



# New Hampshire Drought Management Team (DMT)

3 September, 2020

## Announcements;

- If WebEx crashes, this meeting will be rescheduled for next week.
- Note that this meeting is being recorded for later posting.
- Please hold questions till the end to ensure we have time to cover all material.





**New Hampshire Drought Management Team (DMT)  
Agenda  
September 3, 2020 – 2:30 PM  
WebEx**



**Introductions of Presenters and Agenda – Commissioner Scott NHDES**

**Current Drought conditions and Forecast for New Hampshire, Mary Stampone, UNH – State Climatologist**

**Drought Impacts**

**Rivers and Streams, Ted Diers, Administrator, Watershed Bureau, Water Division, NHDES  
Reservoirs, Jim Gallagher, Administrator, Dam Bureau, Water Division, NHDES  
Groundwater, Shane Csiki, NHGS  
Drinking Water, Brandon Kernan, Administrator, DWGB, Water Division, NHDES  
Agriculture, Commissioner Jasper, NH Dept. of Agriculture  
Forest Fire, TBD**

**Ongoing Actions**

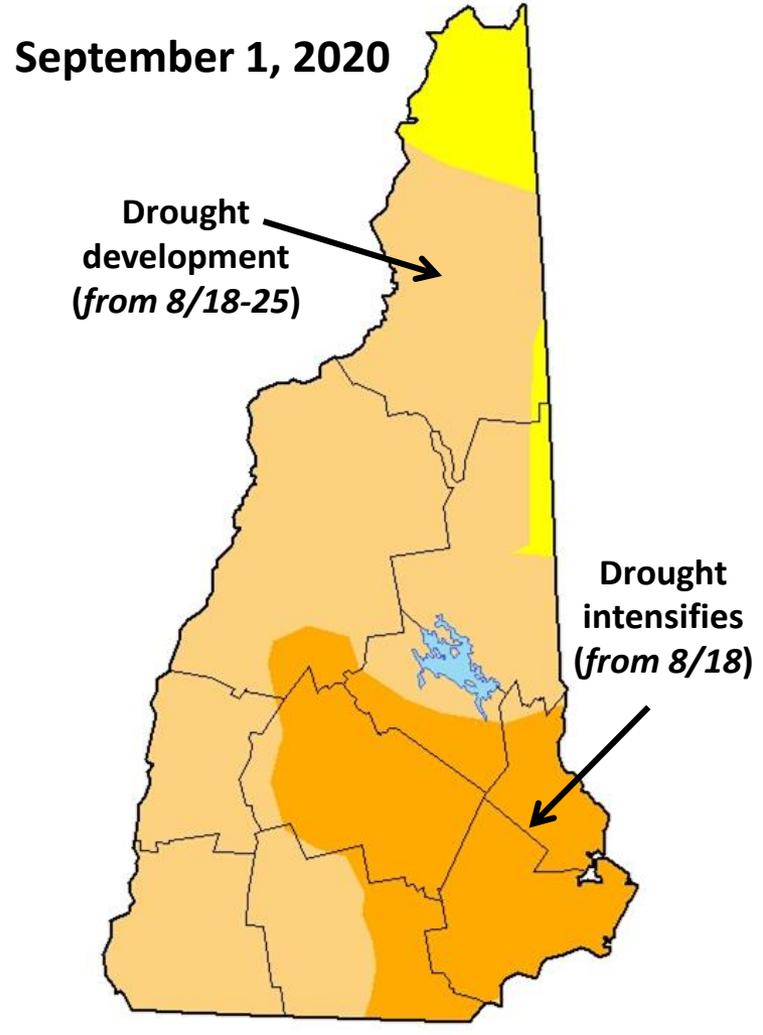
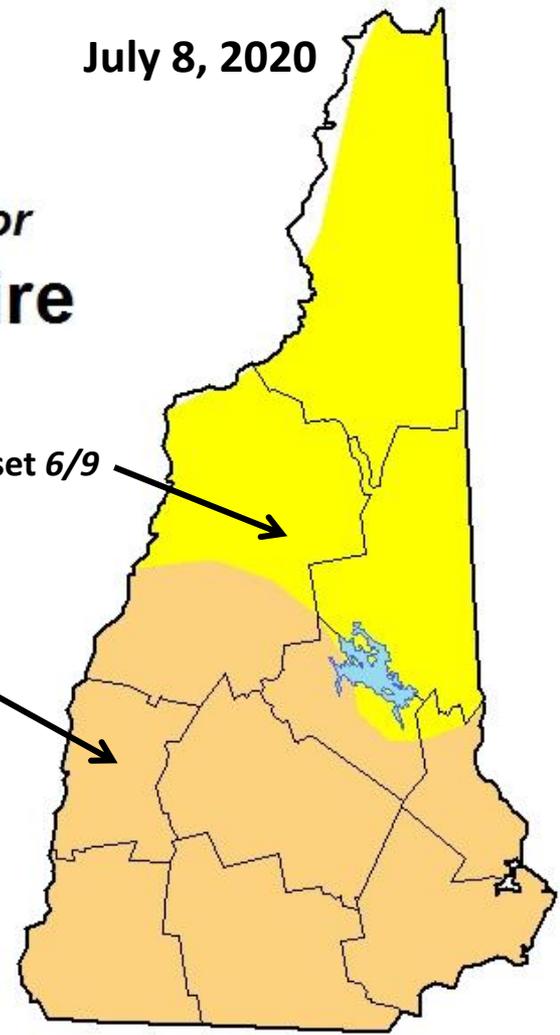
**Messaging: Informing and Public Messaging Jim Martin, Public Information, NHDES  
Messaging: Well Protection Messaging, Abby Fopiano, DWGB, NHDES**

**Drought Management Team Discussion (input from all DMT participants)**

**Recommended responses to any specific impacts  
Recommended public messaging  
Next steps  
Next session; proposed for 1 October 2020**

# II. Current Drought and Forecast for New Hampshire

## U.S. Drought Monitor New Hampshire



**Intensity:**

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

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
2020-07-07	0.04	99.96	56.45	0.00	0.00	0.00
2020-09-01	0.00	100.00	92.85	28.31	0.00	0.00

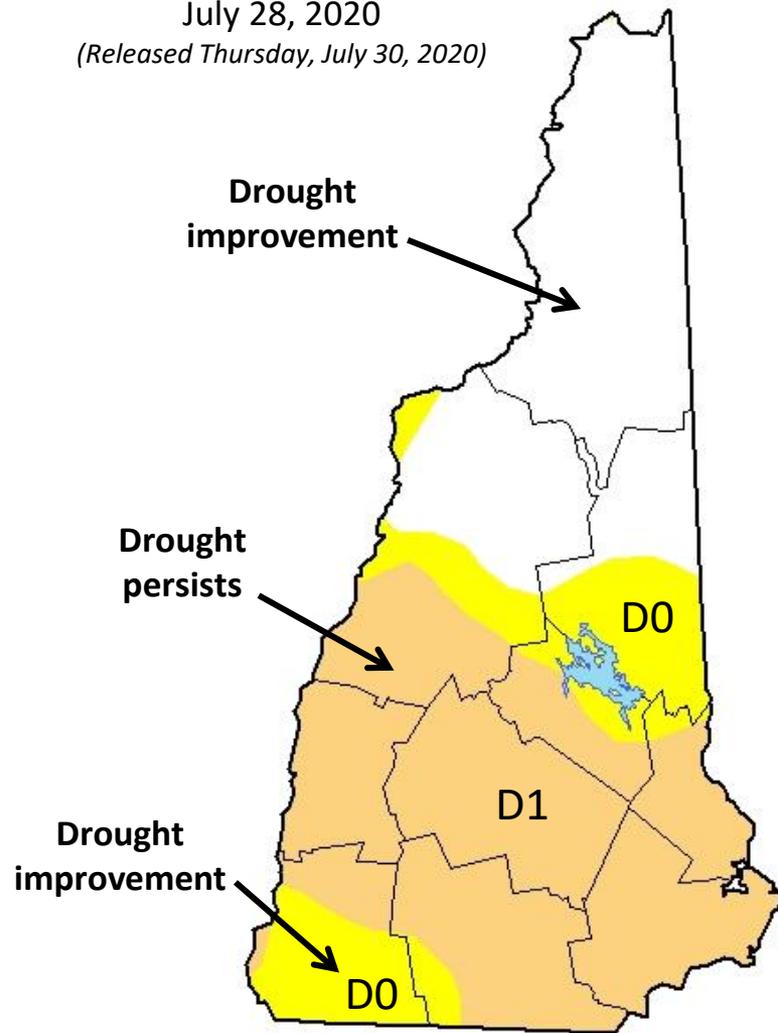
<http://droughtmonitor.unl.edu/>



## II. Current Drought and Forecast for New Hampshire

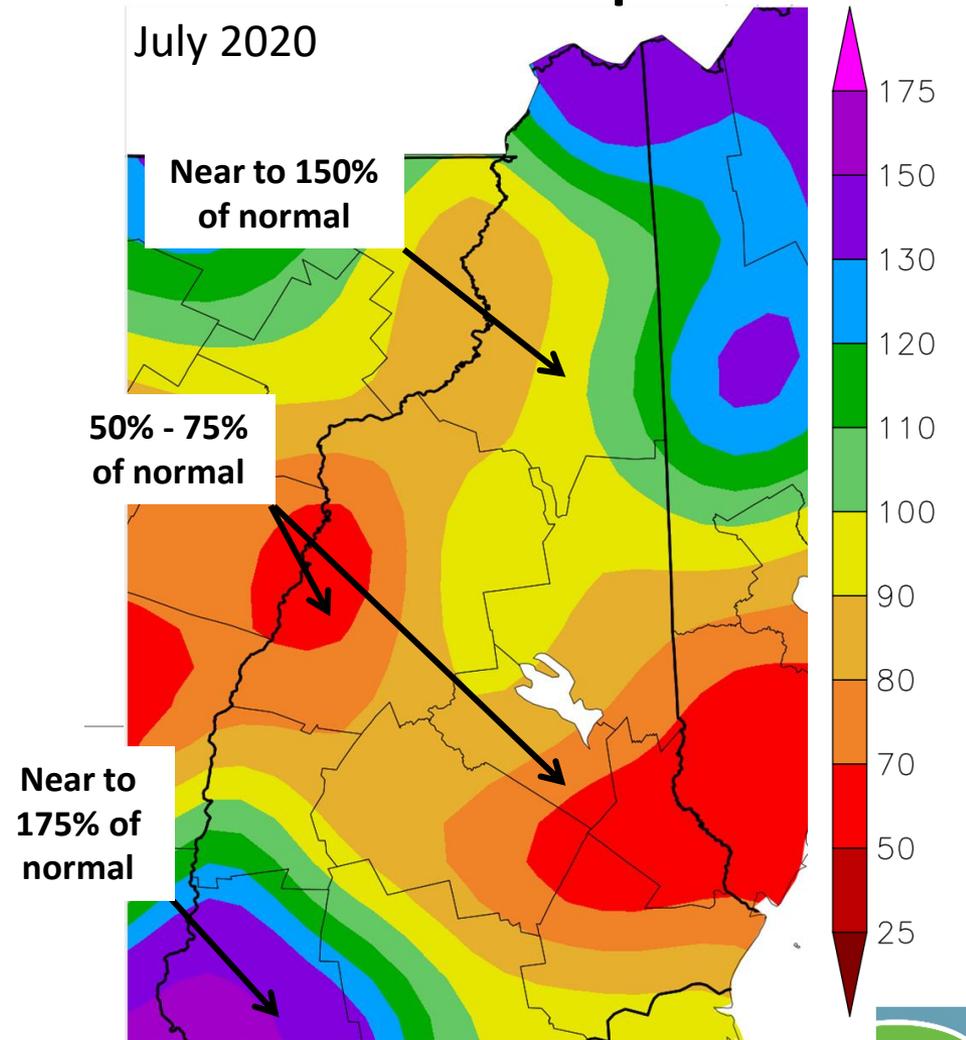
### US Drought Monitor

July 28, 2020  
(Released Thursday, July 30, 2020)



