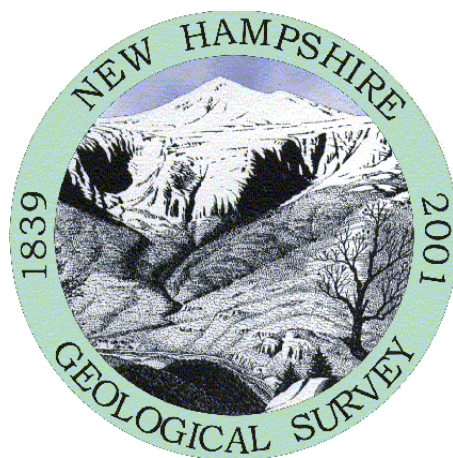


New Hampshire Groundwater Level Monitoring
March, 2020



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

April 10, 2020

GROUNDWATER CONDITIONS SUMMARY

According to the [Northeast Regional Climate Center](#) (NRCC) at Cornell University, New Hampshire received an average of 3.00 inches of precipitation during the month of March, which is -0.68 inches below normal or 82% of normal based on the 1981-2010 precipitation records. Precipitation was evenly distributed across the state this month. The state is currently free from drought conditions according to data released by the [National Drought Mitigation Center](#) on April 7, 2020.

Figure 1 shows the monthly status of groundwater levels for both bedrock and overburden wells in the network. Only wells with 10 years or more of record are placed within statistical ranks low through high. Bedrock wells are installed into bedrock and overburden wells are installed in the unconsolidated materials above bedrock.

Overall, the groundwater wells indicate normal to high water levels in the central and southern portions of the state south of the White Mountains (Fig. 1). Wells located within and along the northwestern edge of the White Mountain National Forest (WMNF) are below normal to low (i.e., Albany, Lancaster, and Lisbon). The two overburden wells in Albany are below normal for the second time in the last 6-month period despite an above normal spike in groundwater levels in January. Monthly average precipitation and departure from normal data from the [Mount Washington Observatory](#) and NRCC reveals consistently below normal precipitation in an area extending north from Crawford Notch and throughout the Presidential Range. The overburden well in Lisbon is also below normal following a high groundwater spike in February. It is alongside the Ammonoosuc River, whose headwaters extend into the below average precipitation zone in the WMNF (Fig. 1). Lancaster has been consistently low over the last 12-month period due to the sustained below normal amount of precipitation in its watershed over the last year. The overburden well alongside the Mohawk River in Colebrook has recovered from its low status last month, which was likely related to the below average precipitation in the northern part of the state. Likewise, the two overburden wells in Newport have also recovered to normal levels after a sustained 10-month period of below normal groundwater levels.

The three bedrock wells that have 10 years or more of record, two in Concord and one in Hooksett, show normal to above normal levels. Hooksett has recovered to normal levels after a below normal to low period from March to November 2019.

Considering the 12-month hydrographs below*, most wells indicate that groundwater levels across the state have been in the normal range in the past 12-month period. The exceptions are noted above.

The New Hampshire Geological Survey's groundwater monitoring network (Figure 1) currently includes 11 bedrock and 20 overburden (Figure 2) 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 Figure 1 and 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.

