

Groundwater Report

Drought Management

Advisory Council

Raleigh, NC

September 29, 2020

Nat Wilson

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Groundwater Management Branch

Groundwater Resources Section

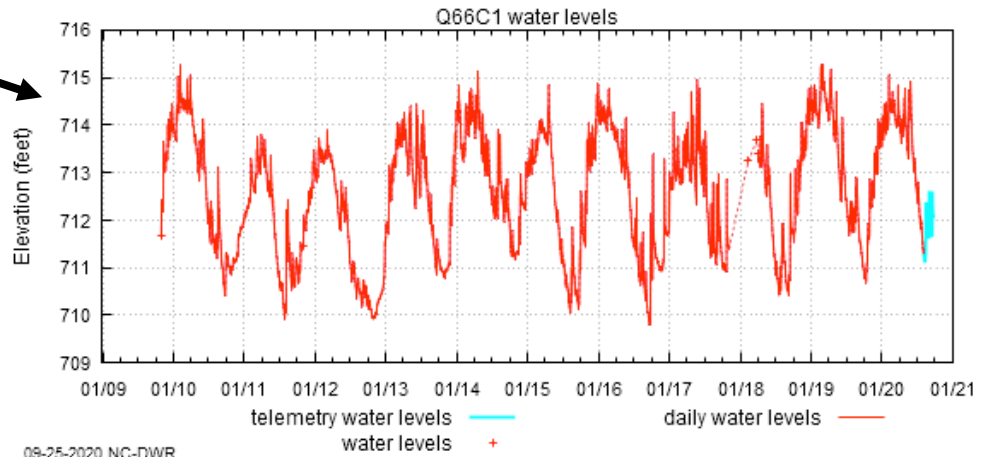
Drought Indicator Wells

- 81 wells with a 32 year average record
- 33 have telemetry (satellite or cell phone)
- 49 DWR wells
- 17 USGS wells
- 15 Local wells



Example DIW (Hornets Nest)

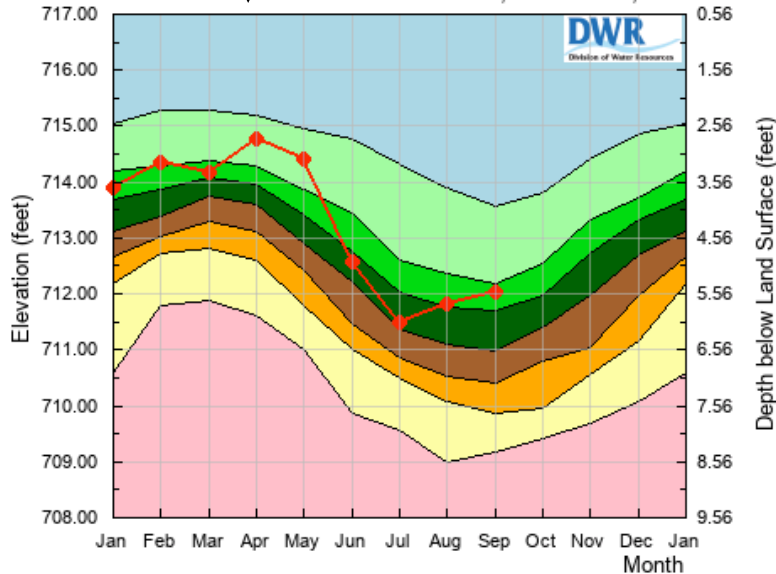
Water levels collected over time at various times of year can be seen in the time-series plot.



Collapse that plot into a year's time and represent the distribution of historical data as colored, monthly percentile ranges.