### % of Normal Precipitation

July 2020

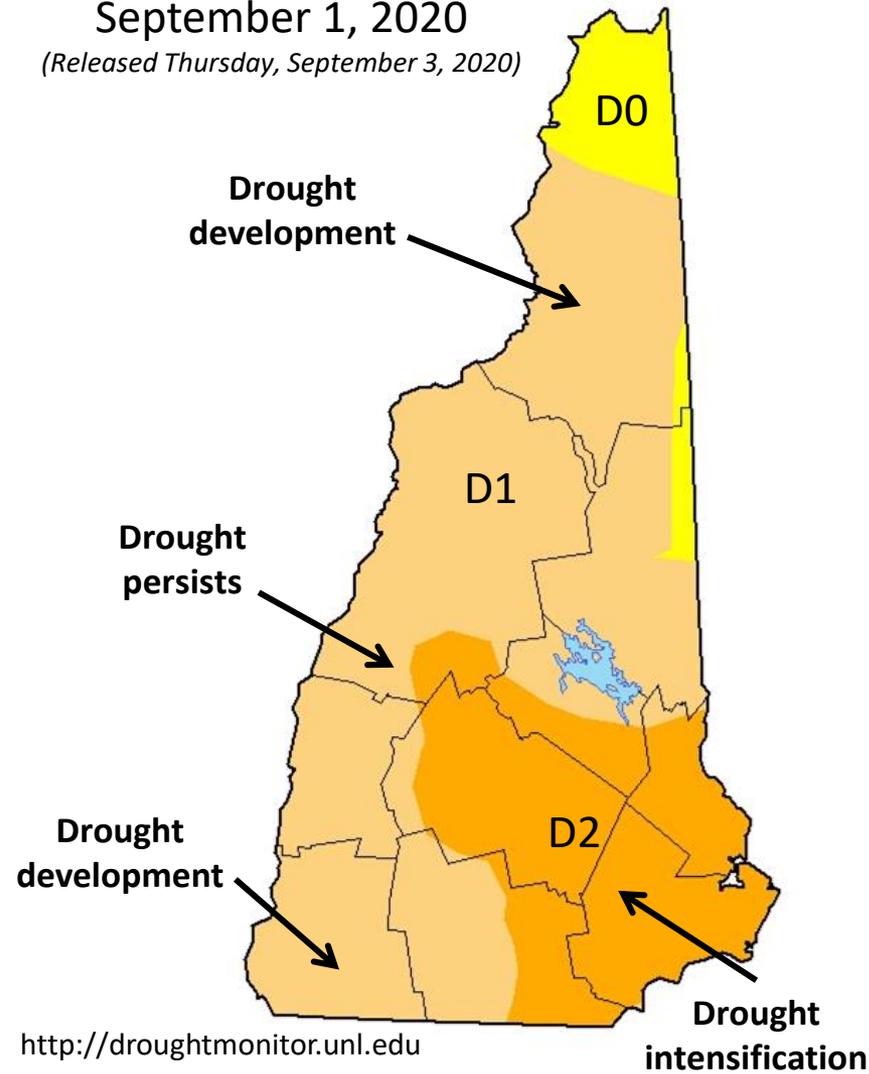


## II. Current Drought and Forecast for New Hampshire

### US Drought Monitor

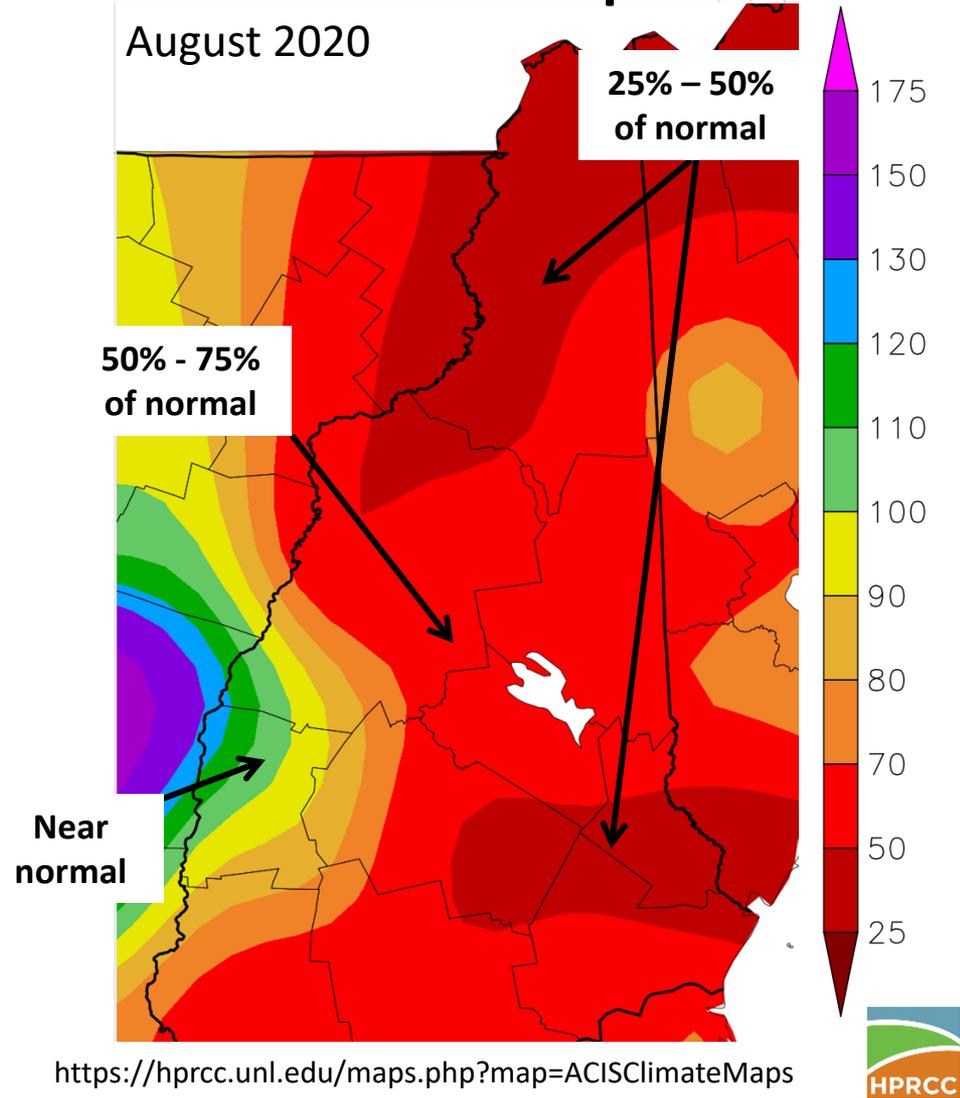
September 1, 2020

(Released Thursday, September 3, 2020)