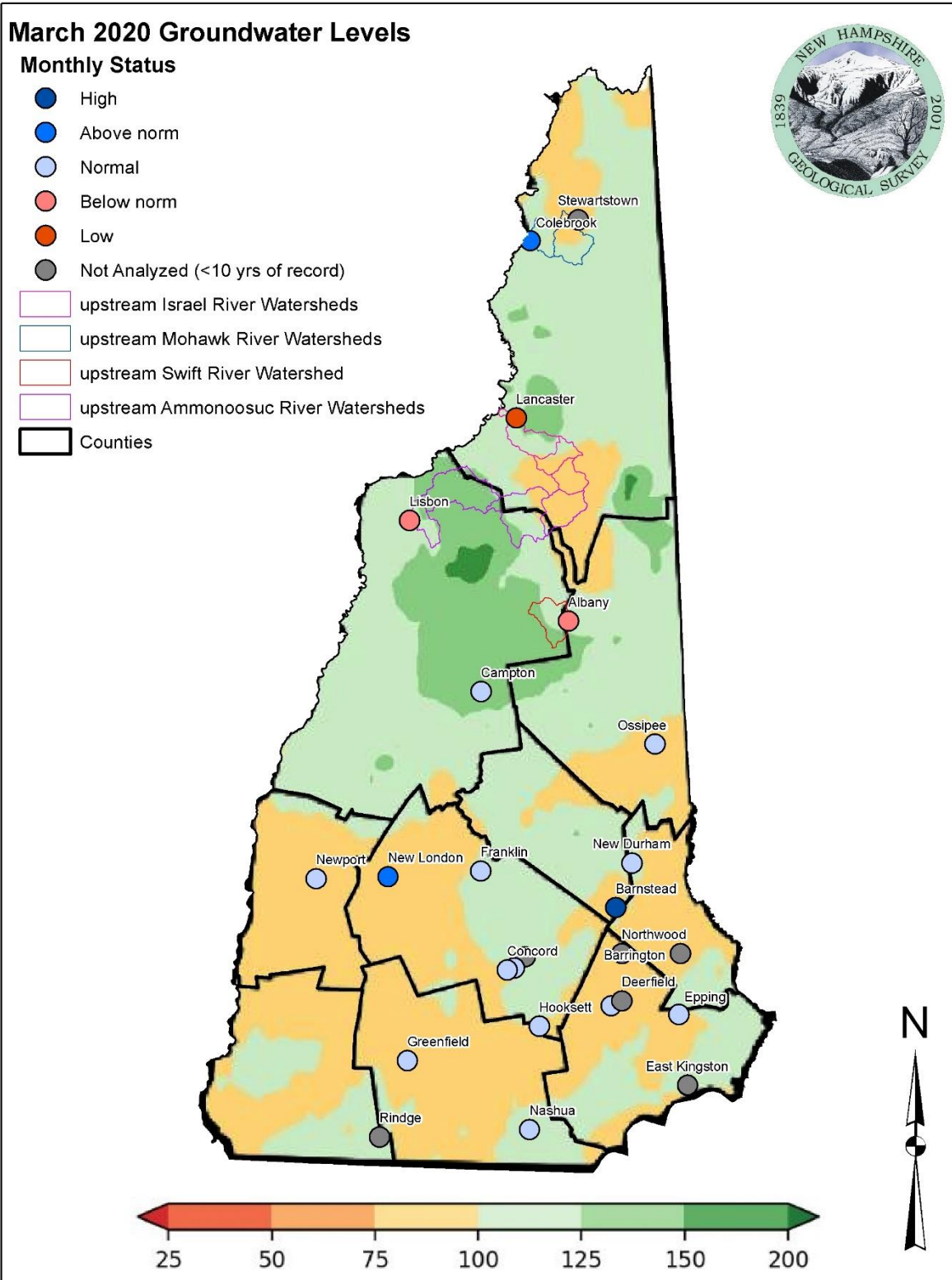
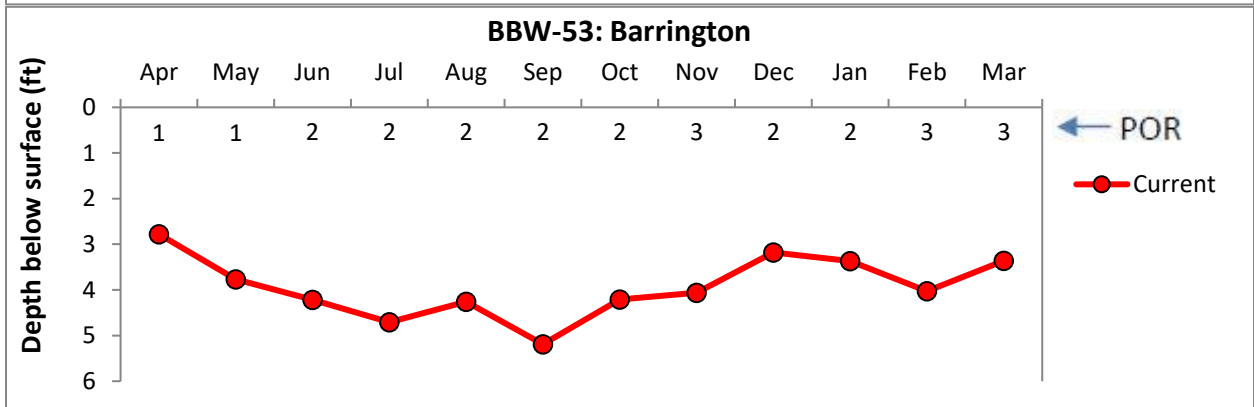
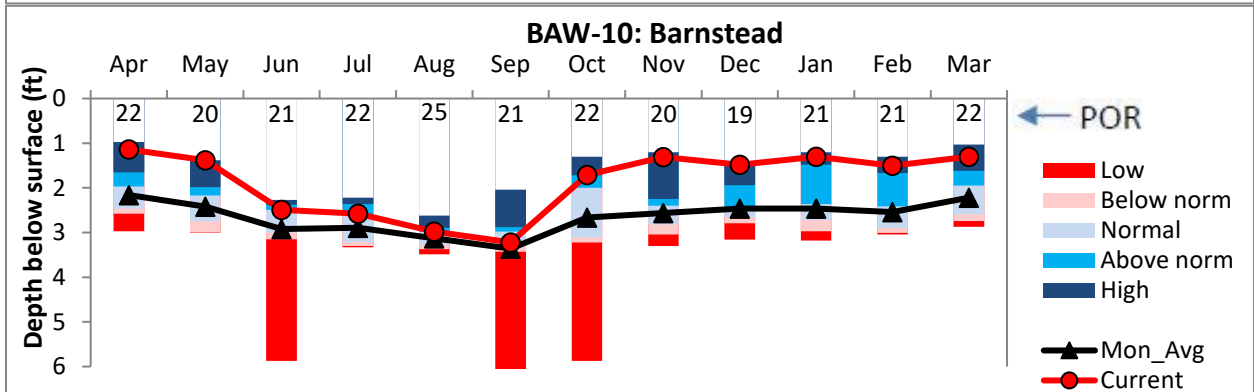
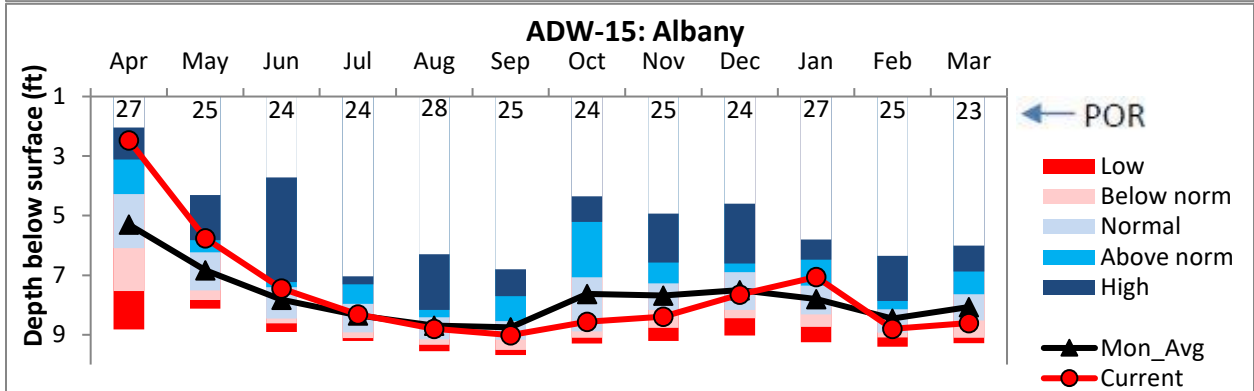
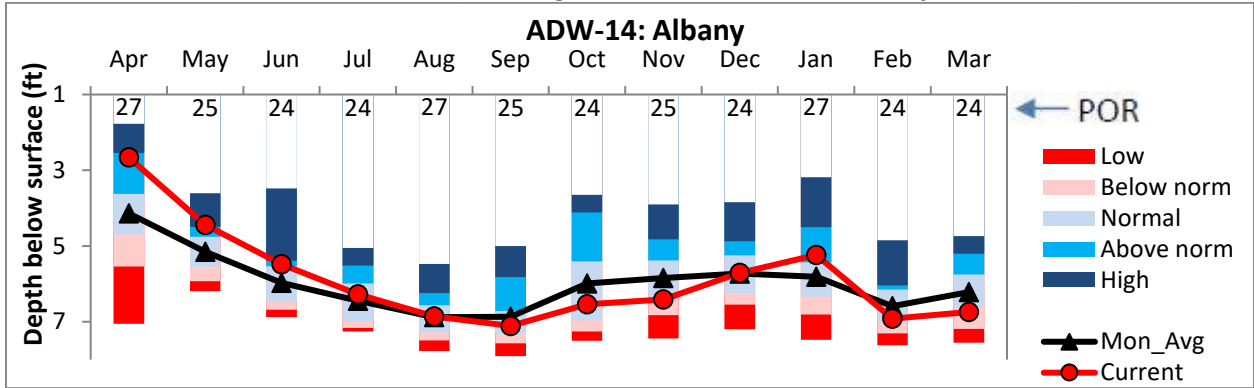
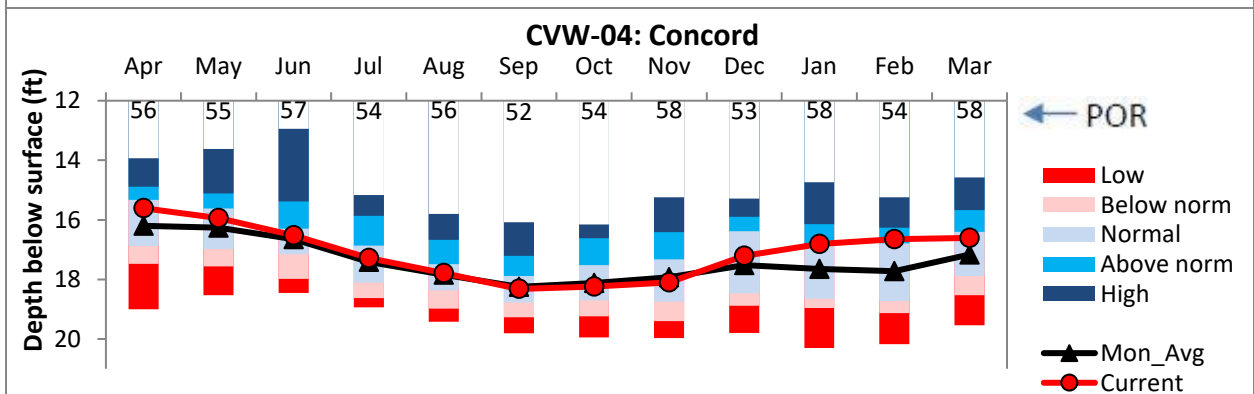
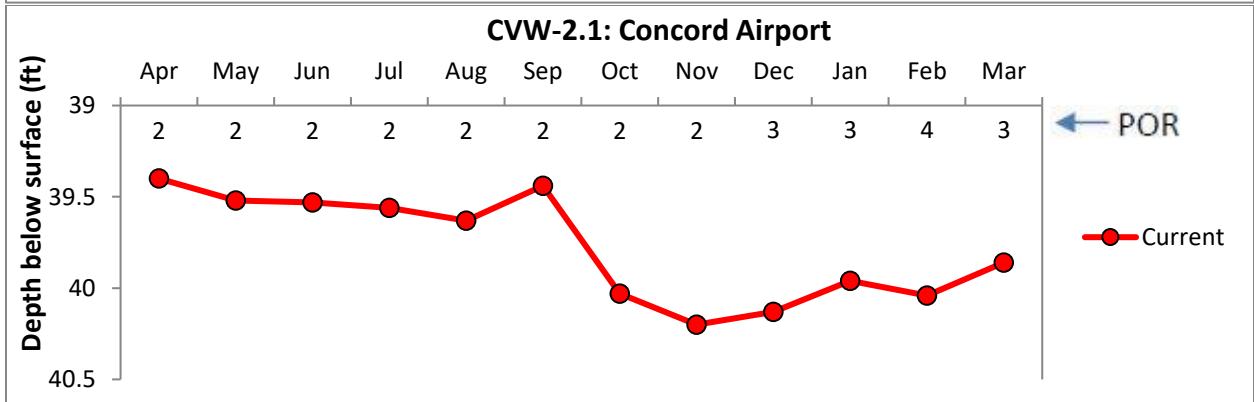
