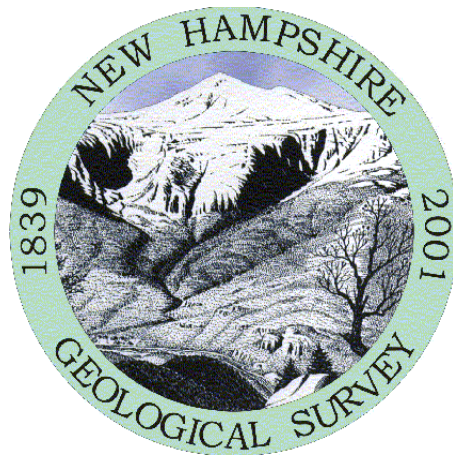


# **New Hampshire Groundwater Level Monitoring**

## **June, 2020**



**New Hampshire Geological Survey  
29 Hazen Drive, PO Box 95  
Concord, New Hampshire 03302-0095**

**July 2, 2020**

**Updated July 9, 2020**

## GROUNDWATER CONDITIONS SUMMARY

According to the [Northeast Regional Climate Center](#) (NRCC) at Cornell University, New Hampshire received an average of 2.53 inches of precipitation during the month of June, which is -1.91 inches below normal or 57% of normal based on the 1981-2010 precipitation records. Precipitation was somewhat evenly distributed across the northern and southern portions of the state (Figure 1). Regarding Spring 2020, NRCC reports that New Hampshire received an average of 10.41 inches of rain from March through May. This is -0.92 inches below normal for the northern portion of the state and -1.37 inches below normal for the southern portion (Figure 1). NRCC's percent of normal precipitation map for June 1-30 shows the vast majority of the state is below normal, with large areas of the central and southern parts of the state below 50% (Figure 2).



Figure 1. Northern (1) and Southern (2) portions of NH, courtesy of NRCC.

As of July 9<sup>th</sup>, southern New Hampshire is in moderate drought (56% of the state) and the remaining northern portion of the state is abnormally dry according to the [National Drought Mitigation Center](#) (Figure 3). The percent area experiencing moderate drought in New Hampshire has decreased from 72% since June 30.

Figure 2 shows the monthly status of groundwater levels for both bedrock and overburden wells in the network. Only wells with a period of record (POR) 10 years or more are placed within statistical categories of low through high (symbols red through blue, respectively). Bedrock wells are installed into bedrock and overburden wells are installed in the unconsolidated materials above bedrock.

The majority of the state is experiencing below normal to low groundwater levels. Exceptions include normal conditions in the Seacoast region, Barnstead, Ossipee, Greenfield, and parts of Concord. All but one of the monitoring wells in the network (Barnstead) have experienced a negative departure from their monthly average over their POR (Table 1). For the majority of them, this is the second month of negative departures. Groundwater levels fell in May and June due to a below-average amount of precipitation (see [NRCC's precipitation figures here](#), and click on the state of NH on the regional map in the top left). Precipitation has been especially low in the watersheds upstream of the overburden wells in Newport and Lancaster, which have had below normal water levels for over a year.

The New Hampshire Geological Survey's groundwater monitoring network (Figure 2) currently includes 11 bedrock and 20 overburden observation wells, all of which are measured monthly by hand. Using the monthly hand readings, monthly averages and percentile statistics were calculated and are summarized in Figures 2 and 3, the following hydrographs\*, and in Table 1.

\*The hydrographs show the following data over a period of 12 months: (1) monthly groundwater depths in red, (2) the monthly average over the period of record (POR) of the well in black, and (3) color-coded statistical ranges over the POR of the well. Note the POR is listed below each month's column on the chart and reported as the number of measurements for that respective month. This might include multiple readings in the same month and does not include any gaps in data so therefore may not represent a continuous period.

## June 2020 Groundwater Levels and June Precipitation (percent normal)

### Monthly Status

- High
- Above norm
- Normal
- Below norm
- Low
- Not Analyzed
- Counties

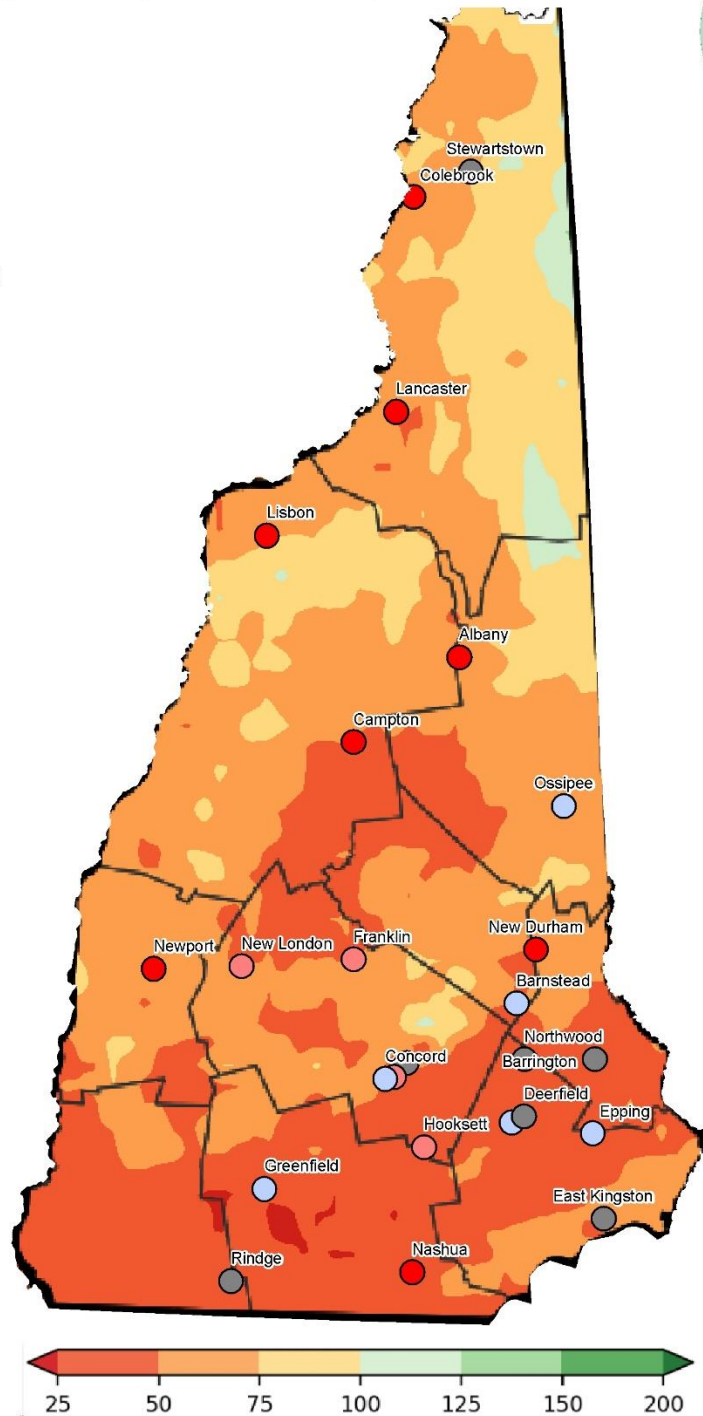
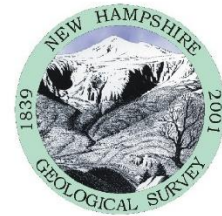


Figure 2. Groundwater Monitoring Network showing groundwater levels relative to statistical envelopes calculated over each well's period of record (POR) and percent normal precipitation map for June 1-30, 2020 ([Northeast Regional Climate Center](#)).