### % of Normal Precipitation

August 2020

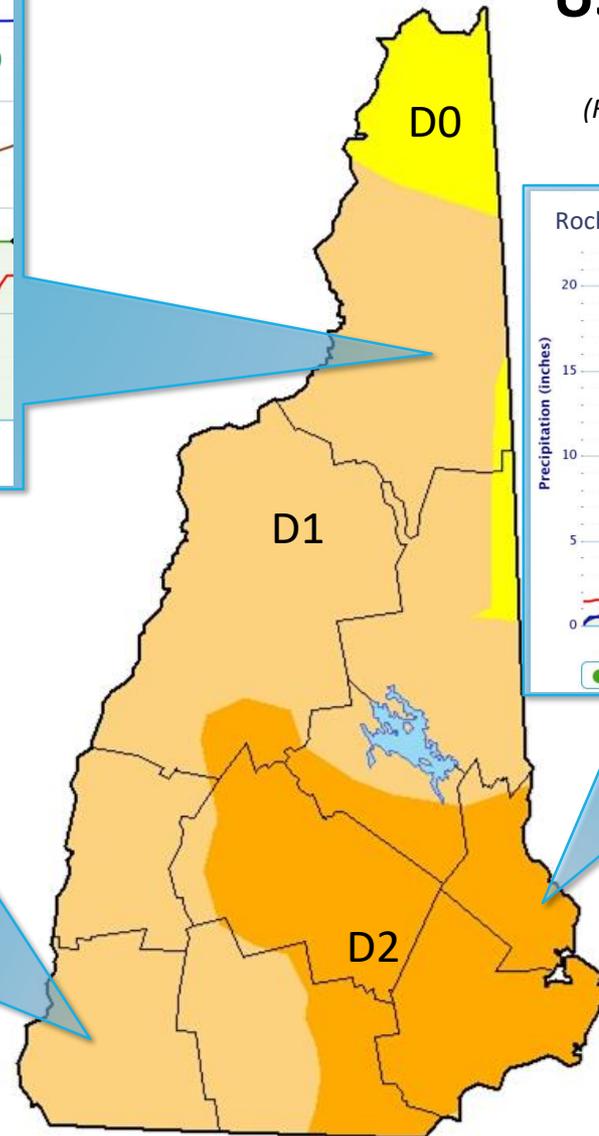
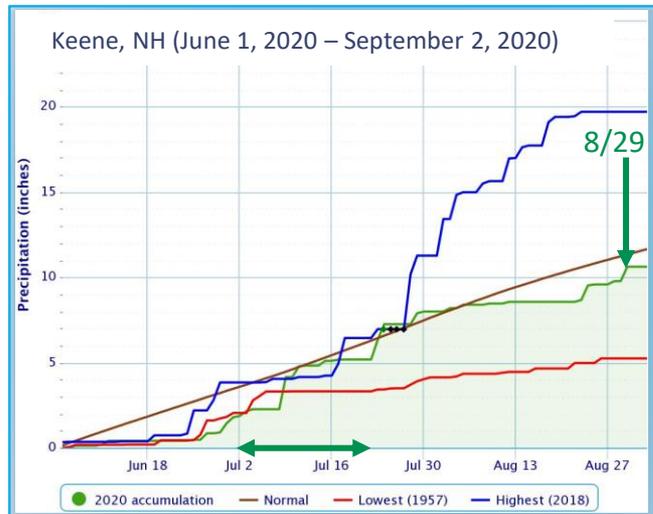
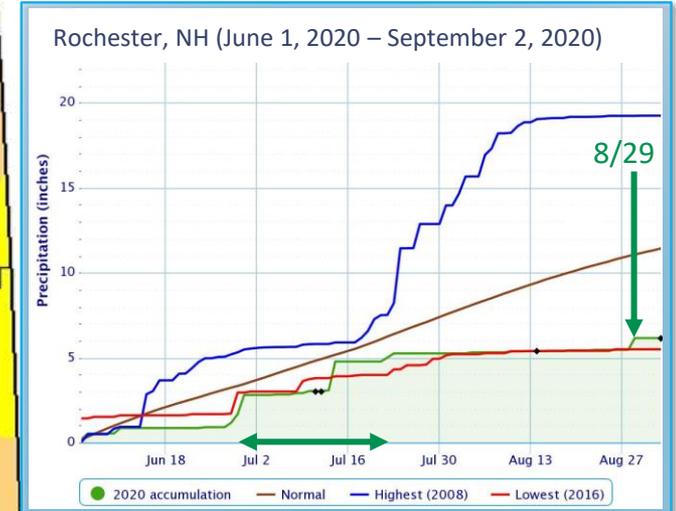
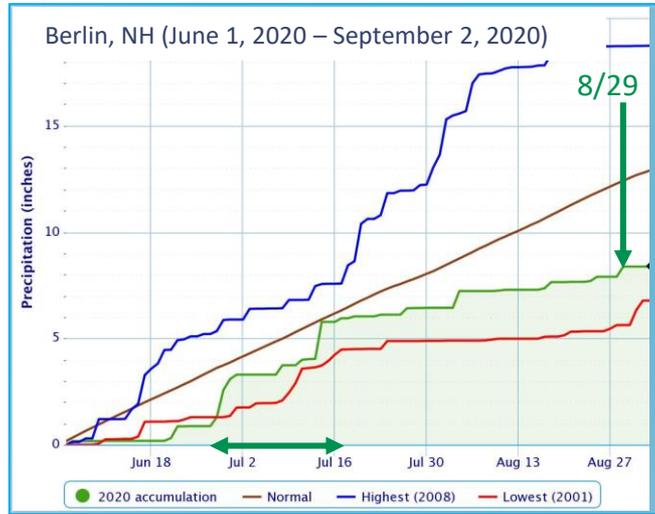


# II. Current Drought and Forecast for New Hampshire

## US Drought Monitor

September 1, 2020

(Released Thursday, September 3, 2020)



Summer season precipitation deficits across southeastern NH 50% of normal.



# II. Current Drought and Forecast for New Hampshire

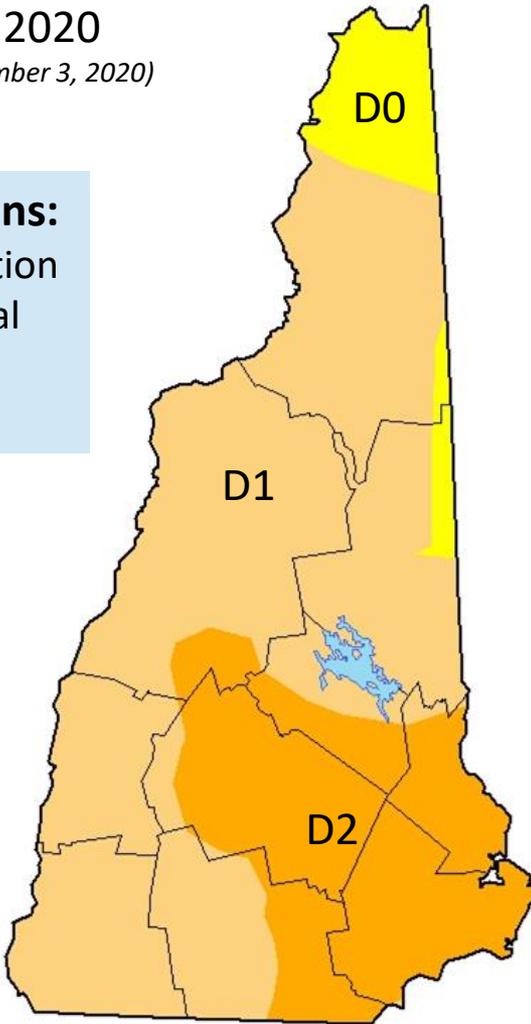
## US Drought Monitor

September 1, 2020

(Released Thursday, September 3, 2020)

### Current conditions:

- 3-mo precipitation < 75% of normal
- 3-month SPI & PSDI < -1.0



### Intensity:

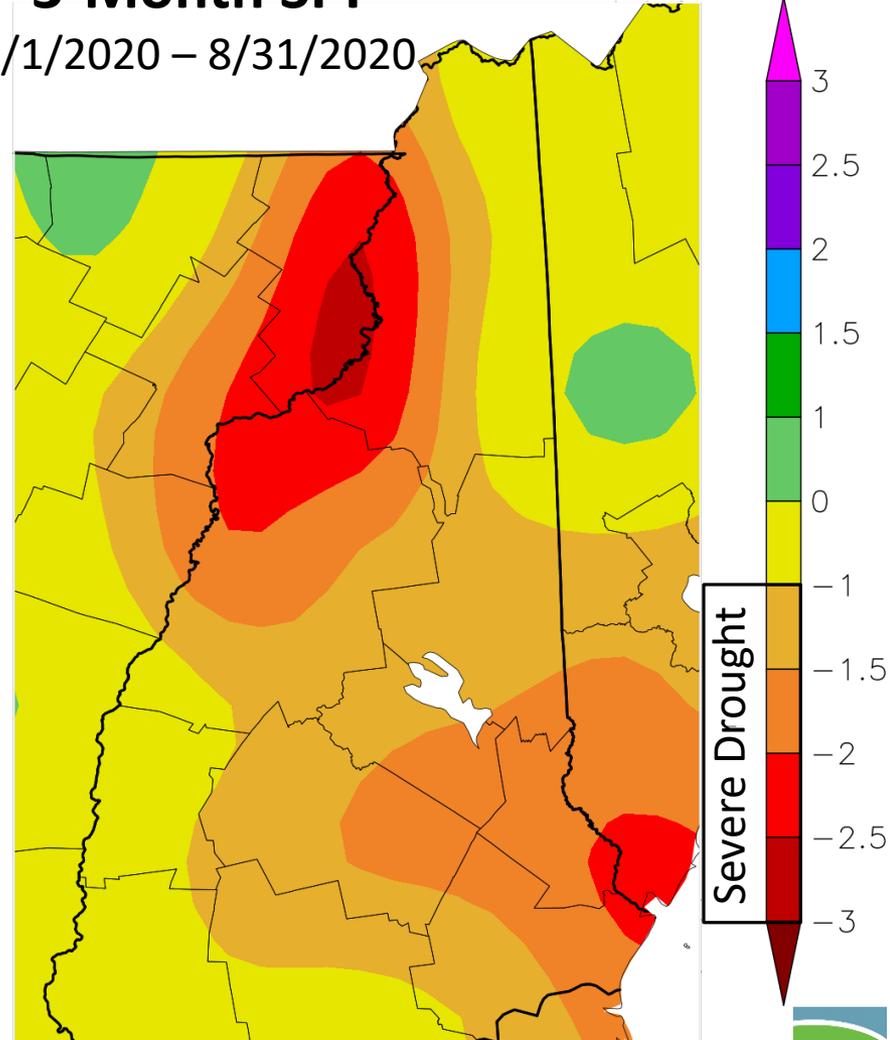
- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought



<http://droughtmonitor.unl.edu/>

## 3-Month SPI

6/1/2020 – 8/31/2020



<https://hprcc.unl.edu/maps.php?map=ACISClimateMaps>



# II. Current Drought and Forecast for New Hampshire

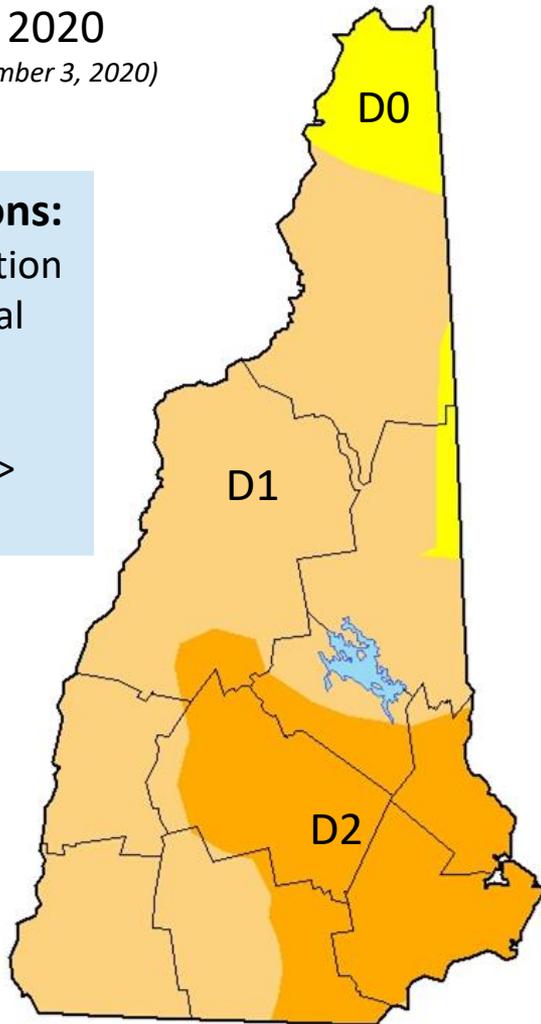
## US Drought Monitor

September 1, 2020

(Released Thursday, September 3, 2020)