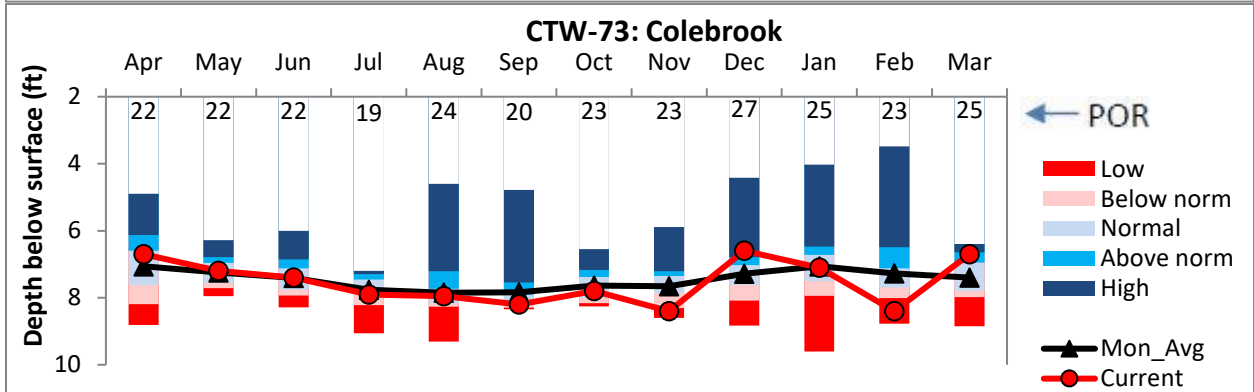
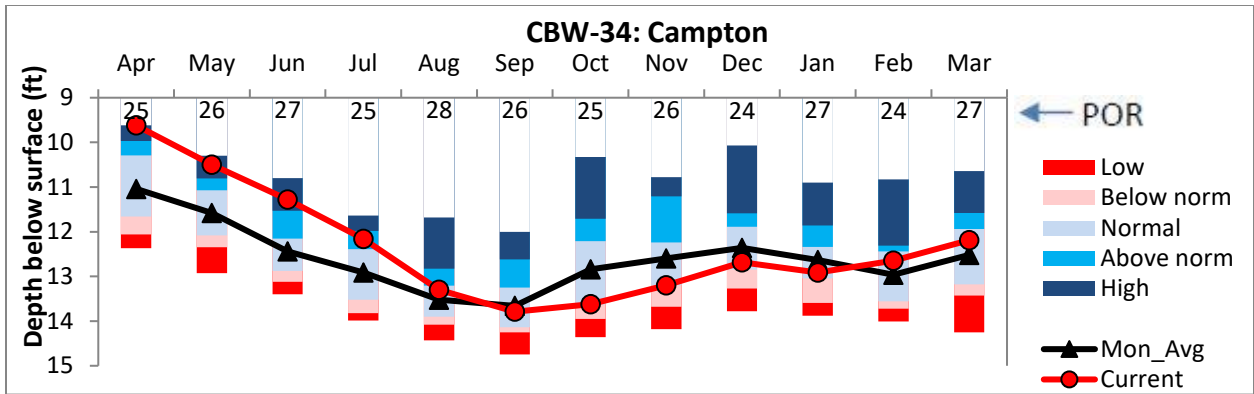
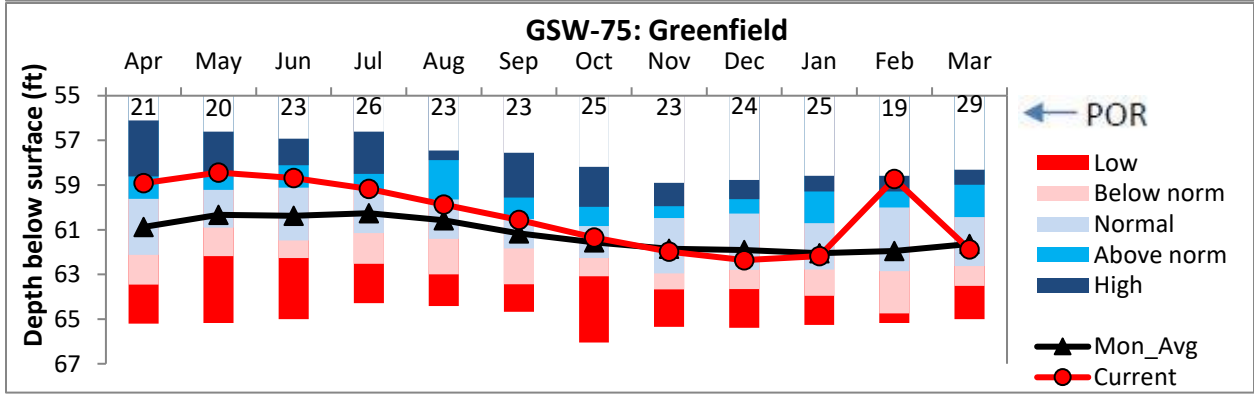
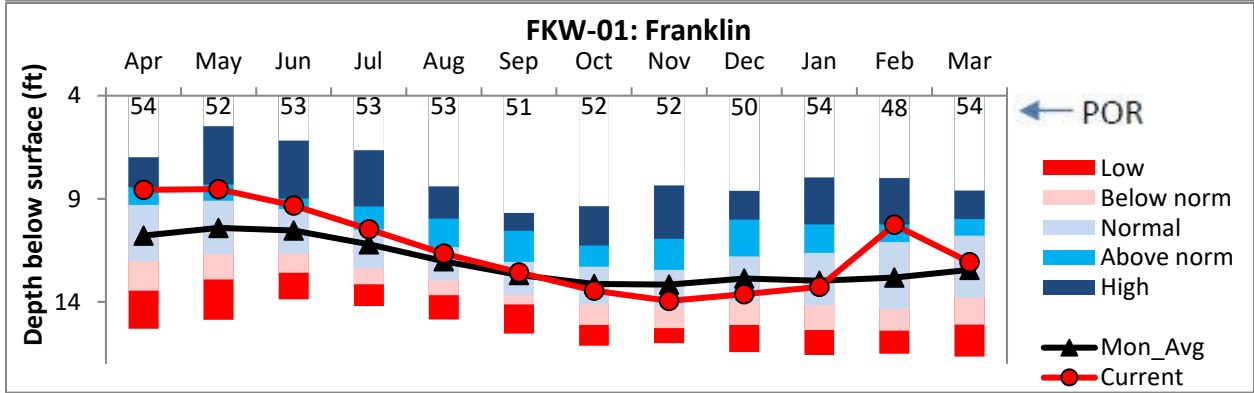
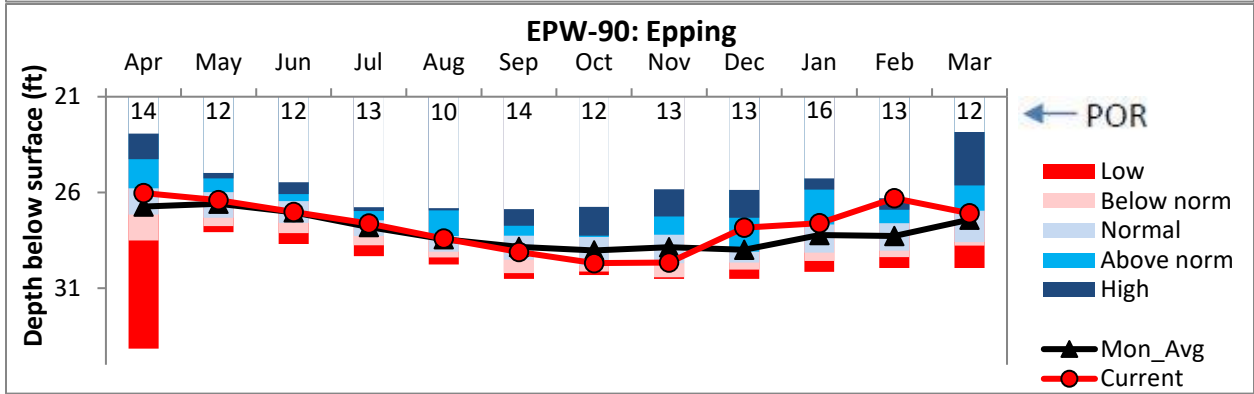
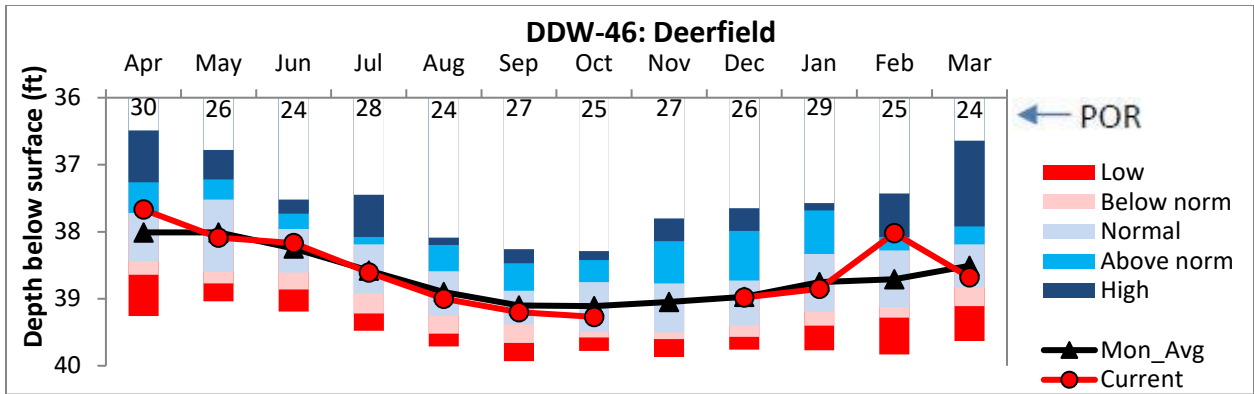


