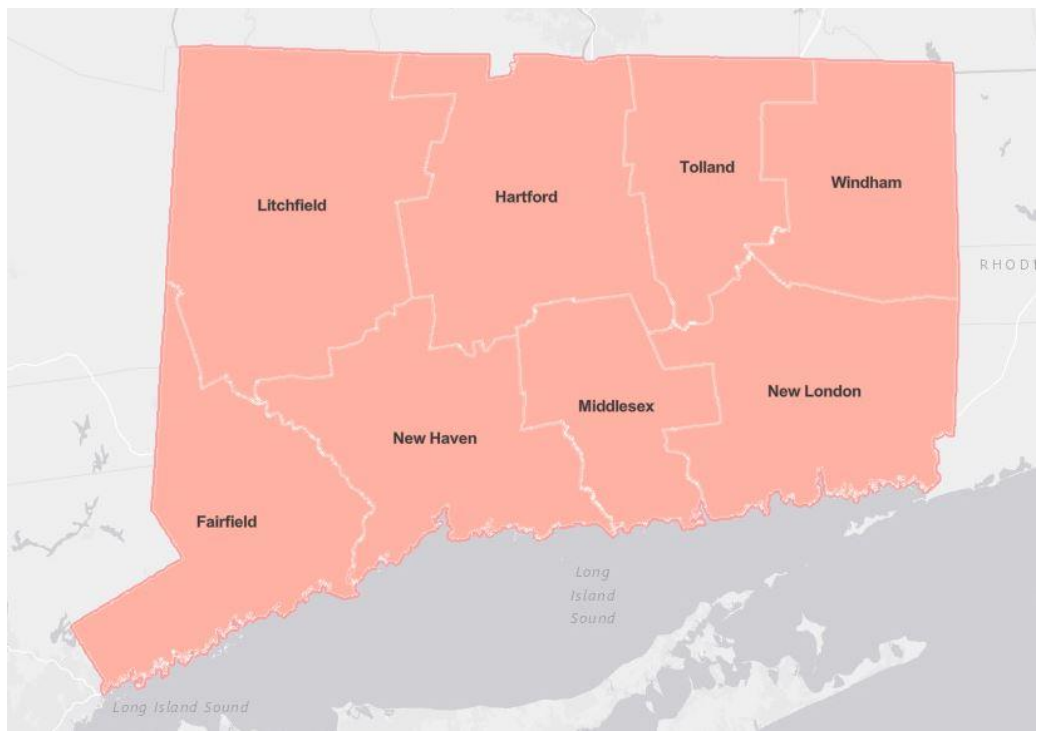
RI will be holding a Drought Steering Committee meeting on August 9th. The RI Water Resources Board is continuing to monitor conditions closely, including briefing members of the RI Drought Steering Committee on a regular basis. The [Rhode Island Drought Monitoring Dashboard](#) contains more information. Monthly conditions reports and updates to Drought Levels are available [here](#).

Streamflow and Groundwater

Most USGS stream gages in southern New England were running below to much below normal for this time of year. Only about 20% of stream gages were running near normal. The vast majority of gages running much below normal were focused across the eastern half of southern New England while the gages running below to near normal were focused across the western half of southern New England. About half of all ground water gages were running below to much below normal, while the other half were running near normal.



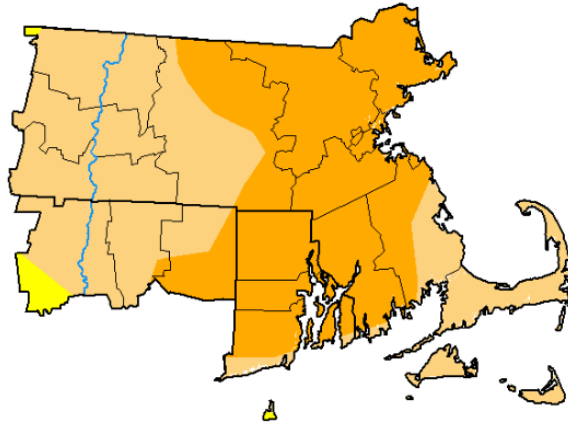
Map 1: Massachusetts Drought Status for July 2022, retroactive to June 1st. Map from the MA Department of Conservation and Recreation, Office of Water Resources.