### Current conditions:

- 3-mo precipitation < 75% of normal
- 3-month SPI & PSDI < -1.0
- 1-month EDDI > 80% percentile



### Intensity:

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

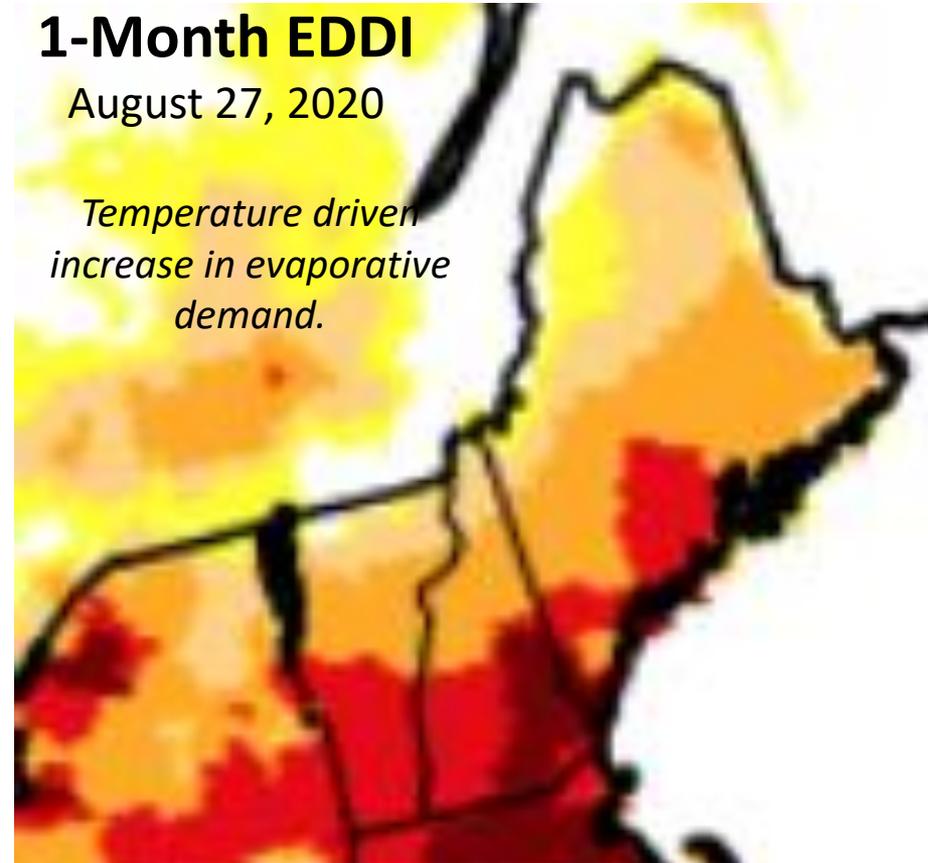


<http://droughtmonitor.unl.edu/>

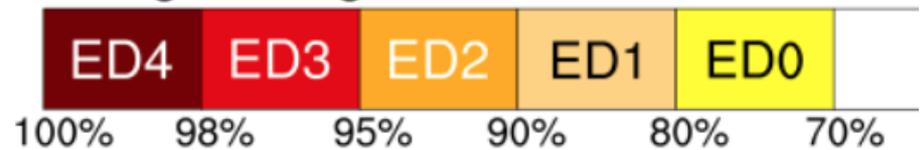
## 1-Month EDDI

August 27, 2020

*Temperature driven increase in evaporative demand.*



### Drought categories



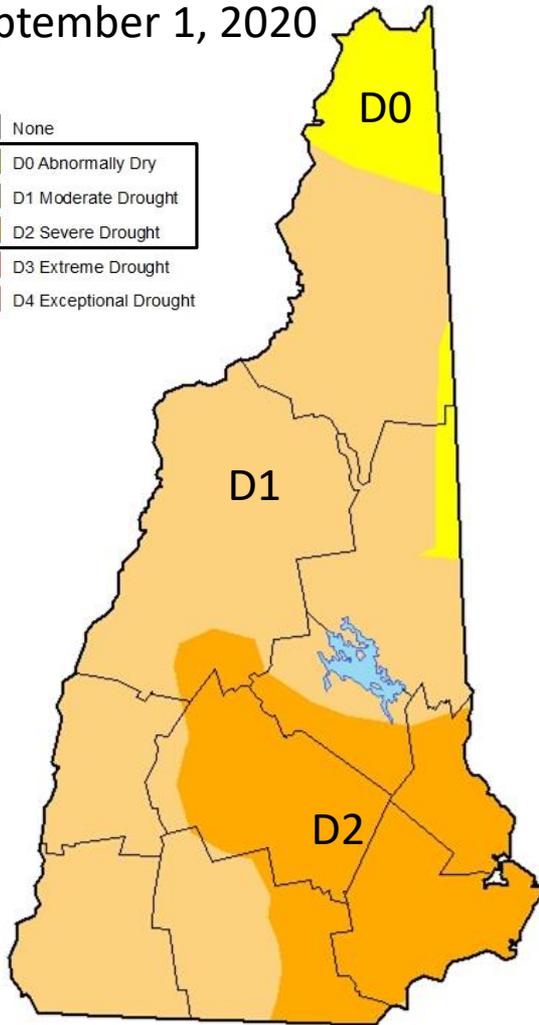
<https://psl.noaa.gov/> Generated by NOAA/ESRL/Physical Sciences Laboratory



# II. Current Drought and Forecast for New Hampshire

## US Drought Monitor

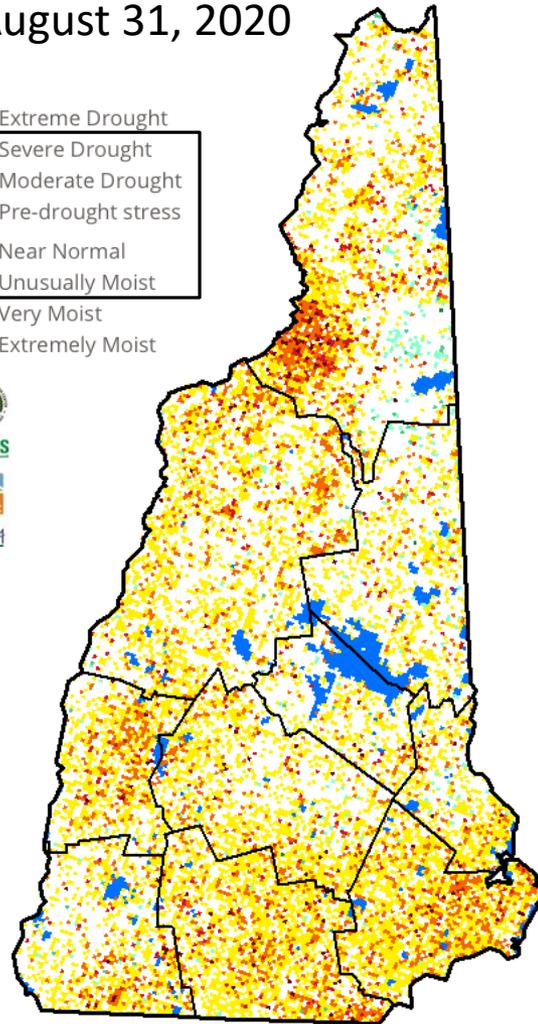
September 1, 2020



<http://droughtmonitor.unl.edu>

## VegDRI

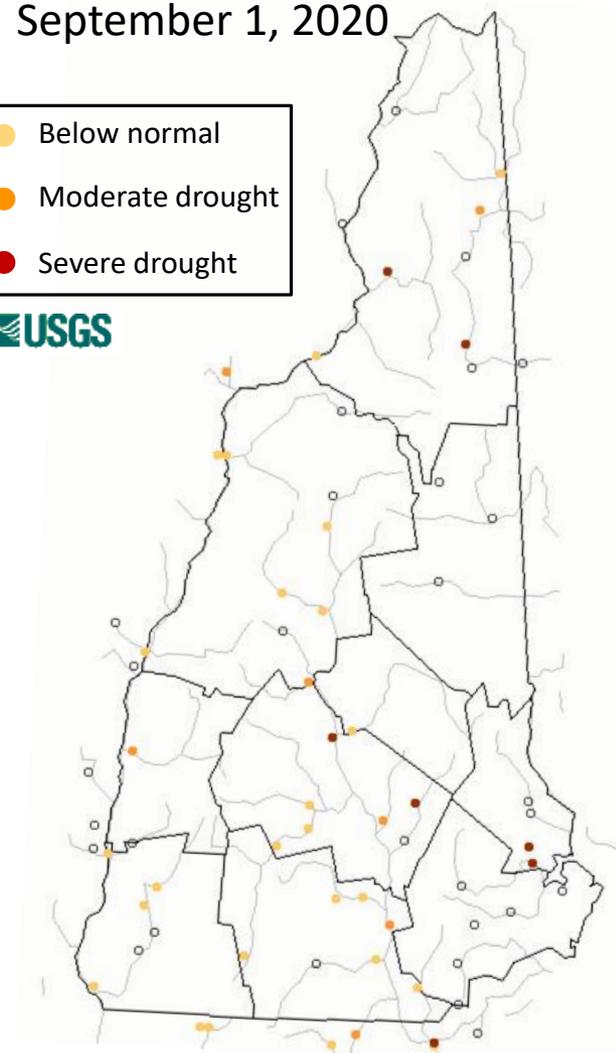
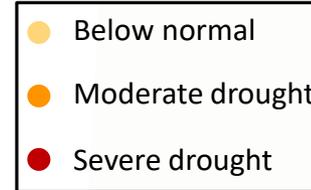
August 31, 2020