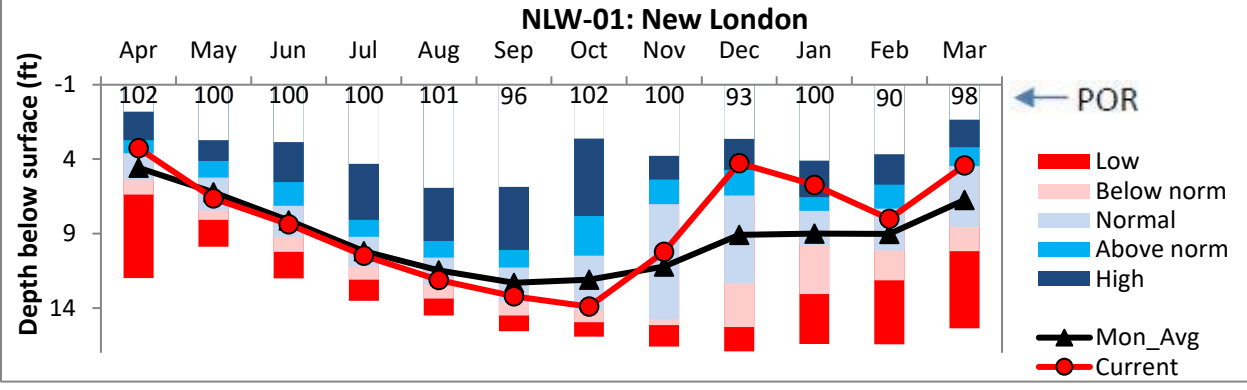
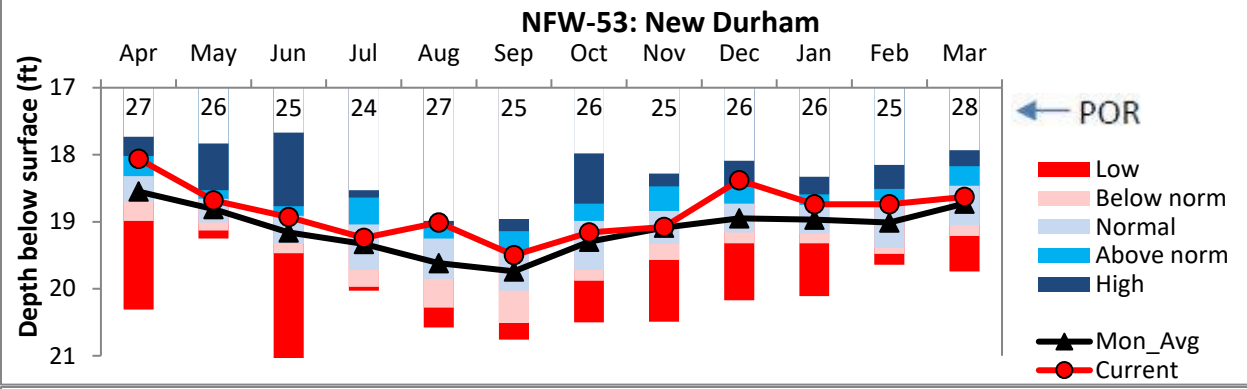
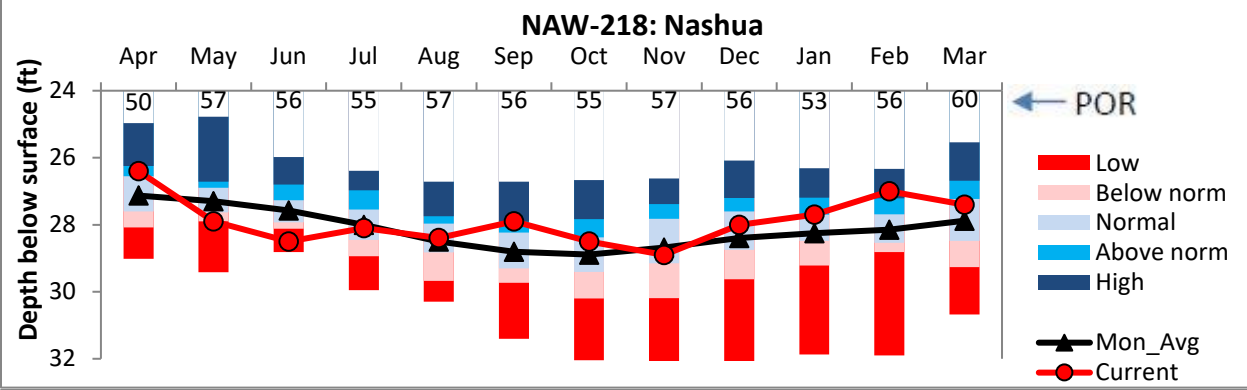
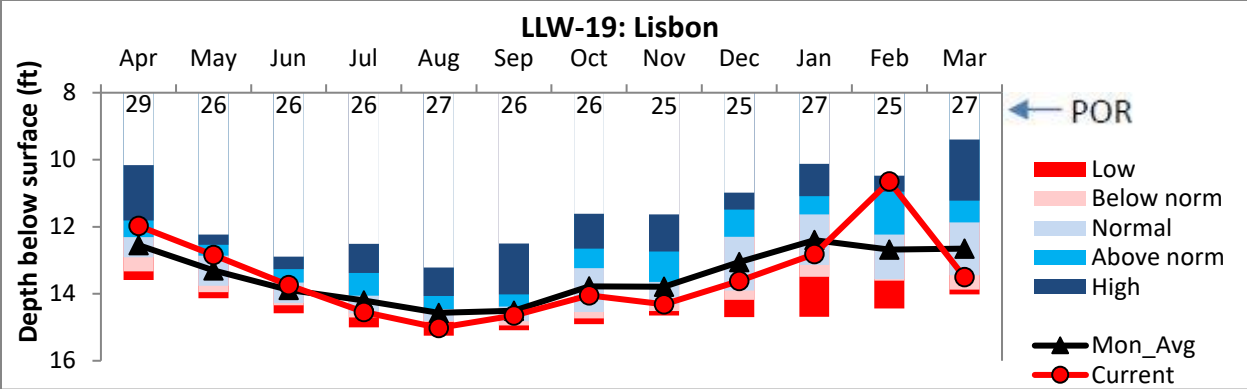
Figure 1. Groundwater Monitoring Network showing groundwater levels relative to statistical envelopes calculated over each well's period of record (POR). Also shown is the percent of normal precipitation from April 8, 2019 to April 7, 2020 provided by the [Northeast Regional Climate Center](#) in cooperation with the National Integrated Drought Information System (NIDIS).