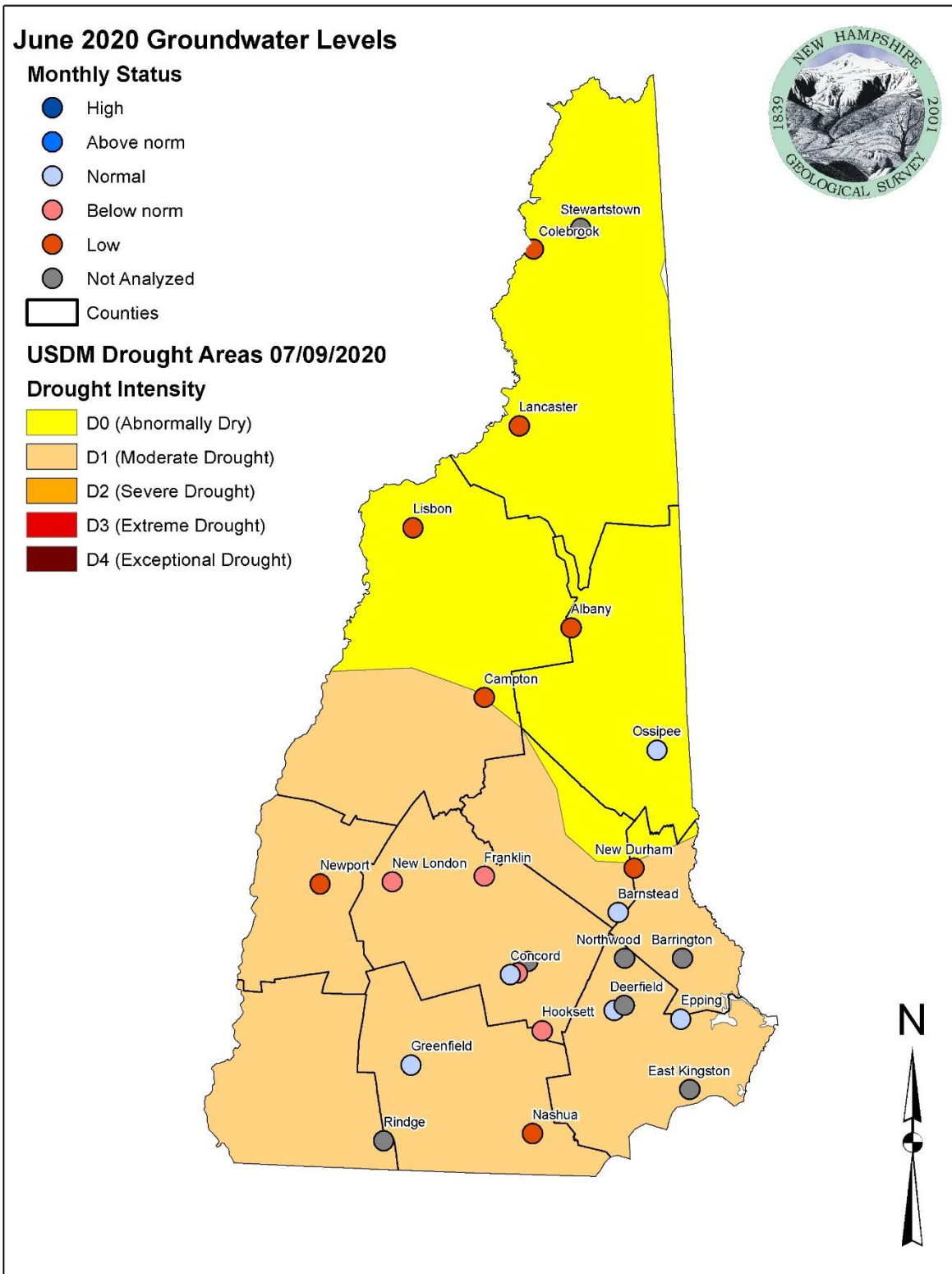
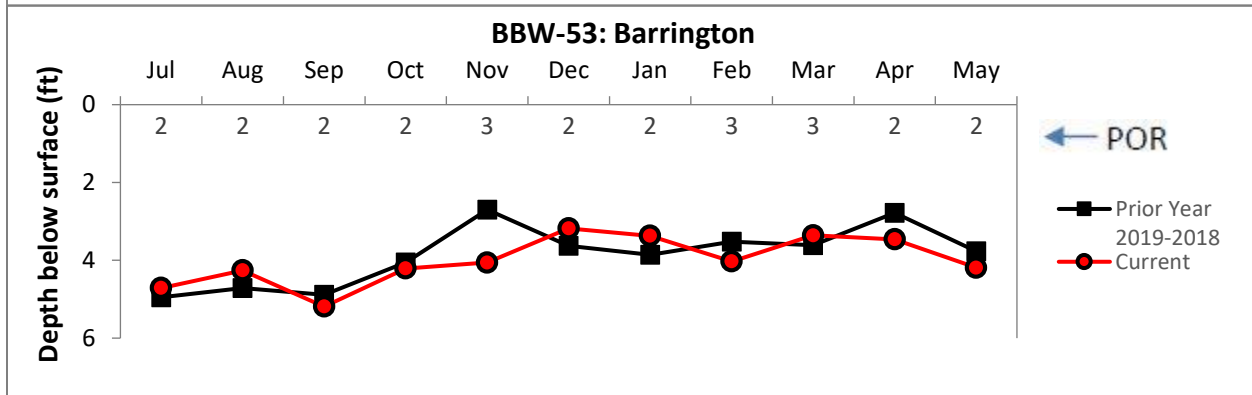
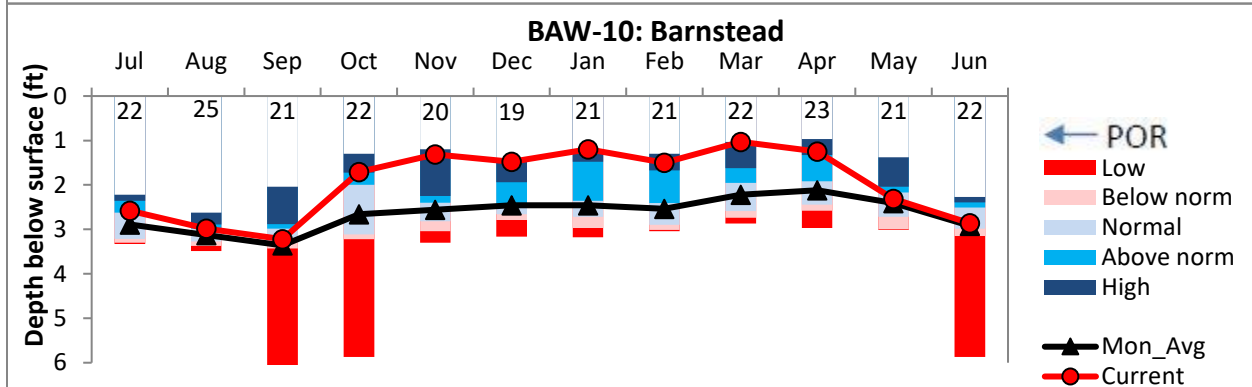
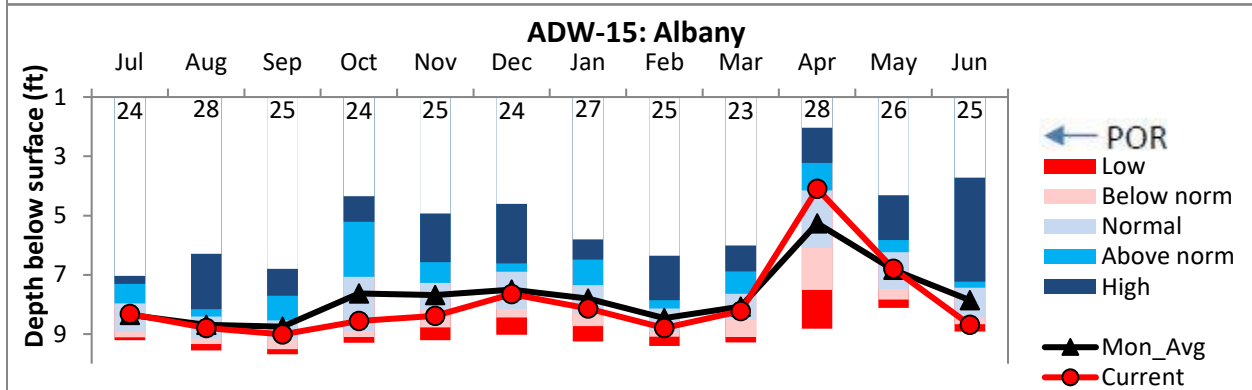