<https://veg dri.unl.edu/Home/StateVegDRI.aspx?NH>

## Hydrologic Drought

September 1, 2020



<https://waterwatch.usgs.gov/index.php>

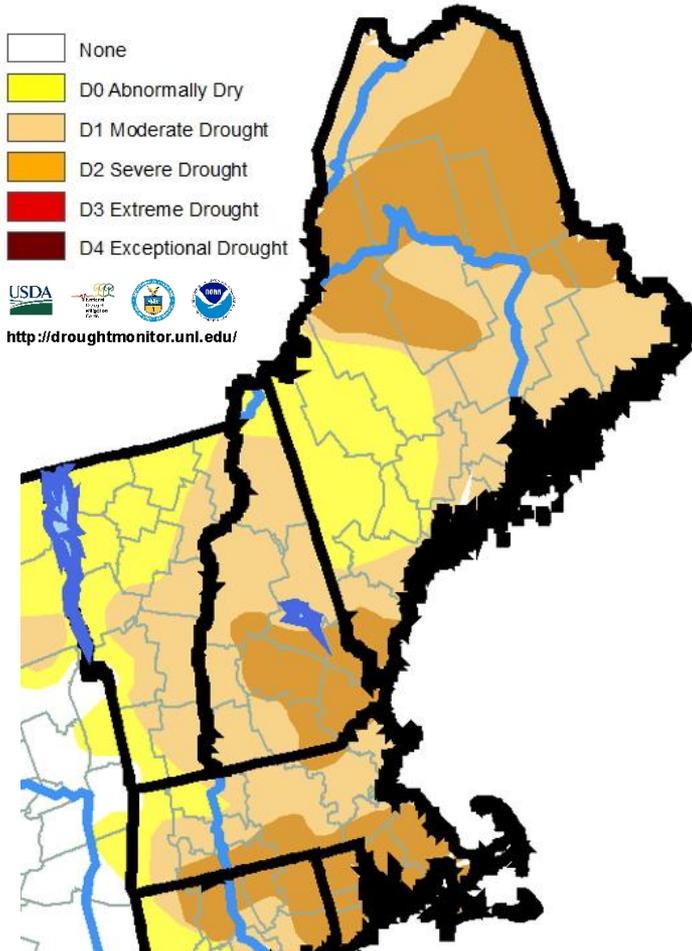


# II. Current Drought and Forecast for New Hampshire

## US Drought Monitor

September 1, 2020

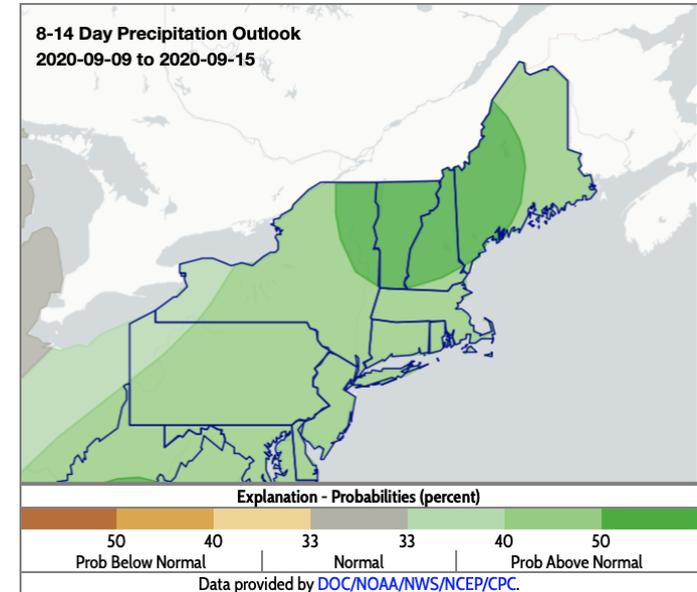
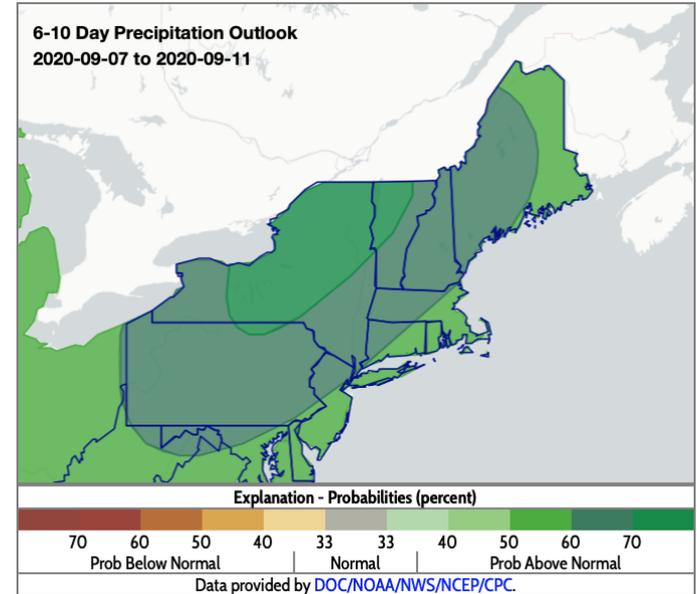
(Released Thursday, September 3, 2020)



- ~0.5 inches precipitation forecast through 9/9

- Chance for above normal precipitation through 9/15

- Precipitation outlooks uncertain for one & three months

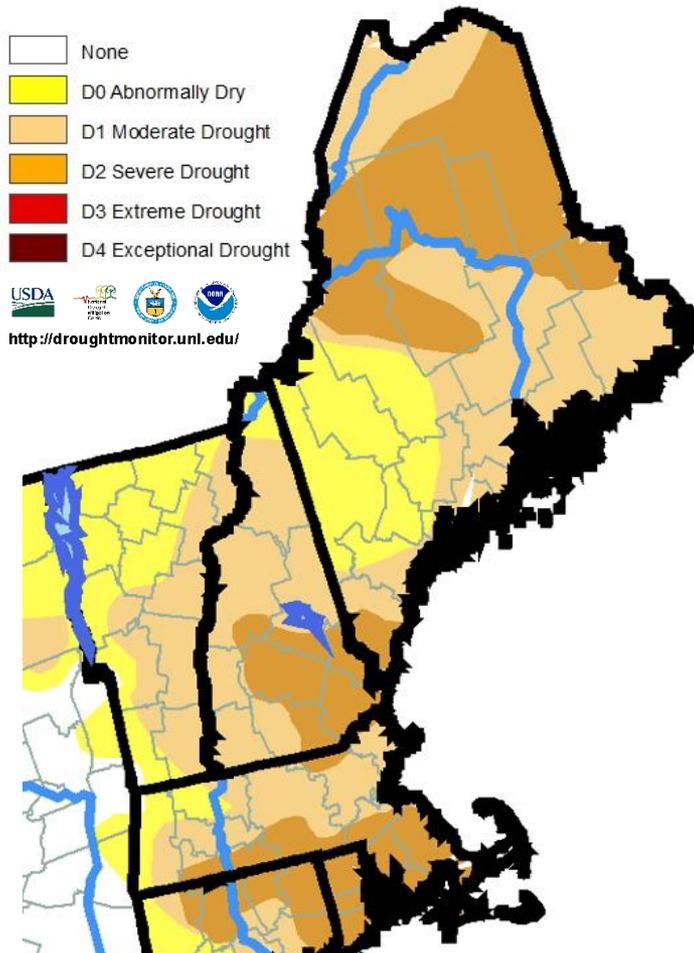


# II. Current Drought and Forecast for New Hampshire

## US Drought Monitor

September 1, 2020

(Released Thursday, September 3, 2020)