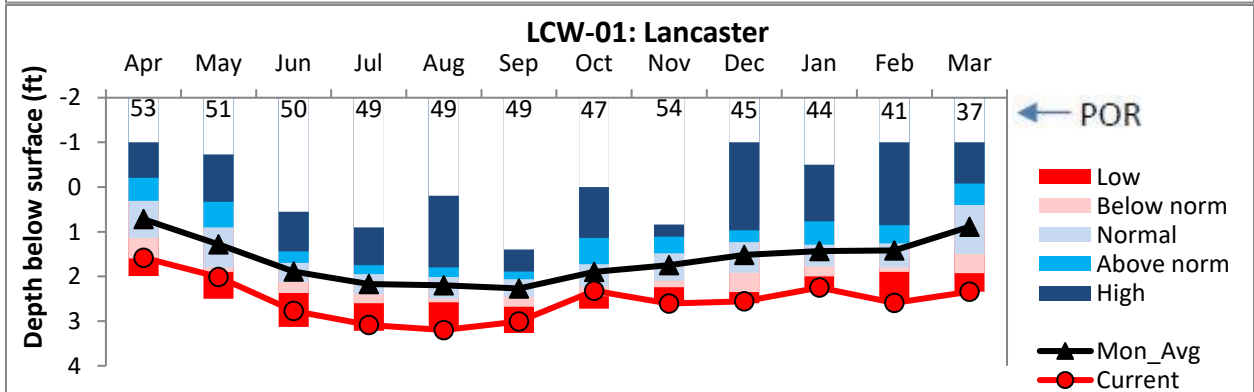
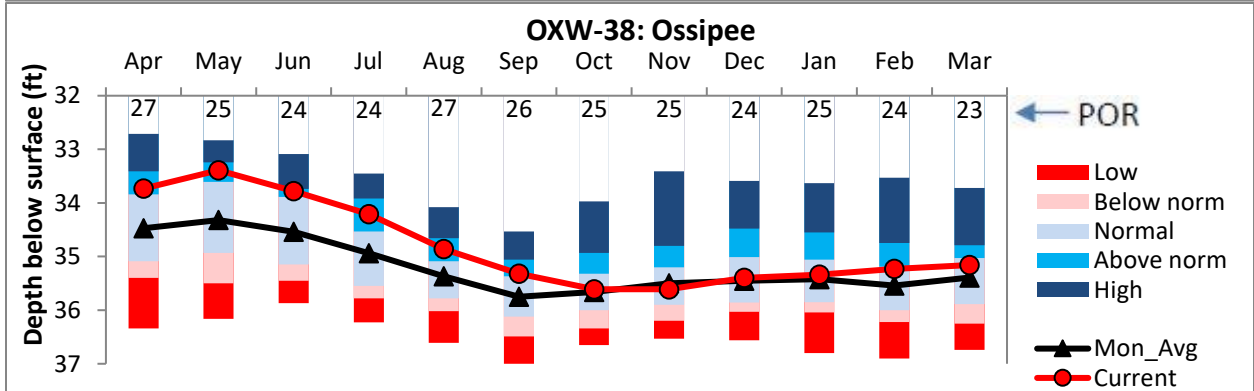
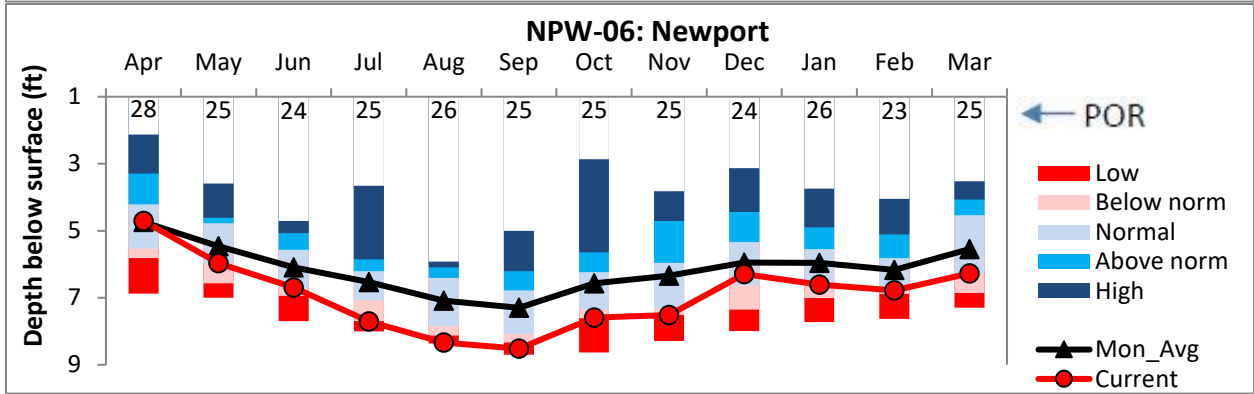
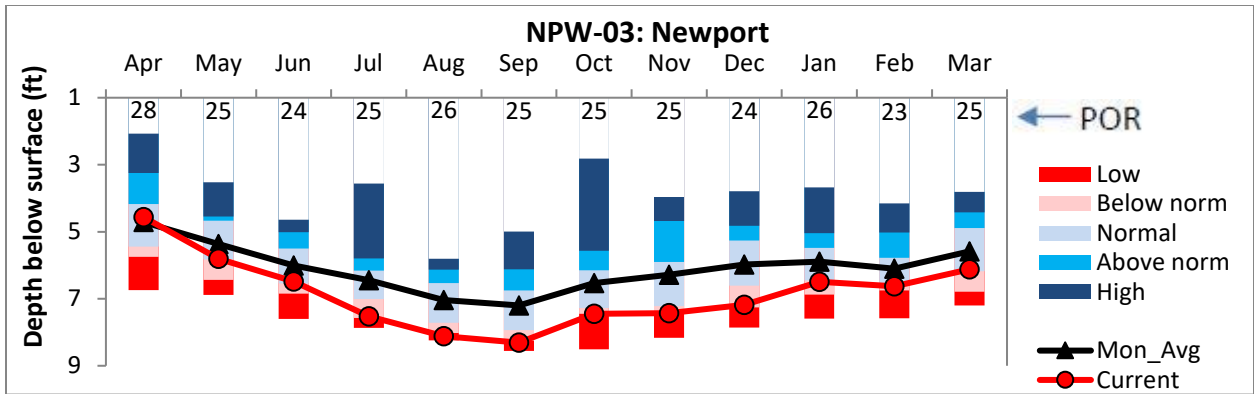
OVERBURDEN WELL HYDROGRAPHS (Showing statistics for wells with ≥ 10 years of data)