Map 2: Connecticut Drought Status as of July 14th, 2022. All of CT are currently in Stage 2 drought.

U.S. Drought Monitor Boston/Norton, MA WFO

July 26, 2022
(Released Thursday, Jul. 28, 2022)
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	98.35	48.99	0.00	0.00
Last Week <small>07-19-2022</small>	0.01	99.99	97.71	21.56	0.00	0.00
3 Months Ago <small>04-26-2022</small>	100.00	0.00	0.00	0.00	0.00	0.00
Start of Calendar Year <small>01-04-2022</small>	100.00	0.00	0.00	0.00	0.00	0.00
Start of Water Year <small>09-28-2021</small>	99.76	0.24	0.00	0.00	0.00	0.00
One Year Ago <small>07-27-2021</small>	95.26	4.74	2.12	0.00	0.00	0.00

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>

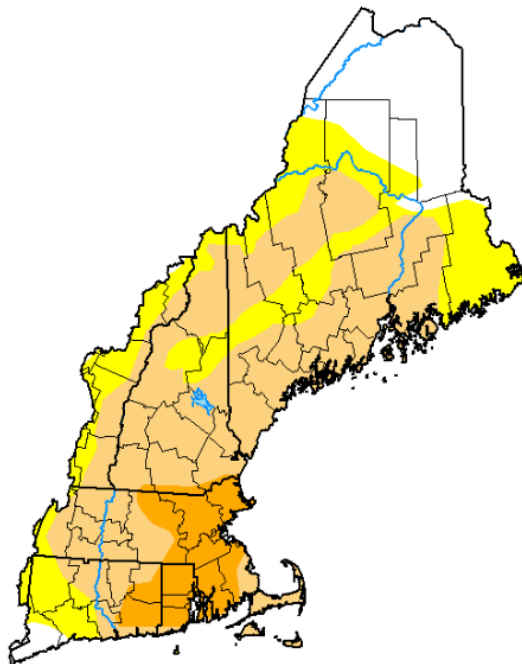
Author:
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National Drought Mitigation Center



droughtmonitor.unl.edu

U.S. Drought Monitor New England Watershed

July 26, 2022
(Released Thursday, Jul. 28, 2022)
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	16.54	83.46	57.89	9.49	0.00	0.00
Last Week <small>07-19-2022</small>	15.15	84.85	64.79	4.09	0.00	0.00
3 Months Ago <small>04-26-2022</small>	86.50	13.50	3.21	0.00	0.00	0.00
Start of Calendar Year <small>01-04-2022</small>	81.86	18.14	6.91	2.88	0.00	0.00
Start of Water Year <small>09-28-2021</small>	76.65	23.35	8.91	2.70	0.00	0.00
One Year Ago <small>07-27-2021</small>	50.87	49.13	22.07	4.68	0.00	0.00

Intensity:
 None
 D0 Abnormally Dry
 D1 Moderate Drought
 D2 Severe Drought
 D3 Extreme Drought
 D4 Exceptional Drought