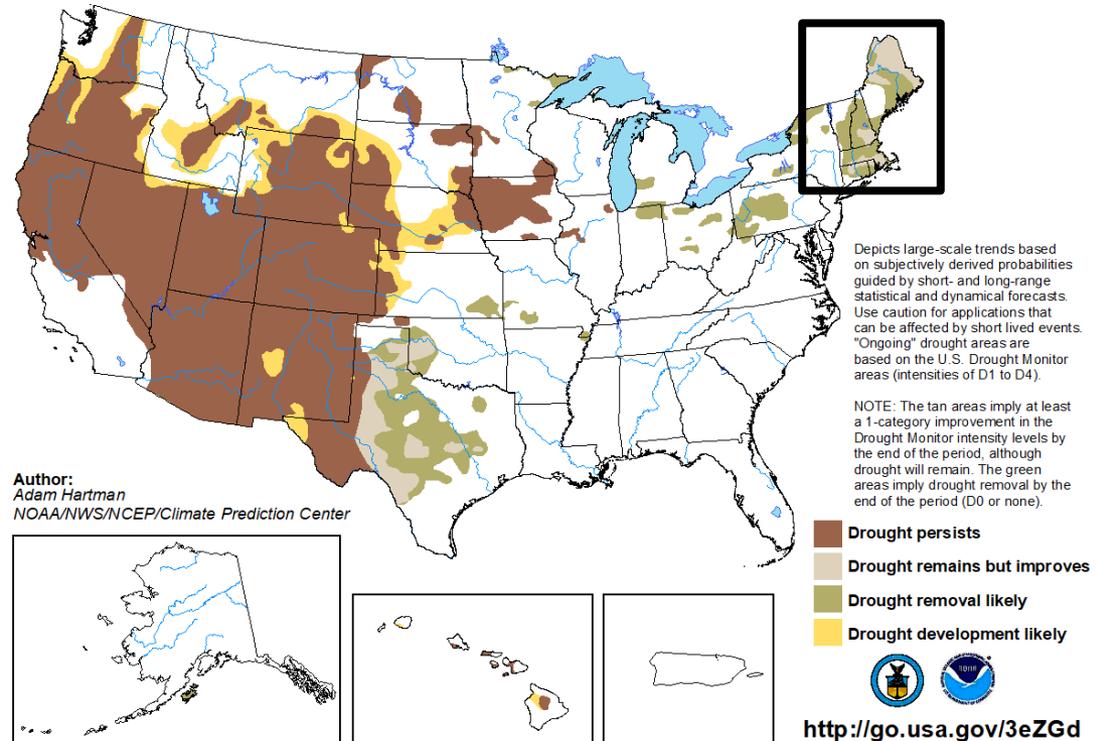


## Drought improvement likely in September:

- Removal likely for "D1" areas
- Improvement, but persists in "D2" area

## U.S. Monthly Drought Outlook Drought Tendency During the Valid Period

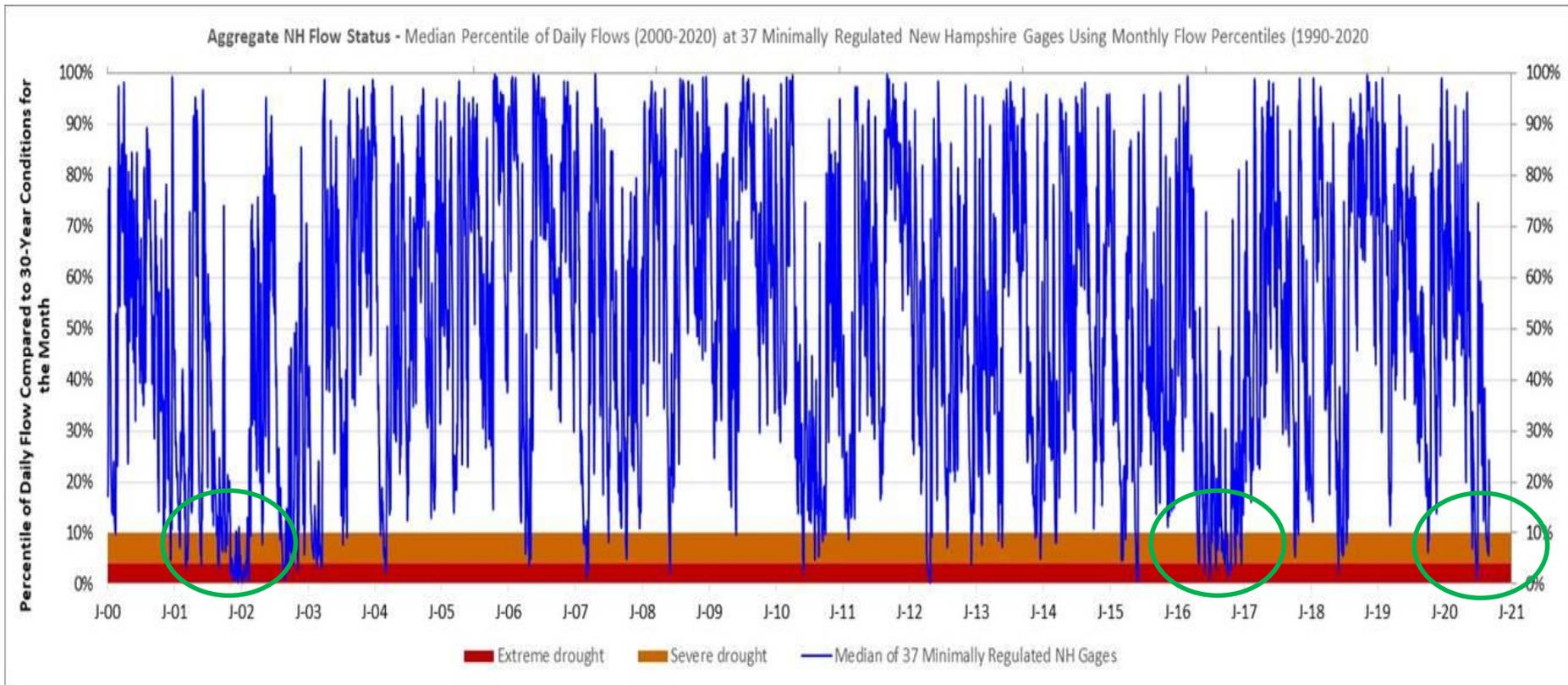
Valid for September 2020  
Released August 31, 2020





### III. a. Rivers and Streams, Ted Diers, Administrator, Watershed Bureau, Water Division, NHDES

- Stream Conditions – Very low historically, especially in coast/southeast.

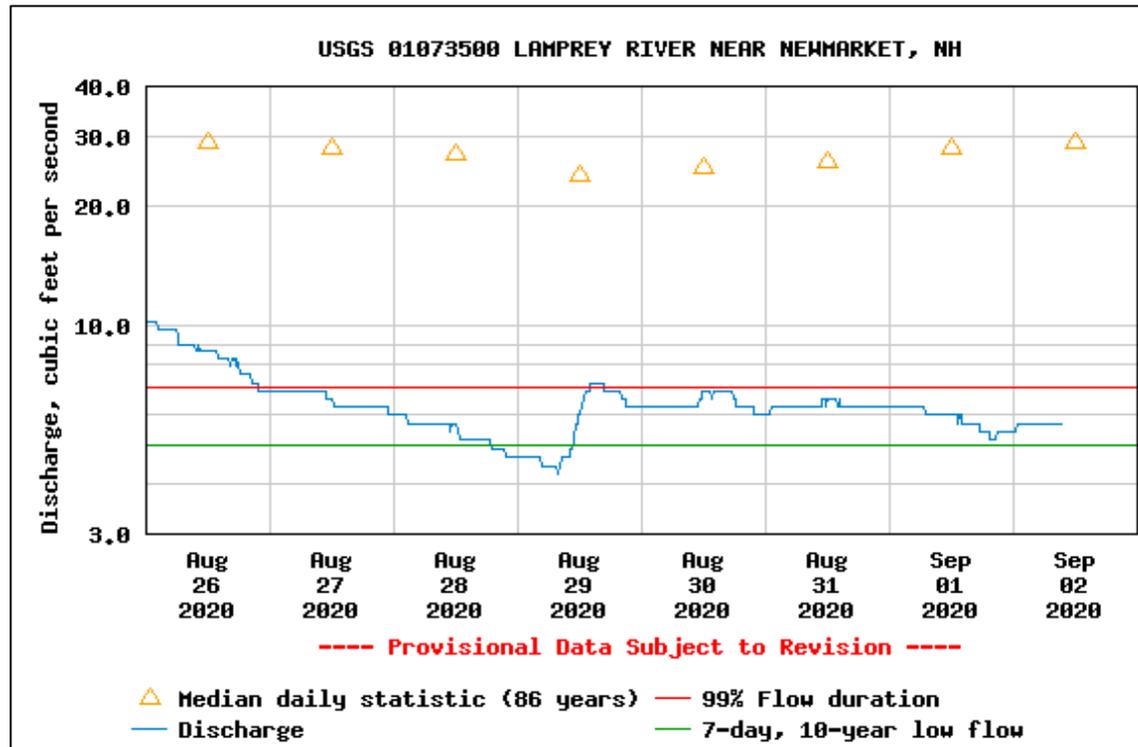




### III. a. Rivers and Streams, Ted Diers, Administrator, Watershed Bureau, Water Division, NHDES

# Instream Flow Program

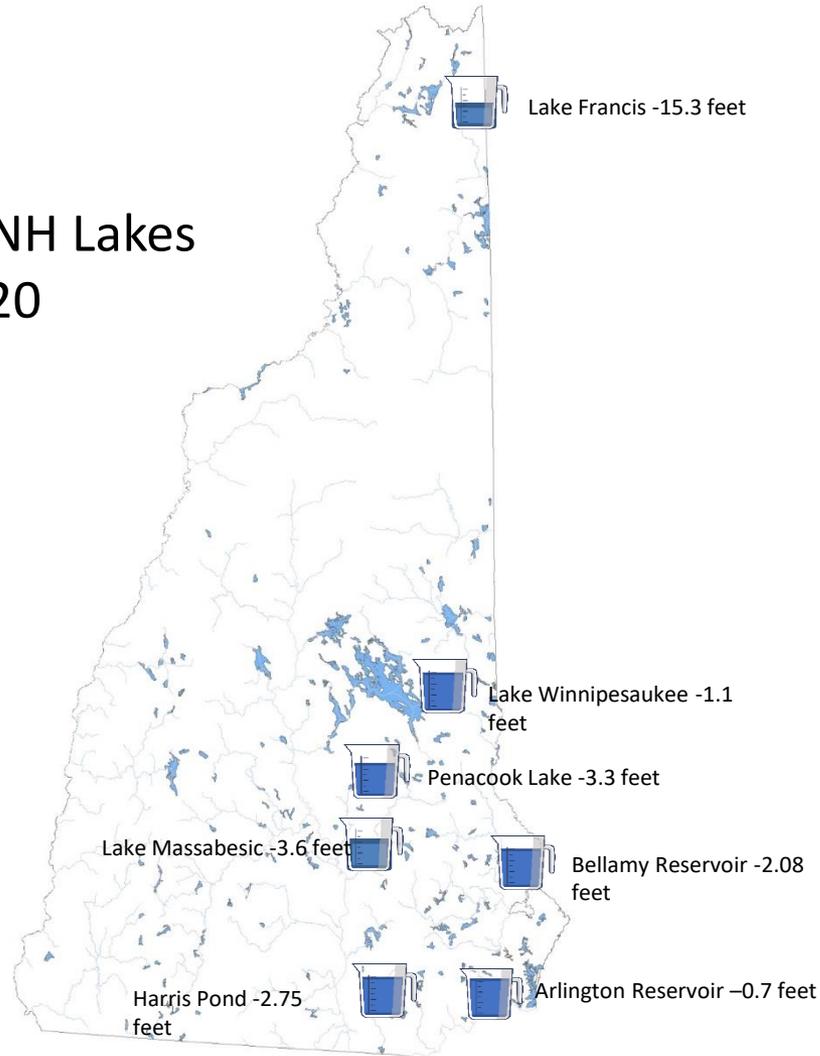
- Lamprey River is below critical and rare flows.
- Relief pulse August 17 to 19. Released 15 cfs for 48 hours. Another pulse will happen on Sept. 9-11. Pawtuckaway Lake is down 7 inches since July, 0.6 inches due to pulse.
- Souhegan River is below the Critical flows. The river is close to the lowest flows every measured.
- Users in both rivers are implementing water management plans.





### III. b. Drought Impacts, Reservoirs. Jim Gallagher, Administrator, Dams Bureau, Water Division, NHDES

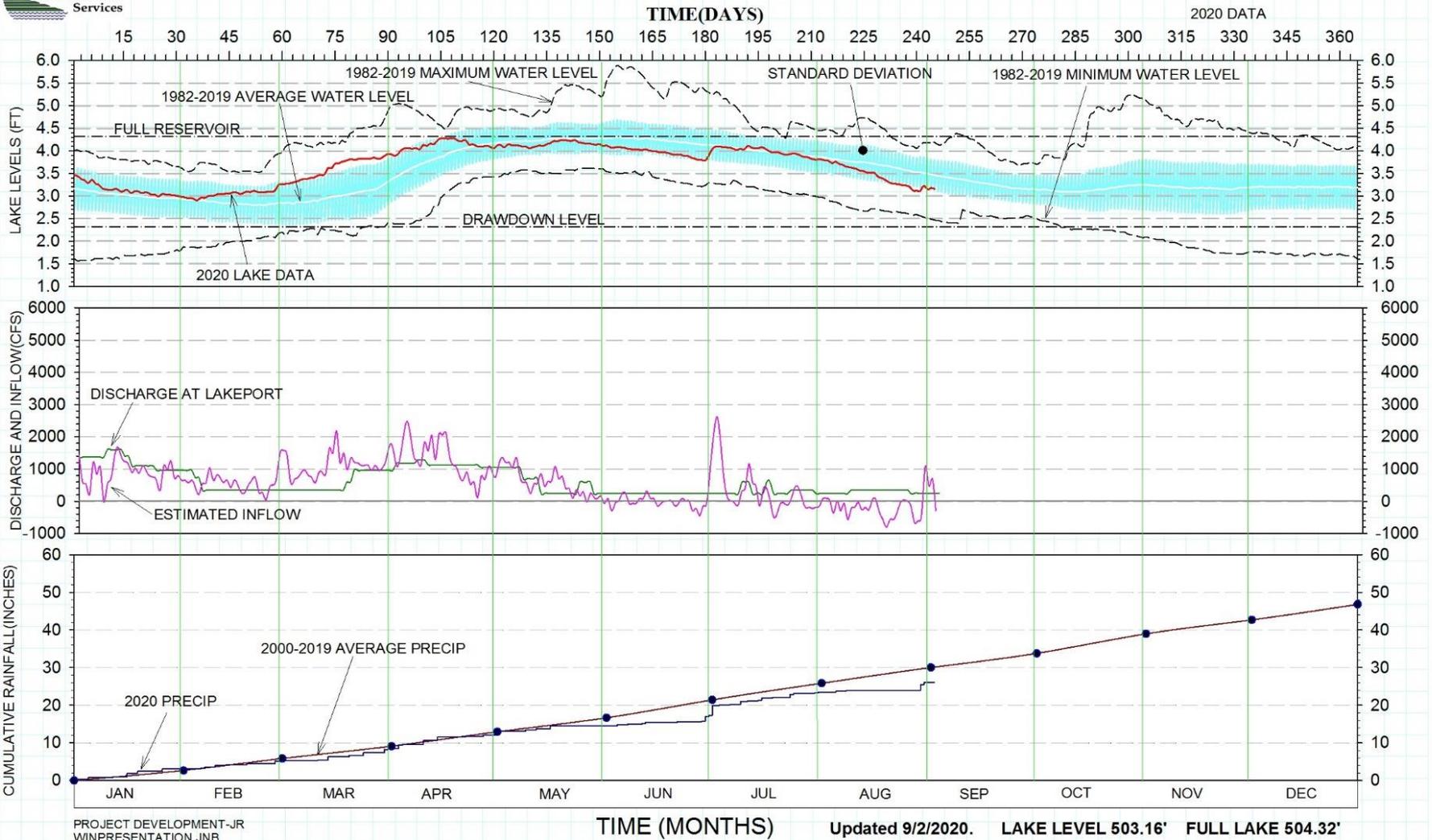
## Lake Levels at Selected NH Lakes September 2, 2020