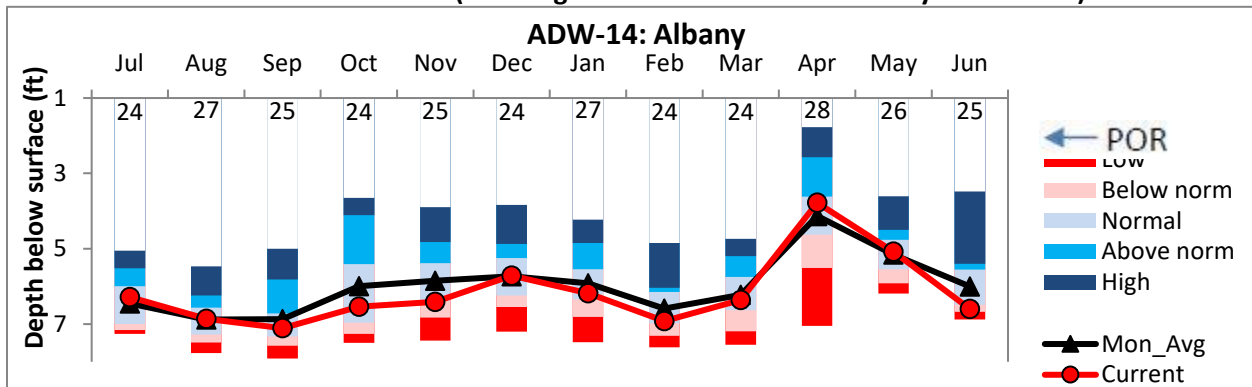
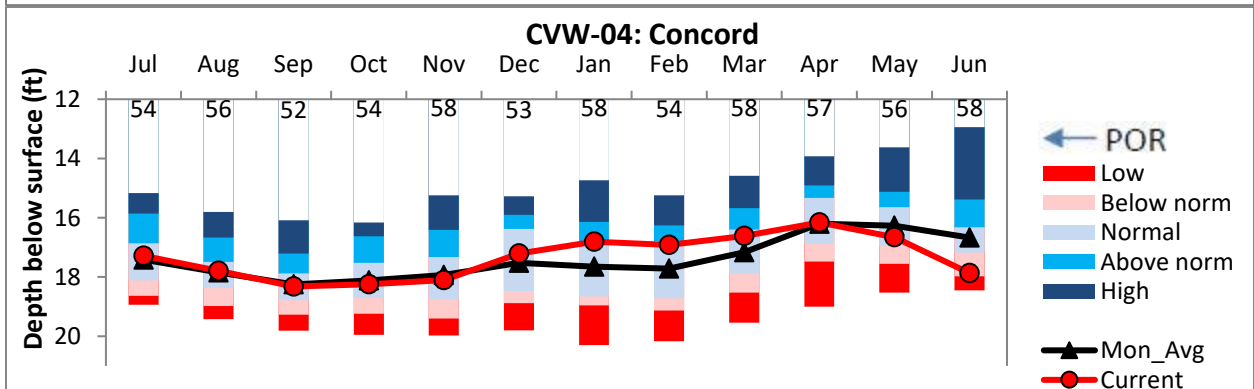
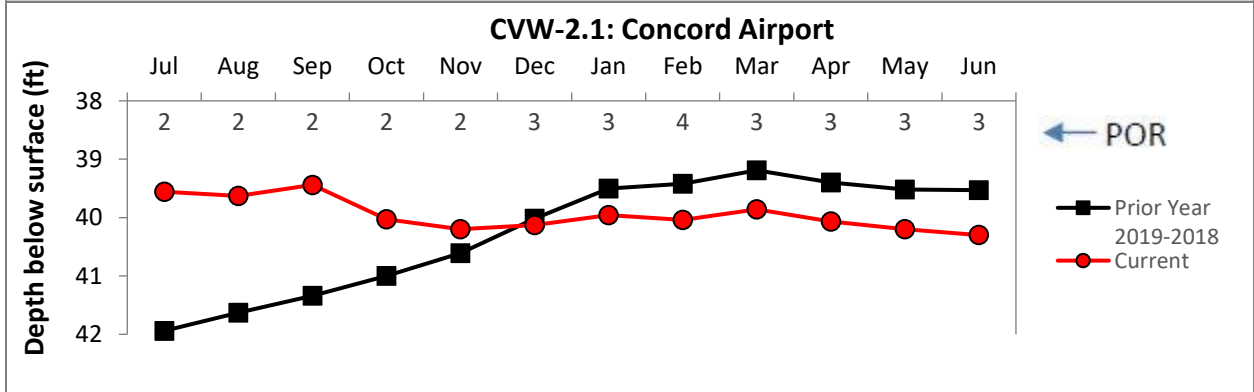
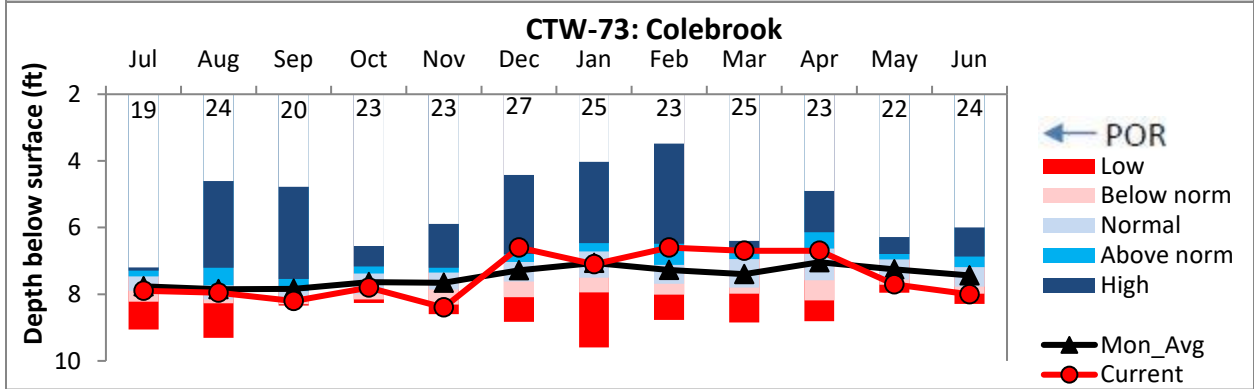
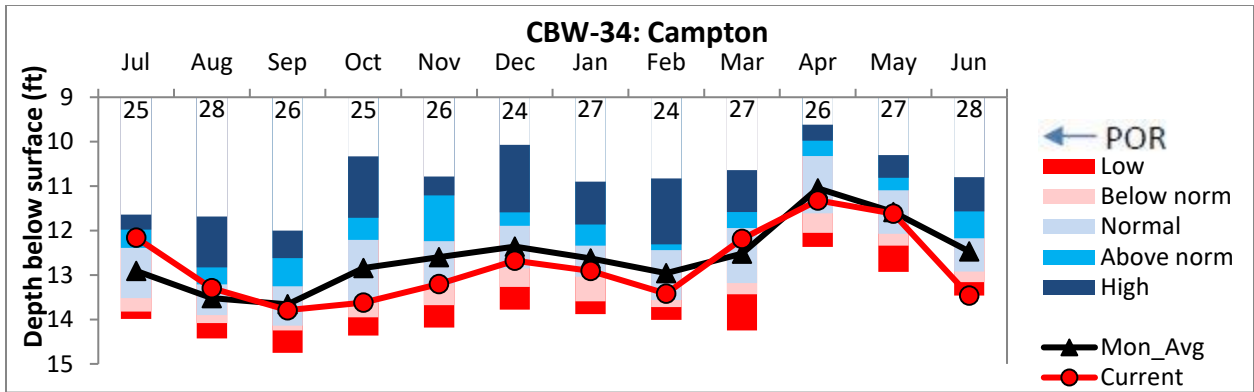