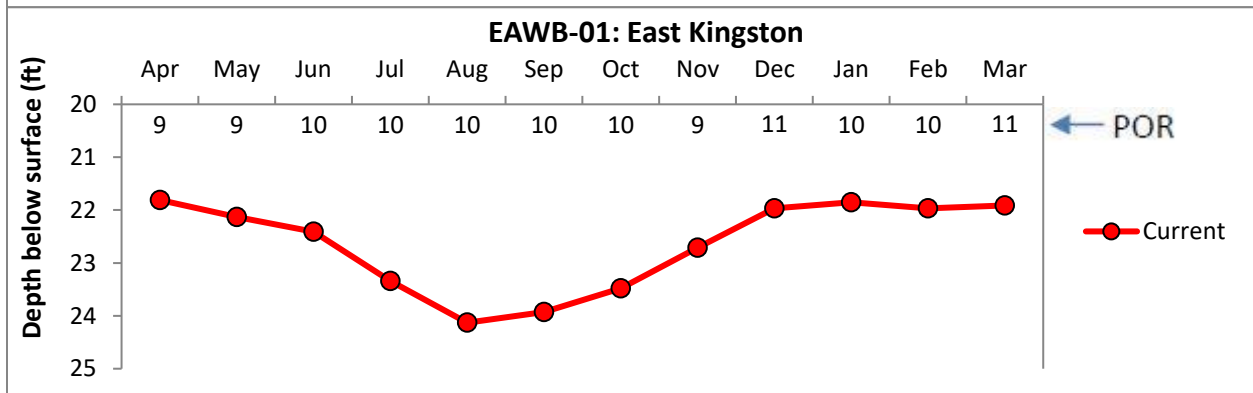
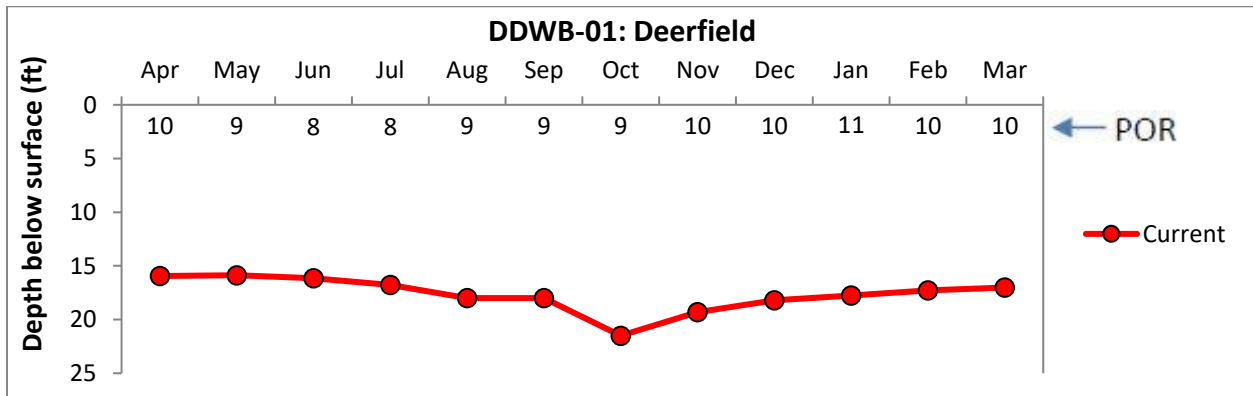
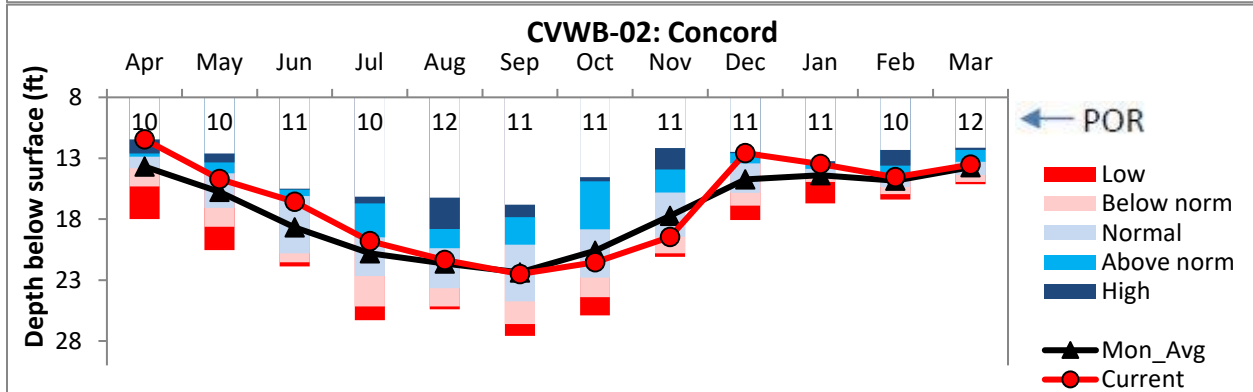
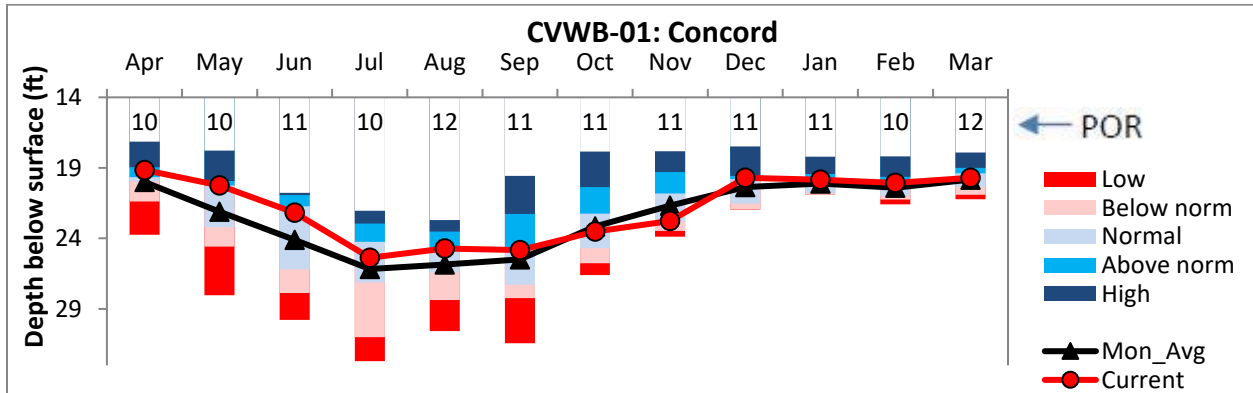