# III. b. Drought Impacts, Reservoirs. Jim Gallagher, Administrator, Dams Bureau, Water Division, NHDES



## LAKE WINNIPESAUKEE LAKE LEVEL DATA





# III. c. Drought Impacts, Groundwater, Shane Csiki, NH Geologic Survey, NHDES

## Groundwater Level Data in New Hampshire (Percentile Classes) August 2020

### Legend

#### NHGS Wells

- Low (<10%), Overburden
- Below Normal (10-24%), Overburden
- Normal (25-75%), Overburden
- High, Overburden
- Not Analyzed, Overburden
- ◆ Low, Bedrock
- ◆ Below Normal (10-24%), Bedrock
- ◆ Normal (25-75%), Bedrock
- Not Analyzed, Bedrock

#### USGS Wells

- Low (<10%)

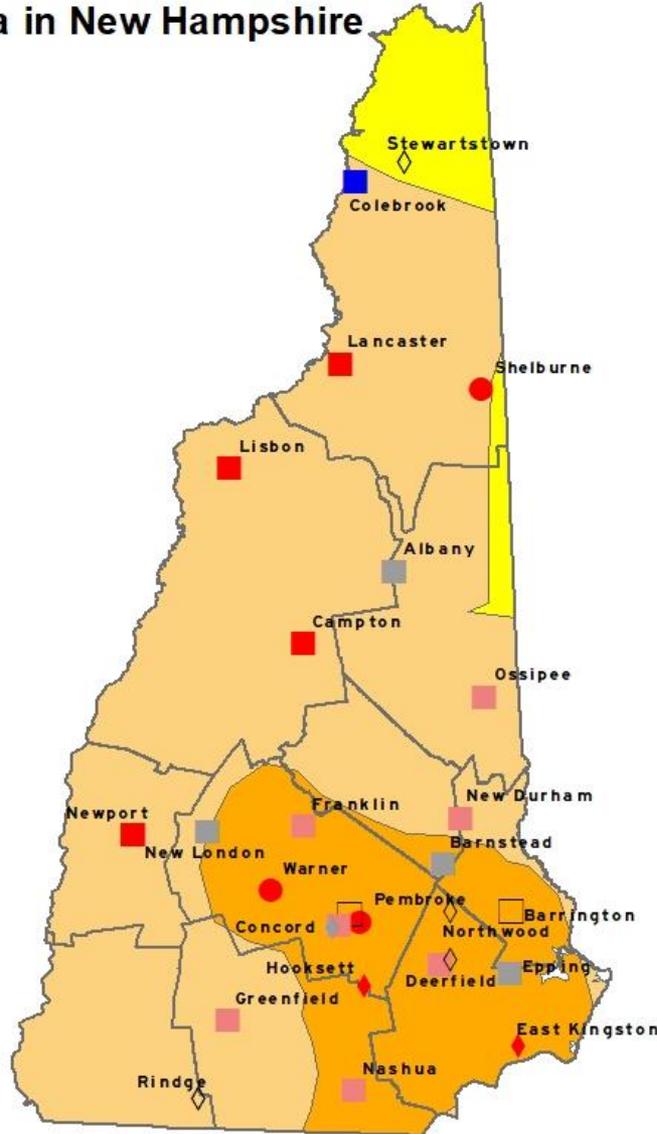
#### US Drought Monitor

- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)

#### County Boundaries



\* - Not analyzed - Well has <10 years of record to generate percentile statistics



20

Miles



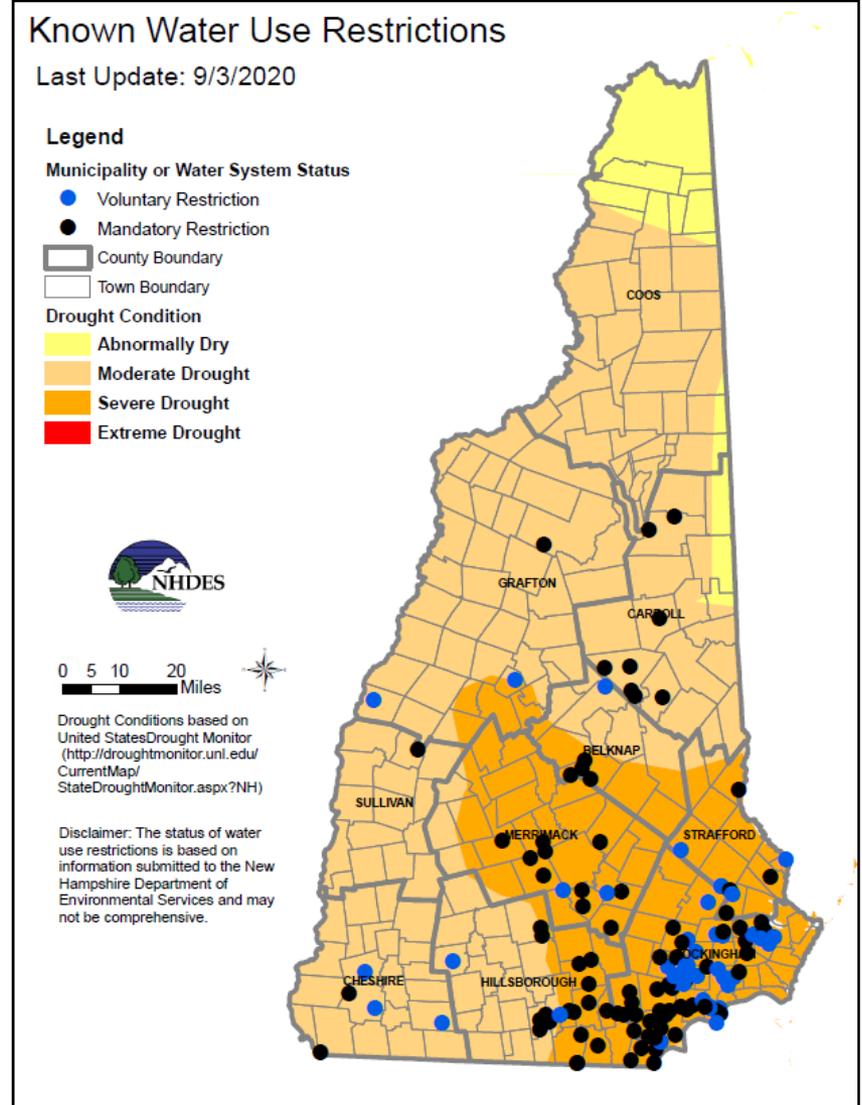
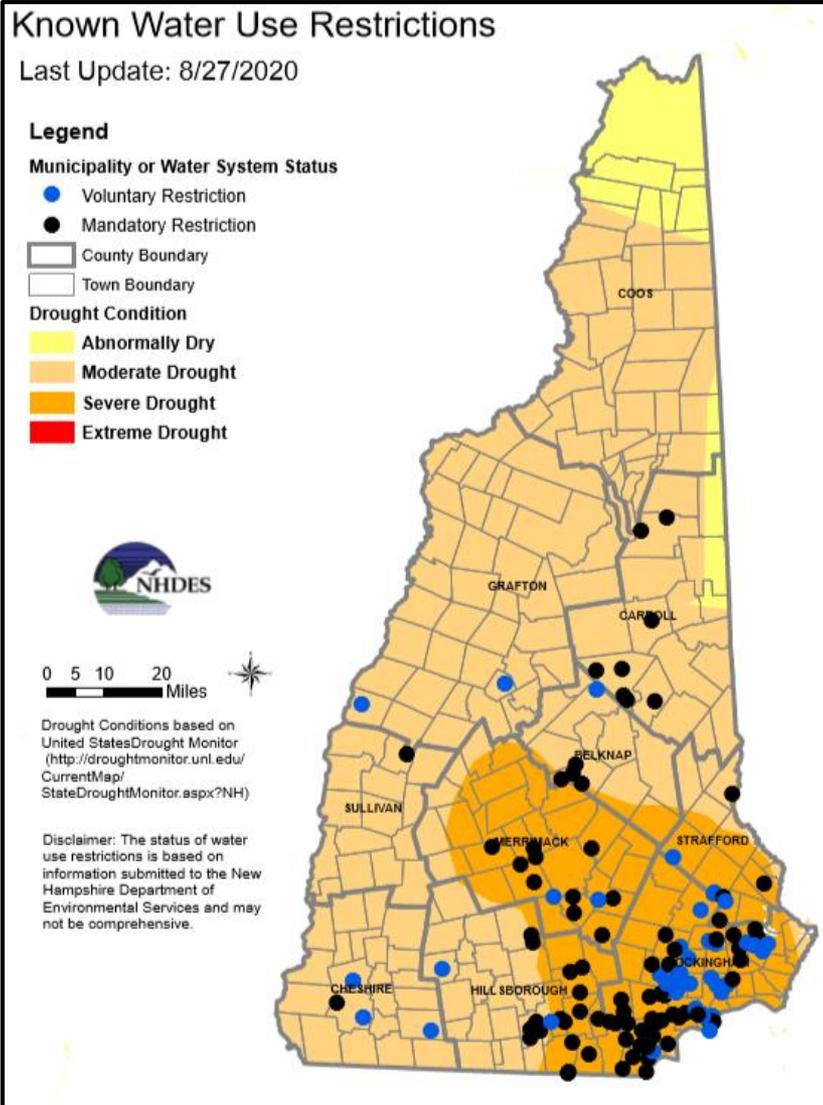
### III. d. Drought Impacts, Drinking Water, Brandon Kernen, Administrator, DWGB, Water Division, NHDES