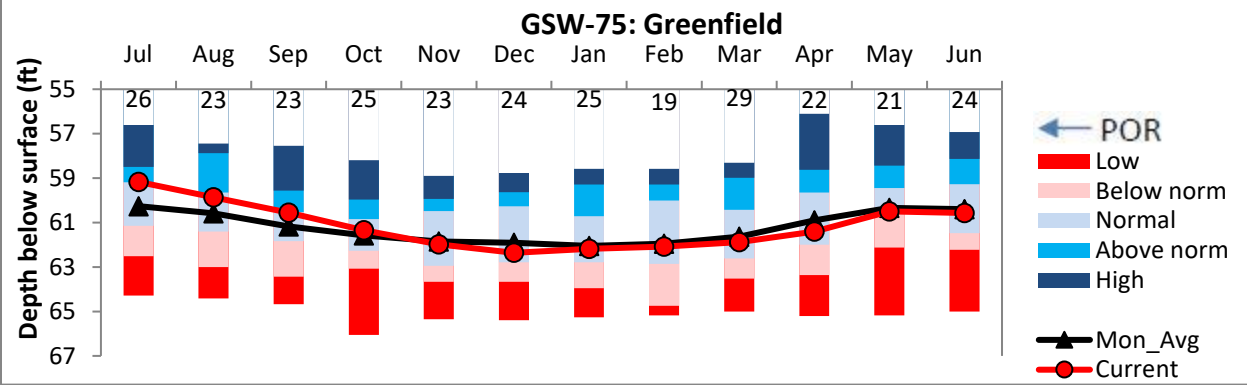
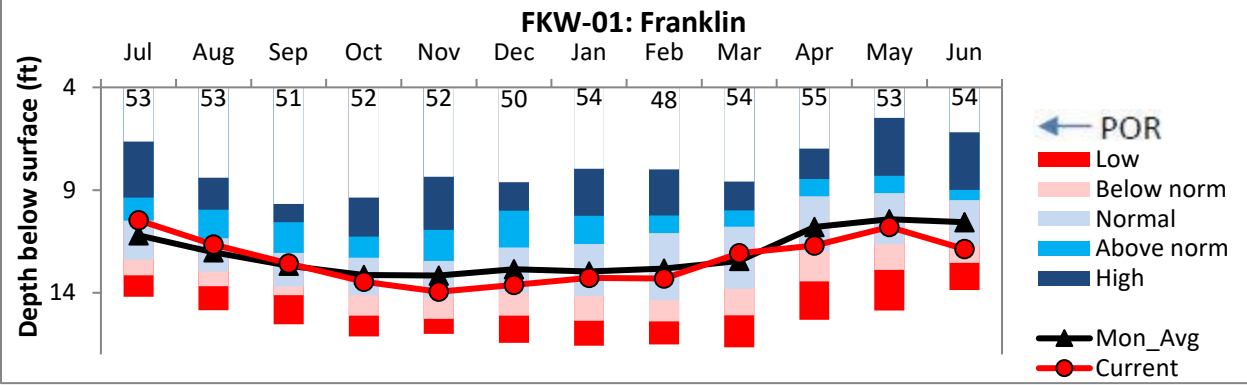
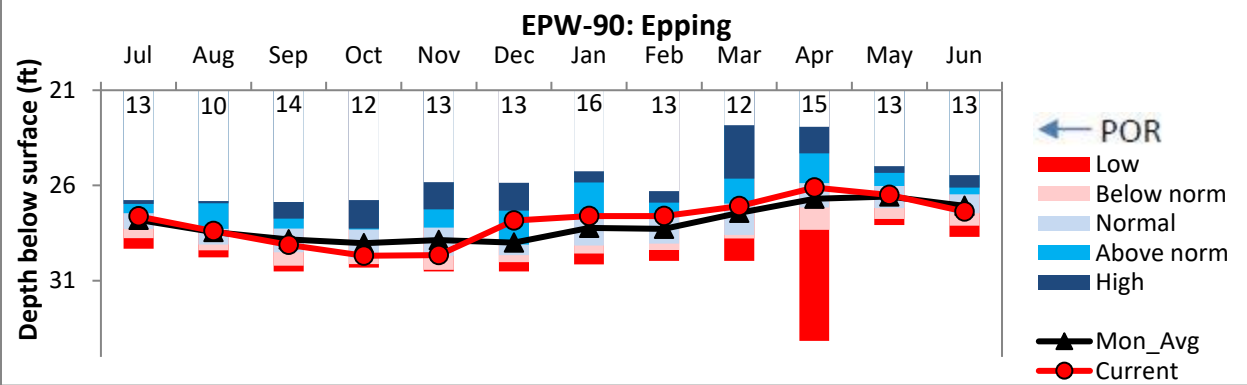
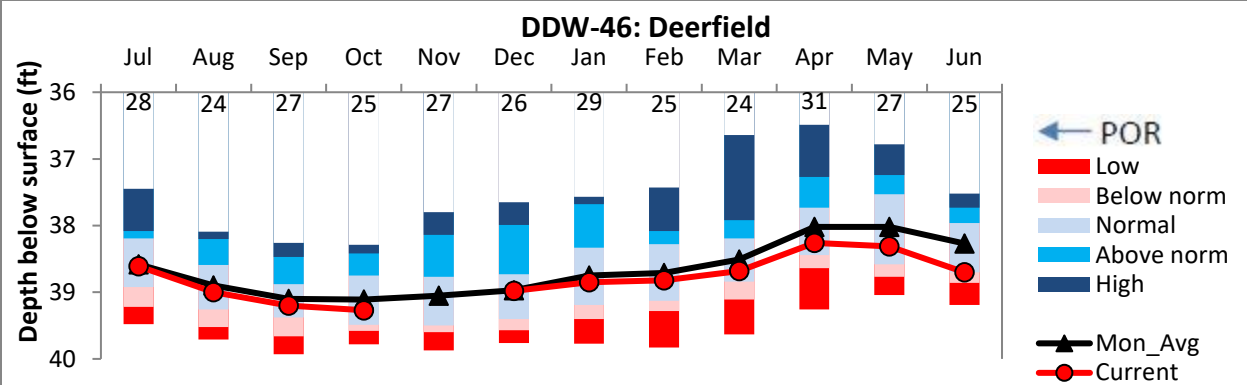