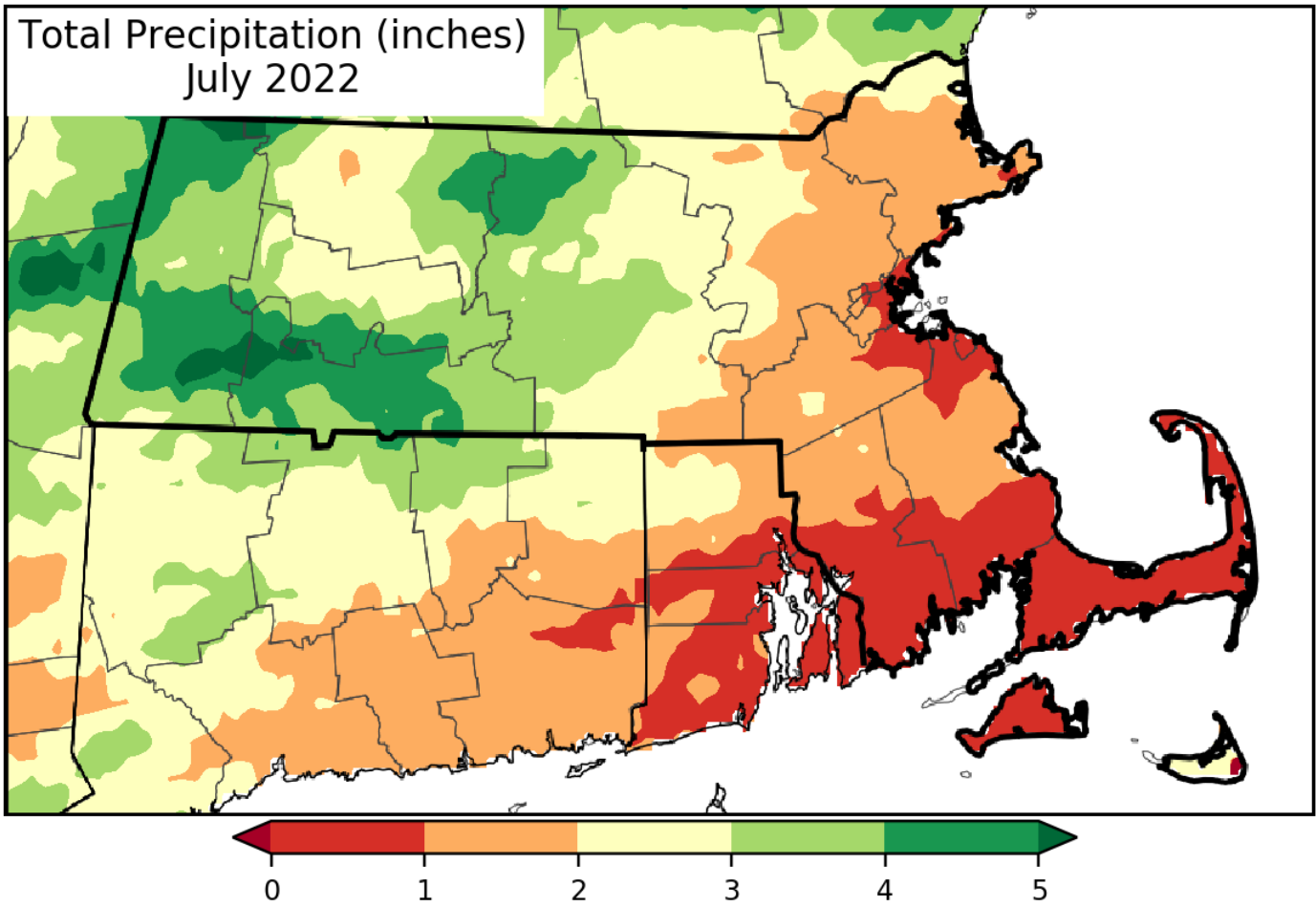
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