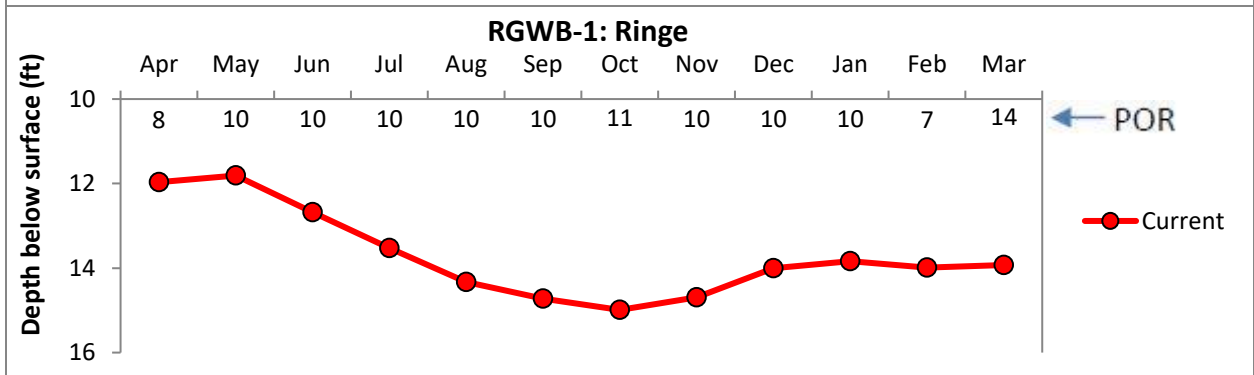
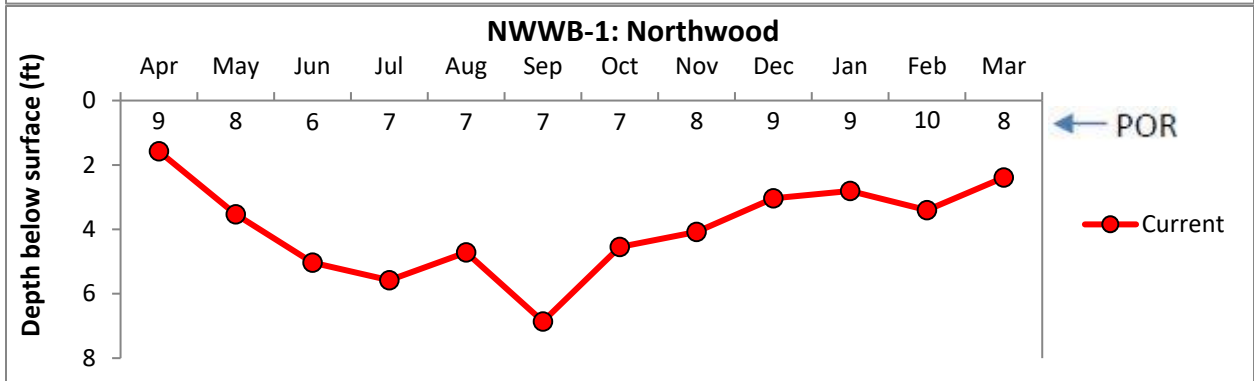
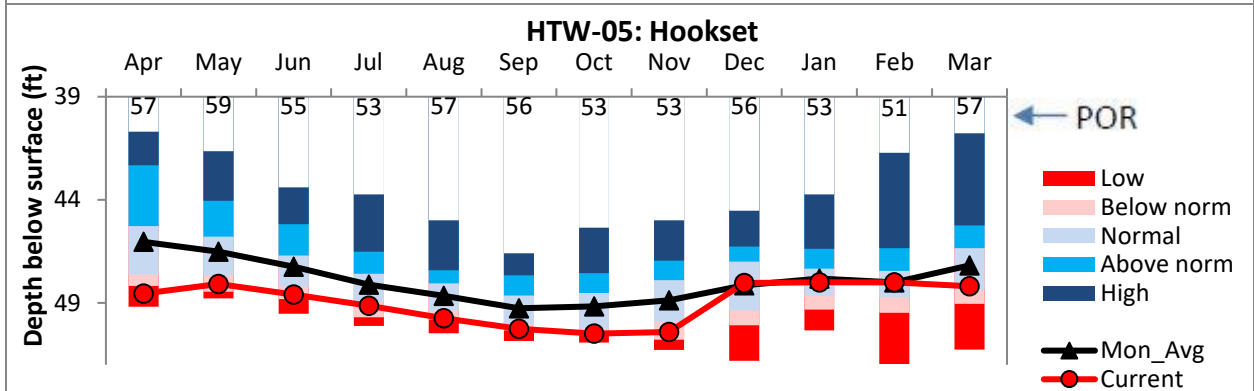
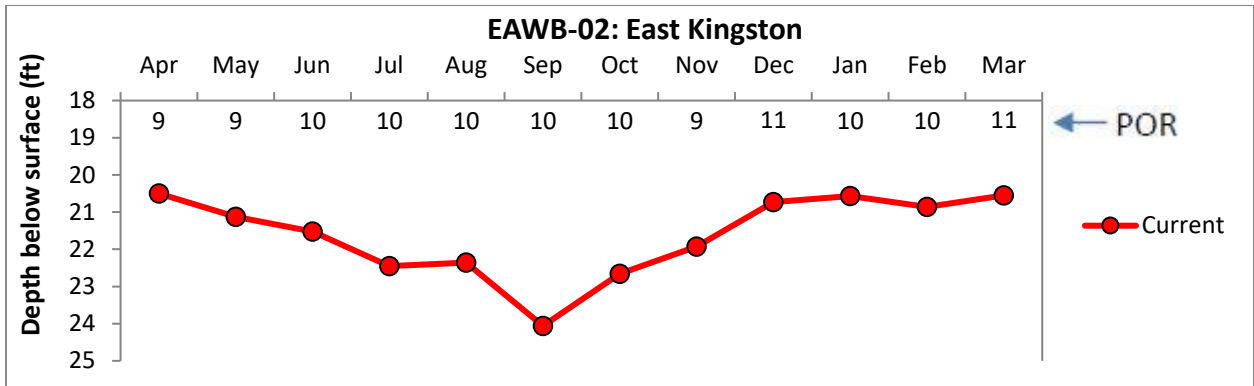