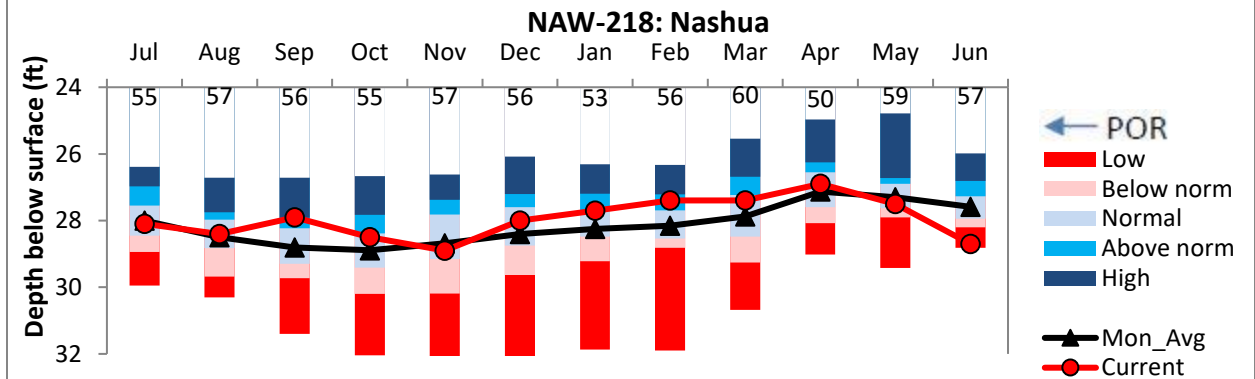
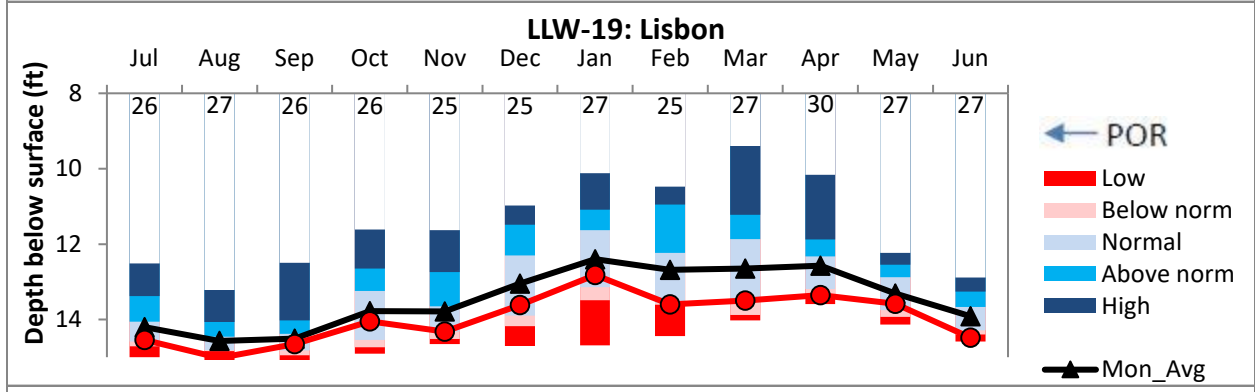
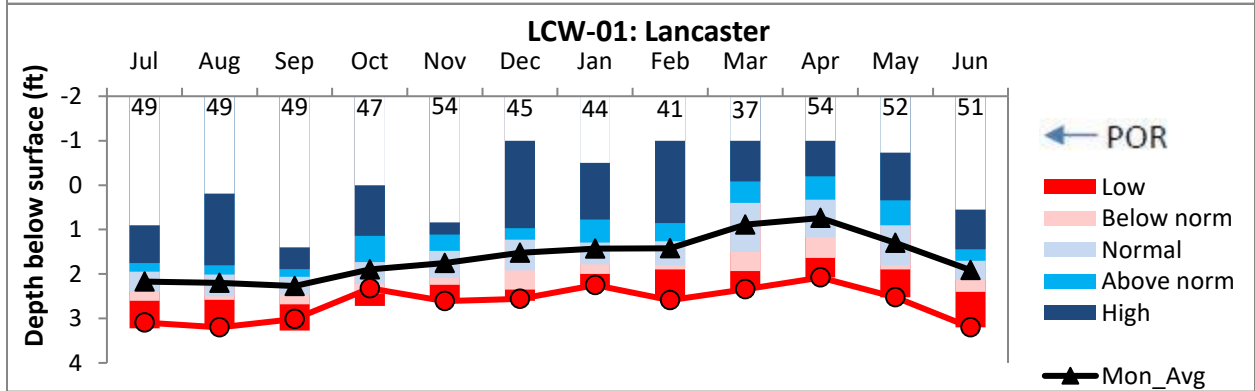
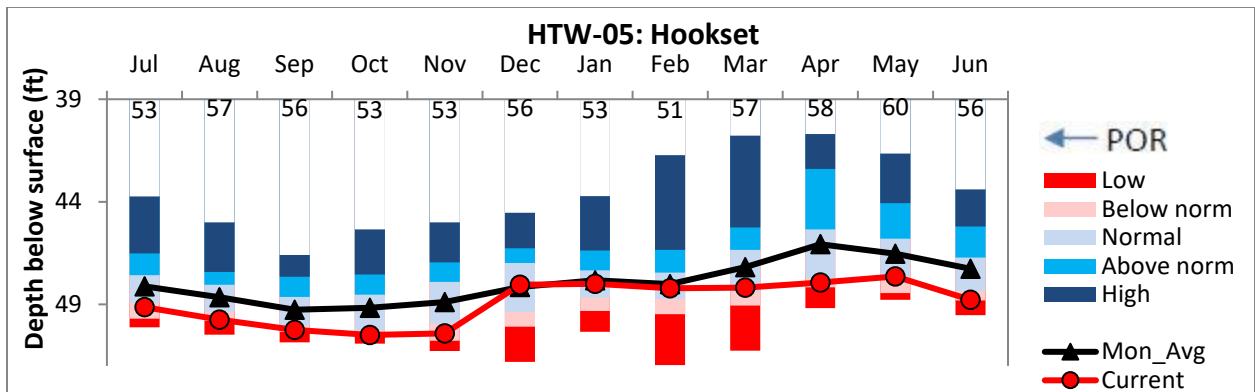
Figure 3. Groundwater Monitoring Network showing groundwater levels relative to statistical envelopes calculated over each well's period of record (POR) and drought areas according to the [U.S. Drought Monitor](#) on July 9<sup>th</sup>, 2020.