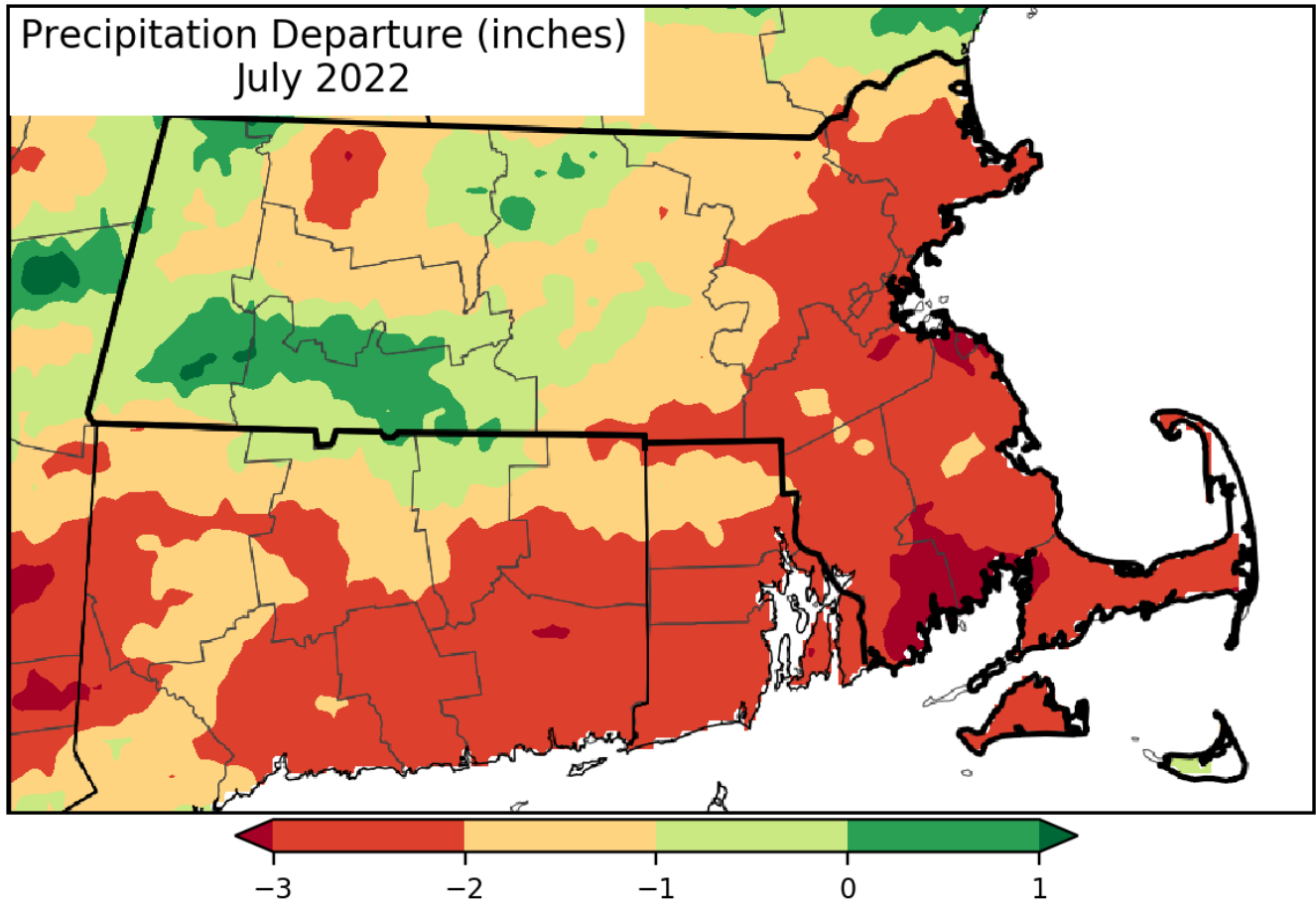