BEDROCK WELL HYDROGRAPHS (Showing statistics for wells with ≥ 10 years of data)





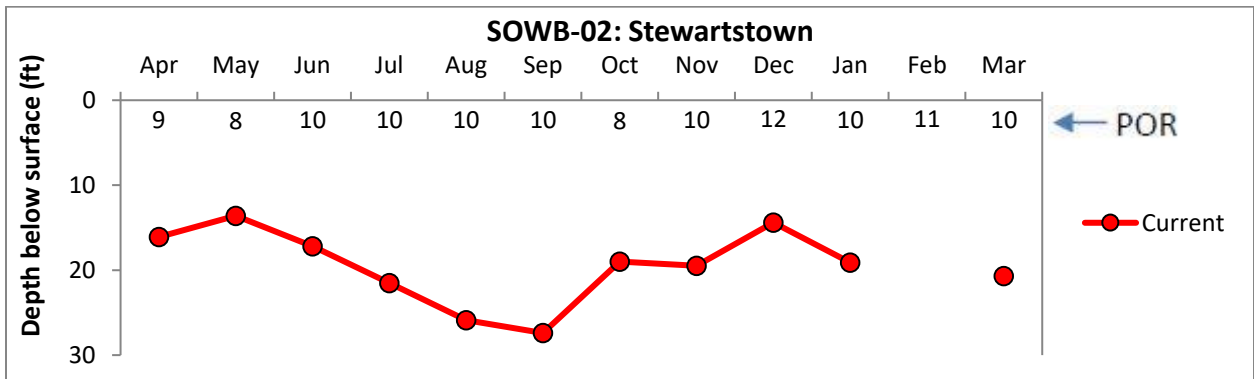
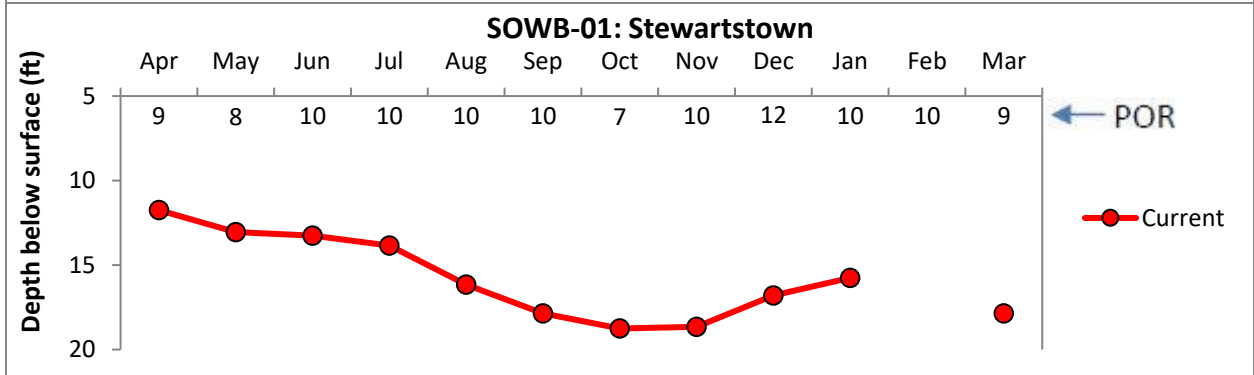
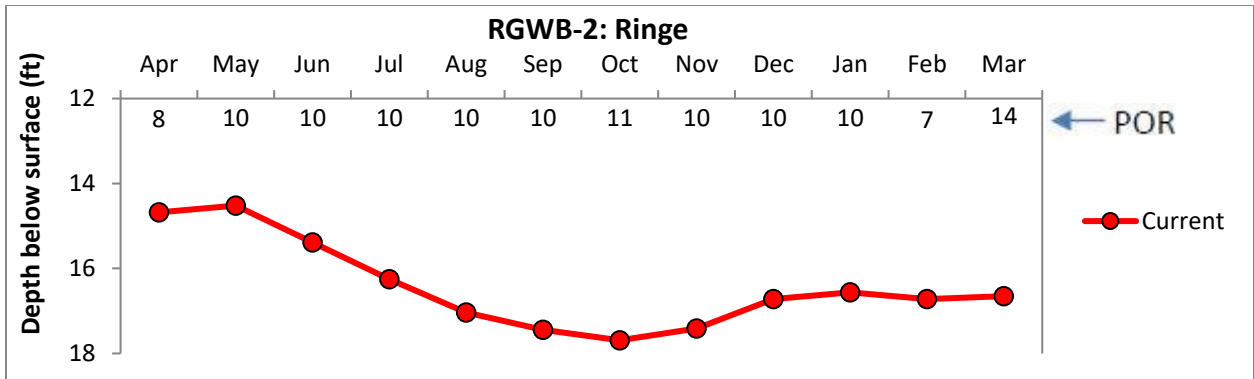


Table 1. Summary of groundwater levels sorted by region

Well	Region	Well type	Screen/ open Interval (ft)	Depth to Water (ft)	Monthly Average (ft)	Current Status	Departure from Avg. (ft)	No. of meas.
BAW-10	Lakes	Overburden	23-25	1.3	2.22	High	0.92	22
FKW-01	Lakes	Overburden	45.5-47.5	12.07	12.45	Normal	0.38	54
NFW-53	Lakes	Overburden	28-30	18.63	18.73	Normal	0.1	28
OXW-38	Lakes	Overburden	0-22.55	35.16	35.39	Normal	0.23	23
CVW-02.1	Merrimack	Overburden	59.8-61.8	39.86	-	Not Ranked	-	-
CVW-04	Merrimack	Overburden	25-27	16.61	17.17	Normal	0.56	58
DDW-46	Merrimack	Overburden	59.8-61.8	38.68	38.51	Normal	-0.17	24
NAW-218	Merrimack	Overburden	66-68	27.4	27.88	Normal	0.48	60
CVWB-01	Merrimack	Bedrock	470-480	19.71	19.83	Normal	0.12	12
CVWB-02	Merrimack	Bedrock	0-315	13.53	13.73	Normal	0.2	12
DDWB-01	Merrimack	Bedrock	0-300	17.02	-	Not Ranked	-	-
HTW-05	Merrimack	Bedrock	0-102.7	48.19	47.18	Normal	-1.01	57
NWWB-01	Merrimack	Bedrock	0-130	2.39	-	Not Ranked	-	-
GSW-75	Monadnock	Overburden	35.8-37.8	61.88	61.64	Normal	-0.24	29
RGWB-01	Monadnock	Bedrock	391-401	13.93	-	Not Ranked	-	-
RGWB-02	Monadnock	Bedrock	0-285	16.65	-	Not Ranked	-	-
CTW-73	North Woods	Overburden	105-107	6.7	7.4	Above norm	0.7	25
LCW-01	North Woods	Overburden	28-30	2.34	0.89	Low	-1.45	37
SOWB-01	North Woods	Bedrock	443-453	17.85	-	Not Ranked	-	-
SOWB-02	North Woods	Bedrock	0-303	20.7	-	Not Ranked	-	-
BBW-53	Seacoast	Overburden	21-23	3.36	-	Not Ranked	-	-
EPW-90	Seacoast	Overburden	39.45-40.7	27.09	27.43	Normal	0.34	12
EAWB-01	Seacoast	Bedrock	463-473	21.91	-	Not Ranked	-	-
EAWB-02	Seacoast	Bedrock	0-323	20.55	-	Not Ranked	-	-
NLW-01	Sunapee	Overburden	40-42	4.41	6.75	Above norm	2.34	98
NPW-03	Sunapee	Overburden	40.5-42.5	6.12	5.59	Normal	-0.53	25
NPW-06	Sunapee	Overburden	58-60	6.27	5.55	Normal	-0.72	25
ADW-14	White Mtns.	Overburden	77.5-79.5	6.74	6.22	Below norm	-0.52	24
ADW-15	White Mtns.	Overburden	16-18	8.61	8.07	Below norm	-0.54	23
CBW-34	White Mtns.	Overburden	21-23	12.19	12.52	Normal	0.33	27
LLW-19	White Mtns.	Overburden	49.8-52.3	13.5	12.65	Below norm	-0.85	27