**OVERBURDEN WELL HYDROGRAPHS (Showing statistics for wells with ≥ 10 years of data)**

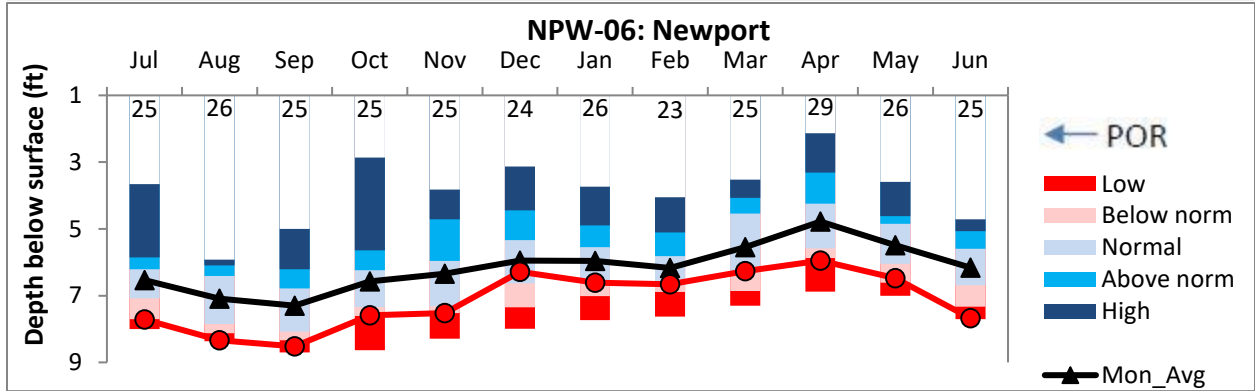
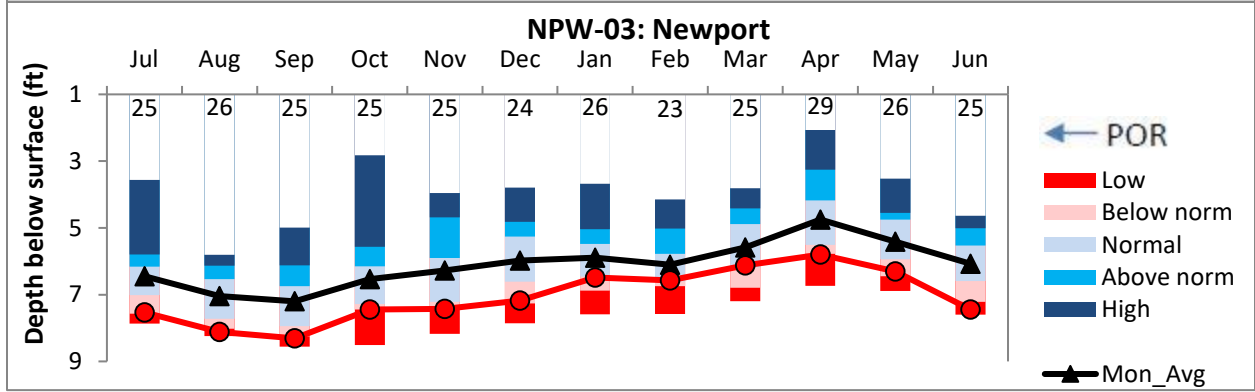
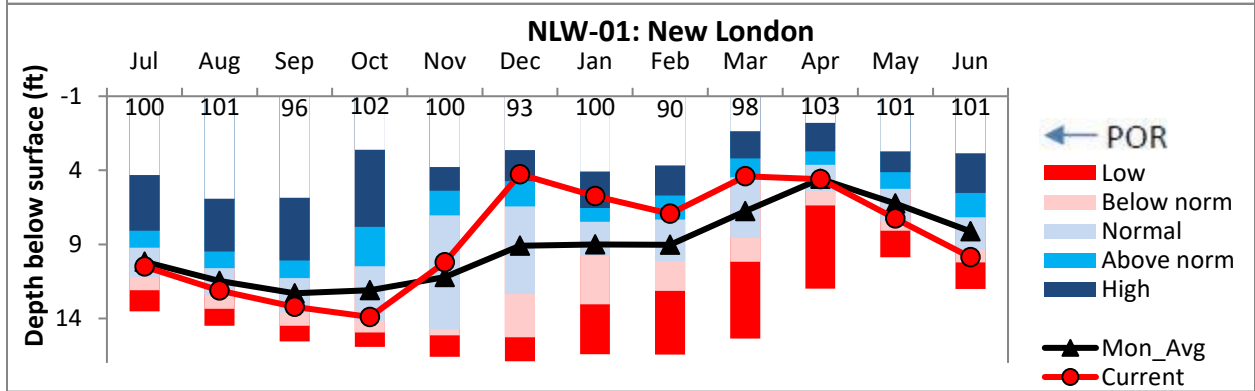
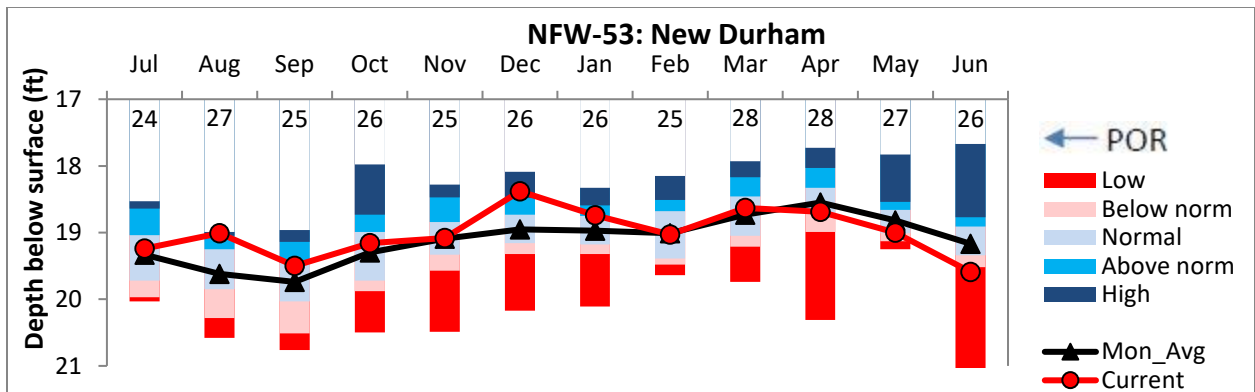