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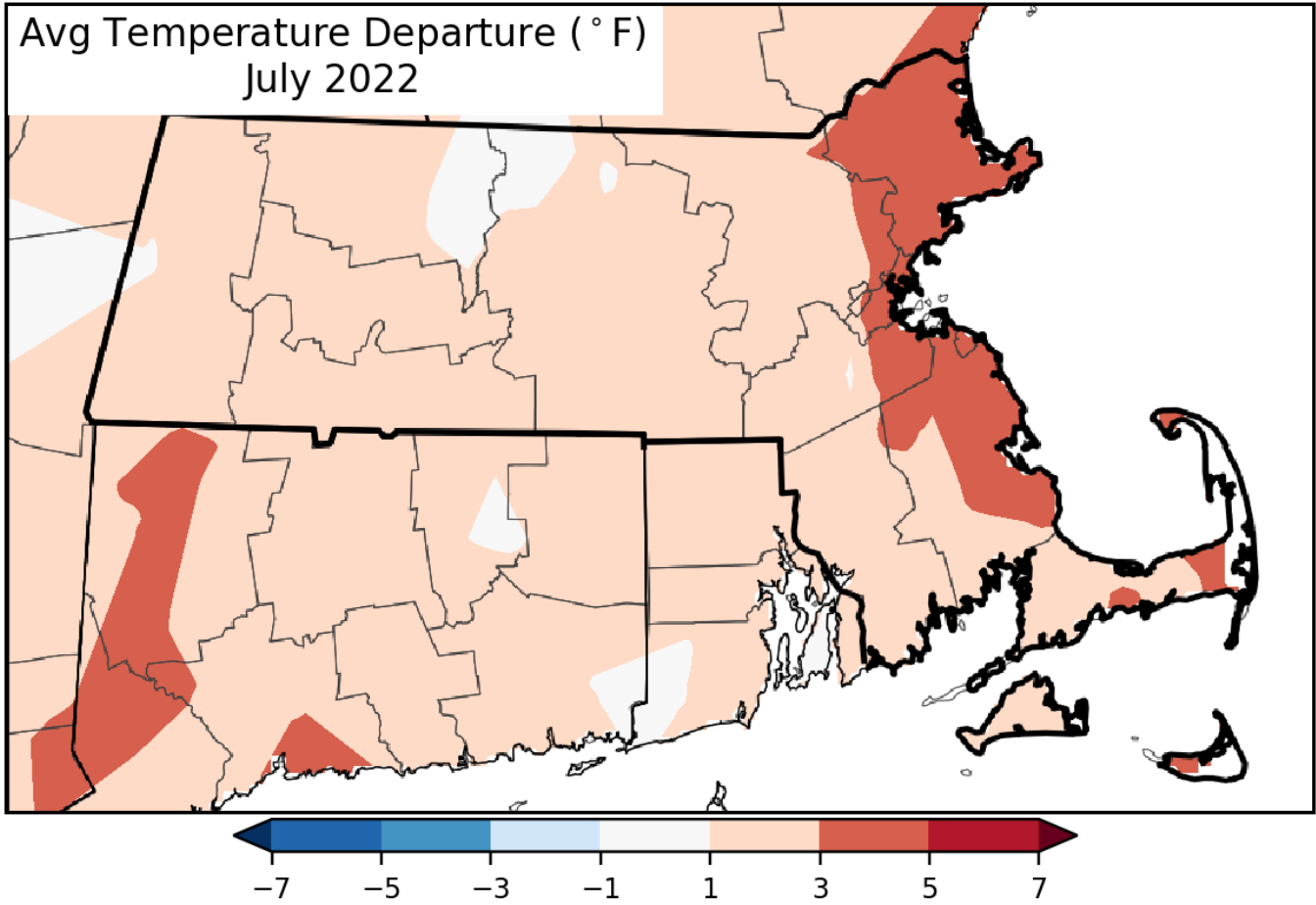
Map 3: US Drought Monitor for NWS Boston (top) and New England (bottom), effective July 26th.



Map 4: July 2022 liquid equivalent precipitation for southern New England. From the Northeast Regional Climate Center.



Map 5. July 2022 precipitation departure from normal for southern New England. From the Northeast Regional Climate Center.



Map 6. Average temperature departure from normal across southern New England for July 2022.
From the Northeast Regional Climate Center.