## Drinking Water

- 102 Water systems have mandatory restrictions/45 have voluntary restrictions
- 4 Municipalities have implemented outdoor water use restrictions (3 mandatory/1 voluntary)
- Only a few public water systems have had to develop emergency water sources
- Recent droughts have hardened many water systems
- NHDES has is receiving a limited number of calls regarding drought impacts to residential wells (mainly dug wells)
- Adverse impacts to bedrock wells can lag so we may see more in the near future



### III. d. Drought Impacts, Drinking Water, Brandon Kernen, Administrator, DWGB, Water Division, NHDES



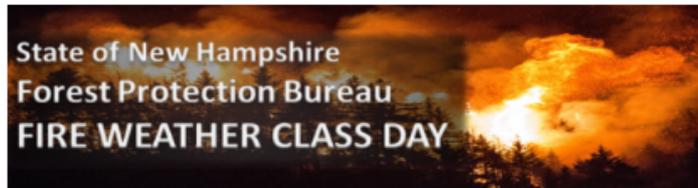
III. e. Drought Impacts, Shawn Jasper, Commissioner,  
NH Department of Agriculture, Markets & Food



Stuart Farm, Stratham. Late July 2020.

### Daily Fire Danger

The daily fire danger rating may also be obtained by calling the Division of Forests and Lands wildfire information line (toll free): 1-866-NH-FIRES (866-643-4737).



[Click here to subscribe to the Daily Fire Weather email.](#)

The Forest Protection Bureau posts the Daily Fire Notification classification each weekday morning. The weekend classification, for both Saturday and Sunday, is posted Saturday morning.

You can check current classification at our Twitter account, [@NHForestRangers](#). You do not need to have a Twitter account to access this information.

The daily fire danger rating may also be obtained by calling the Division of Forests and Lands wildfire information line (toll free): 1-866-NH-FIRES (866-643-4737).

#### Other Resources:

National Weather Service Alerts (Fire Weather Watches/Red Flag Warnings): <https://www.weather.gov/alerts> NWS Gray, ME Fire Weather Forecast: <http://forecast.weather.gov/product.php?site=GYX&product=FWF&issuedby=GYX>

#### Understanding Fire Danger

Fire Danger is a description of the combination of both constant and variable factors that affect the initiation, spread, and difficulty to control a wildfire within a specific area. There are many systems and models that attempt to provide accurate and reliable predictions of fire danger. Typically, the effects of fuel conditions, topography, and weather conditions are analyzed and integrated into a set of numbers that fire managers can use to meet their needs.

#### National Fire Danger Rating System (NFDRS)

Many Federal and State agencies use the National Fire Danger Rating System (NFDRS) to input data and receive information used to determine the fire danger in their area. Based on the fire danger, managers may impose restrictions or closures to public lands, plan for or pre-position staff and equipment to fight new fires, and decide whether to suppress or allow fires to burn under prescribed conditions.

Since 1974, five rating levels have been used to describe danger levels in public information releases and fire prevention signage:

**Low (Green)** - Fire starts are unlikely. Weather and fuel conditions will lead to slow fire spread, low intensity and relatively easy control with light mop-up. Controlled burns can usually be executed with reasonable safety.

**Moderate (Blue)** - Some wildfires may be expected. Expect moderate flame length and rate of spread. Control is usually not difficult and light to moderate mop-up can be expected. Although controlled burning can be done without creating a hazard, routine caution should be taken.

**High (Yellow)** - Wildfires are likely. Fires in heavy, continuous fuel such as mature grassland, weed fields and forest litter, will be difficult to control under windy conditions. Control through direct attack may be difficult but possible and mop-up will be required. Outdoor burning should be restricted to early morning and late evening hours.

**Very High (Orange)** - Fires start easily from all causes and may spread faster than suppression resources can travel. Flame lengths will be long with high intensity, making control very difficult. Both suppression and mop-up will require an extended and very thorough effort. Outdoor burning is not recommended.





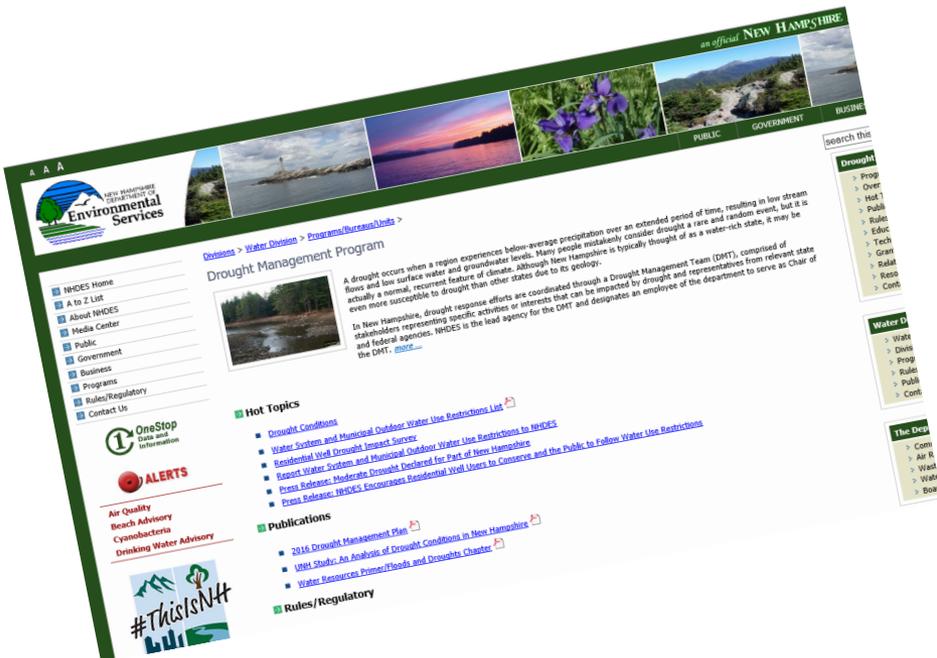
## IV. Ongoing Actions, Informing and Public Messaging Jim Martin Public Information Officer, NHDES

1. Maintain Drought Management Webpage
2. Weekly email updates to Community Water Systems and Municipalities
3. Maintain a list of water systems with restrictions on NHDES Drought Management webpage
4. Issue press releases, proactive media relations as well as respond to media relations
5. Frequent social media posts on Facebook, Twitter and Instagram. Encourage all members of the DMT to repost or retweet posts.

[NH Dept Env Services](#)  
[@NHDES](#)

[Aug 28](#)

According to the U.S. Drought Monitor, over 90% of the state is experiencing drought, which is up from 70% last week. This week, severe drought designation further expanded into the western third of Hillsborough County. [#nhdrought](#)

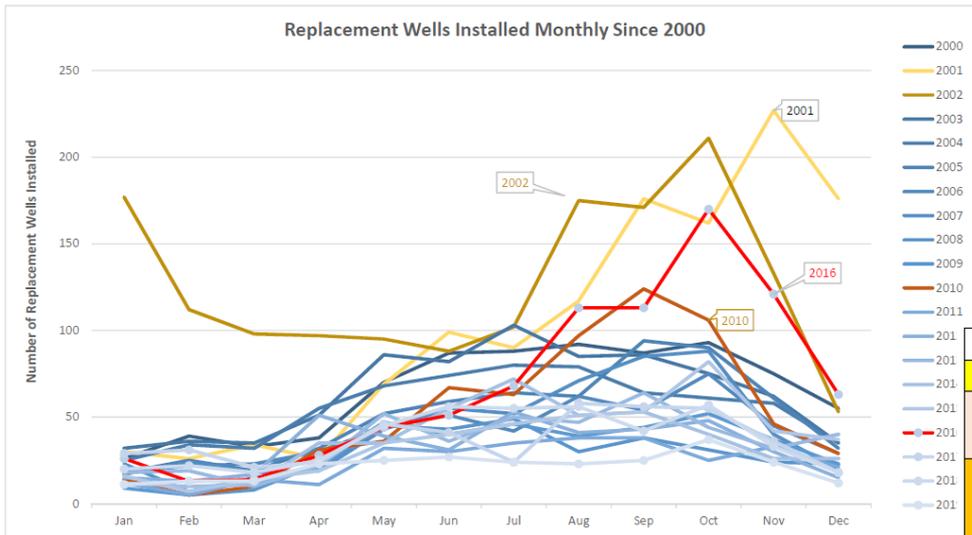




# IV. Ongoing Actions, Well Protection Messaging

## Abby Fopiano, Water Well Program, NHDES

1. Increased number of replacement well/well deepening in drought years
2. Drop in groundwater levels is a response to drought conditions (withdrawals > recharge). Expect a delay in impacts to residential wells.
3. As droughts occur and remedial actions are taken, residential wells become resilient.
4. DES initiative to develop a well warning system to help inform/protect the public



Drought Severity	Impact on Residential Wells	
Abnormally Dry	<b>Wells Advisory</b>	<b>Conservation Methods Recommended</b>
Moderate Drought	<b>Wells Watch</b>	-Dug wells begin to go dry. -Bedrock begin to experience change in water quality or loss of recovery.
Severe Drought	<b>Wells Warning</b>	-Many dug wells are dry. -Bedrock wells loose yield, 2-4 week wait list for installation of new wells. Municipalities begin to enforce non-essential use restrictions. -Bulk water deliveries to home and neighbors share wells.
Extreme Drought	<b>Wells Warning</b>	-Majority of dug wells are dry. -Bedrock wells experience no recovery, 4-6+ week wait list for installation of new wells. -Municipalities ban all non-essential use. -Widespread water trucked into auxillary tanks on regular basis.
Exceptional Drought	<b>Wells Warning</b>	-Limited experience in Exceptional Drought



## **V. Drought Management Team Discussion (input from all Drought Management Team participants)**

- a. Recommended responses to any specific impacts**
- b. Recommended public messaging**
- c. Next steps**
- d. Next session; proposed for 1 October 2020**