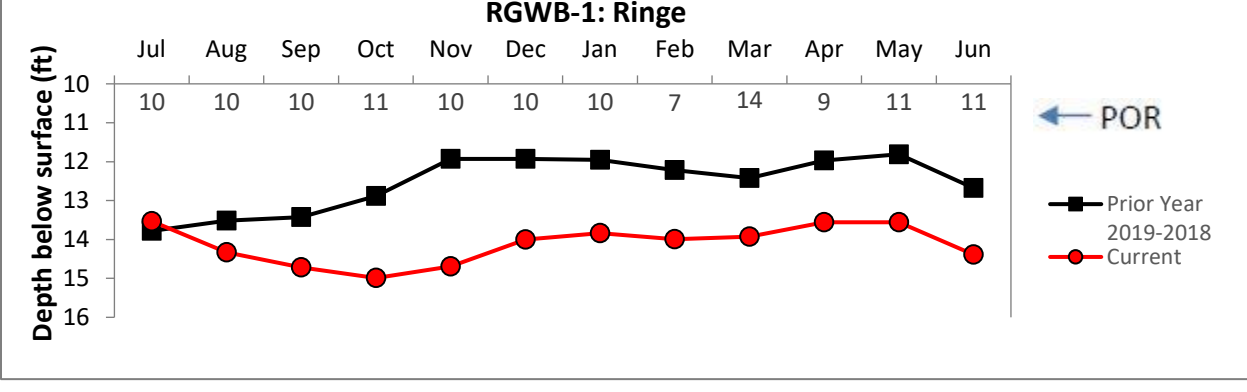
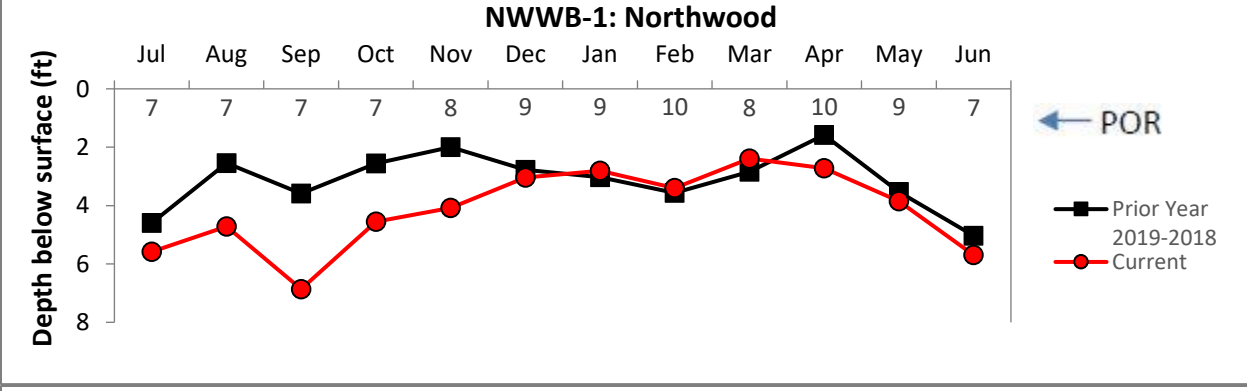
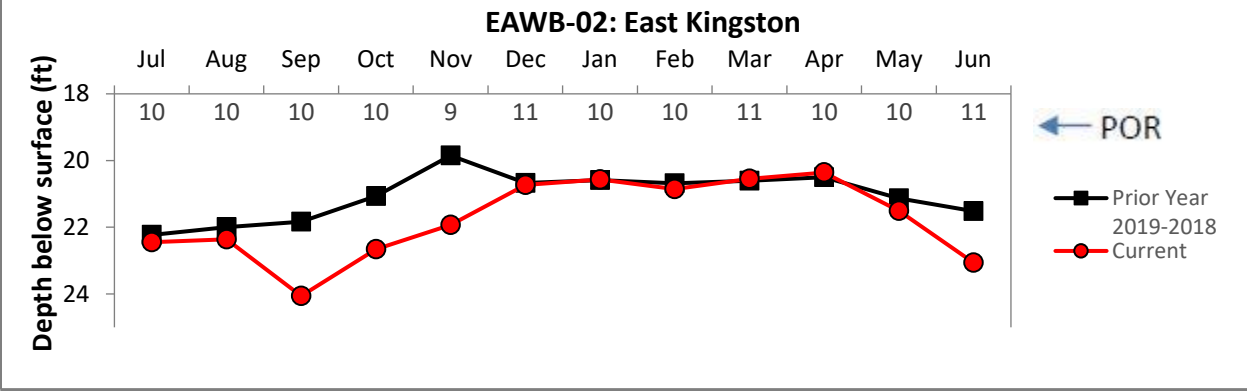
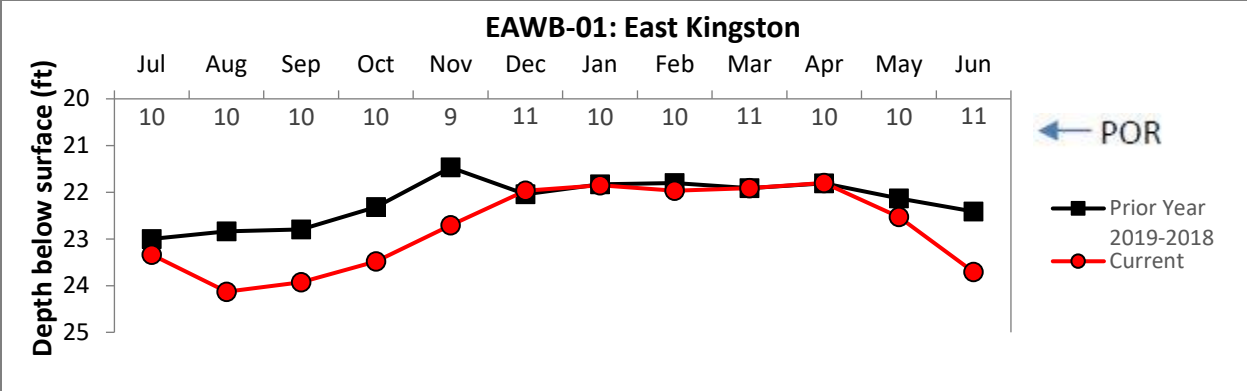


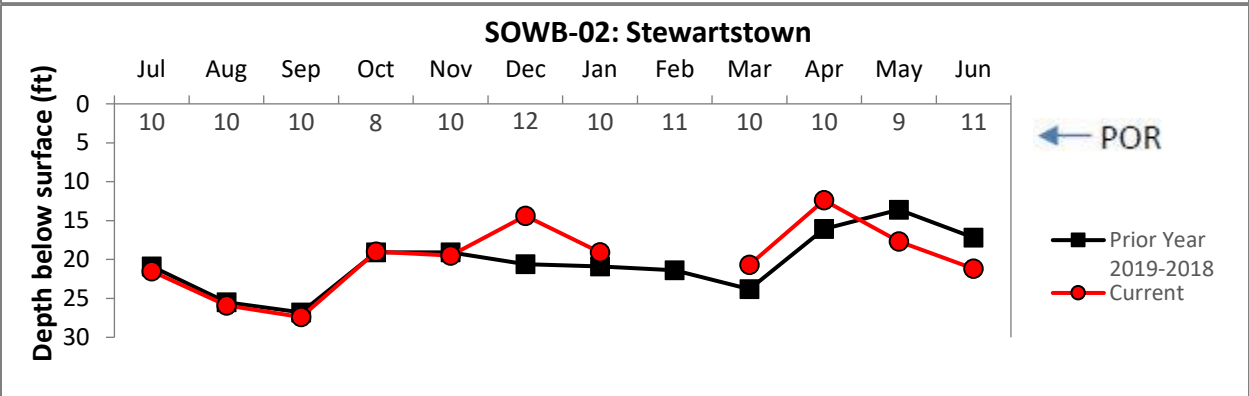
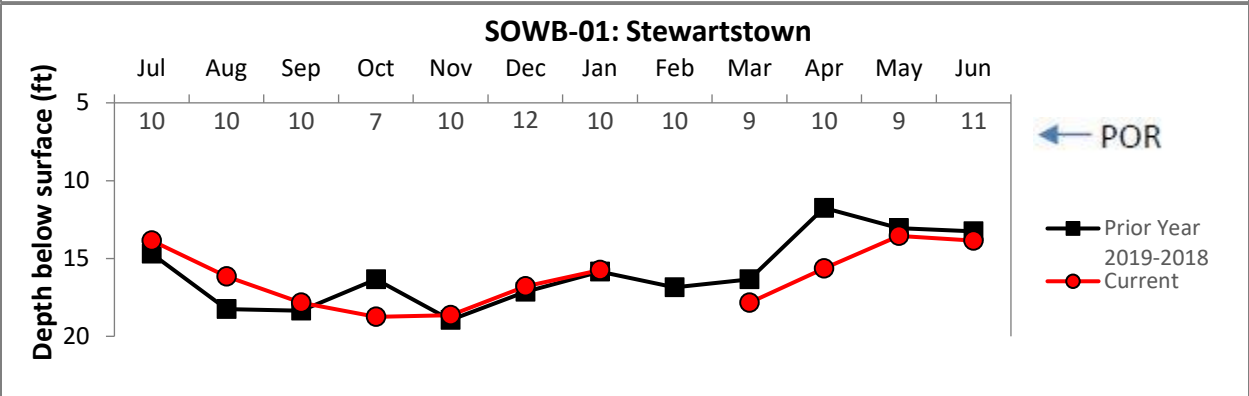
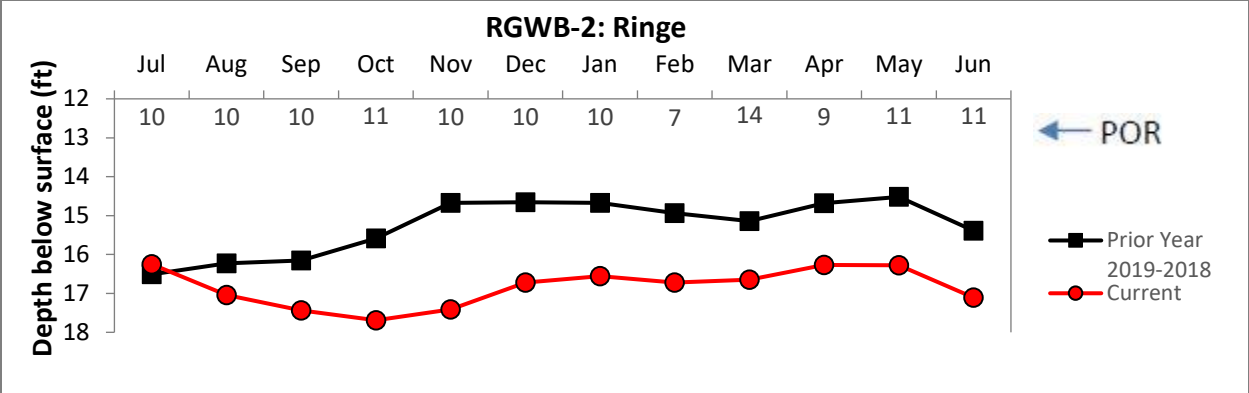












**Table 1.** Summary of groundwater levels sorted by region (dark blue – high, blue – above normal, light blue – normal, pink – below normal, red – low.

Well	Town	Well type	Screen/ open Interval (ft)	Depth to Water (ft)	Monthly Average (ft)	Current Status	Departure from Avg. (ft)	No. of meas.
ADW-14	Albany	Overburden	77.5-79.5	6.6	6	Below norm	-0.6	25
ADW-15	Albany	Overburden	16-18	8.69	7.86	Low	-0.83	25
BAW-10	Barnstead	Overburden	23-25	2.86	2.92	Normal	0.06	22
BBW-53	Barrington	Overburden	21-23	4.74	-	Not Analyzed	-	3
CBW-34	Campton	Overburden	21-23	13.46	12.47	Low	-0.99	28
CTW-73	Colebrook	Overburden	105-107	8	7.44	Low	-0.56	24
CVW-02.1	Concord	Overburden	59.8-61.8	40.3	-	Not Analyzed	-	3
CVW-04	Concord	Overburden	25-27	17.87	16.67	Below norm	-1.2	58
DDW-46	Deerfield	Overburden	59.8-61.8	38.7	38.27	Normal	-0.43	25
EPW-90	Epping	Overburden	39.45-40.7	27.37	27.07	Normal	-0.3	13
FKW-01	Franklin	Overburden	45.5-47.5	11.87	10.56	Below norm	-1.31	54
GSW-75	Greenfield	Overburden	35.8-37.8	60.57	60.39	Normal	-0.18	24
LCW-01	Lancaster	Overburden	28-30	3.2	1.91	Low	-1.29	51
LLW-19	Lisbon	Overburden	49.8-52.3	14.48	13.91	Low	-0.57	27
NAW-218	Nashua	Overburden	66-68	28.7	27.59	Low	-1.11	57
NFW-53	New Durham	Overburden	28-30	19.59	19.17	Low	-0.42	26
NLW-01	New London	Overburden	40-42	9.88	8.13	Below norm	-1.75	101
NPW-03	Newport	Overburden	40.5-42.5	7.45	6.07	Low	-1.38	25
NPW-06	Newport	Overburden	58-60	7.68	6.16	Low	-1.52	25
OXW-38	Ossipee	Overburden	0-22.55	35.08	34.56	Normal	-0.52	25
CVWB-01	Concord	Bedrock	470-480	25.87	24.25	Normal	-1.62	12
CVWB-02	Concord	Bedrock	0-315	19.9	18.79	Normal	-1.11	12
DDWB-01	Deerfield	Bedrock	0-300	16.78	-	Not Analyzed	-	9
EAWB-01	East Kingston	Bedrock	463-473	23.71	-	Not Analyzed	-	11
EAWB-02	East Kingston	Bedrock	0-323	23.06	-	Not Analyzed	-	11
HTW-05	Hooksett	Bedrock	0-102.7	48.78	47.27	Below norm	-1.51	56
NWWB-01	Northwood	Bedrock	0-130	5.69	-	Not Analyzed	-	7
RGWB-01	Rindge	Bedrock	391-401	14.39	-	Not Analyzed	-	11
RGWB-02	Rindge	Bedrock	0-285	17.11	-	Not Analyzed	-	11
SOWB-01	Stewartstown	Bedrock	443-453	13.85	-	Not Analyzed	-	11
SOWB-02	Stewartstown	Bedrock	0-303	21.2	-	Not Analyzed	-	11