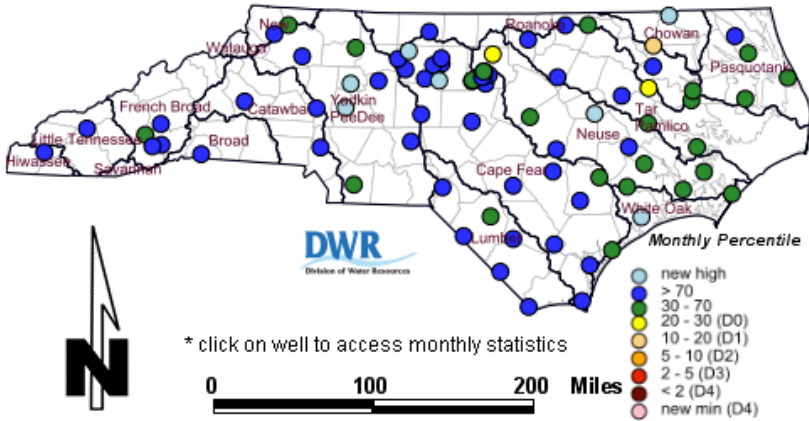
Hornets Nest Park, Year: 2020, Statistics Thru: 2019



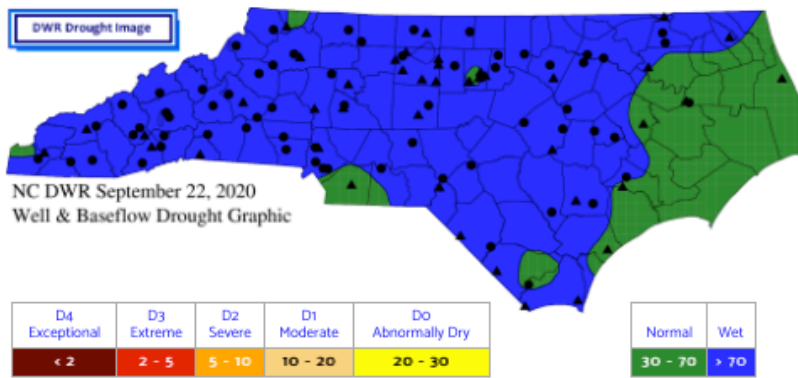
- Above Monthly Maximum
- Above 90th Percentile
- 75th - 90th Percentile
- 50th - 75th Percentile
- 25th - 50th Percentile
- 10th - 25th Percentile
- Below 10th Percentile
- Below Monthly Minimum
- Year of Interest Levels

Now, it's much easier to see how this year's water levels compare to that well's history of water levels.





Water level in status table ranked against historical data for the matching month through 2019.



Contoured baseflow (circles) and well (triangles) percentile data. Current or selected month ranked against data from same month in previous years (1965 - 2019). Graphic is re-drawn each Tuesday.

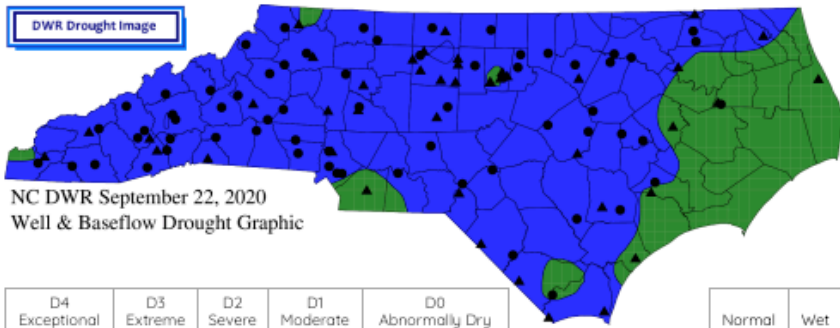
Today: September 25, 2020

#	WELL NAME	CUR%ILE	STATUS	COUNTY	RIVER BASIN	YEARS	%-DAILY
1	Columbus	92	Sep 21, 2020	Polk	Broad	46	42
2	Kelly	85	Jul 27, 2020	Bladen	Cape Fear	40	36
3	Southport (BR-083)	80	Sep 21, 2020	Brunswick	Cape Fear	51	47
4	General Timber	78	Aug 10, 2020	Chatham	Cape Fear	7	94
5	Seabrook School	84	Jul 28, 2020	Cumberland	Cape Fear	39	39
6	Rose Hill (NC-222R)	83	Sep 21, 2020	Duplin	Cape Fear	38	51
7	Pink Hill	41	Jul 29, 2020	Duplin	Cape Fear	9	97
8	Hagan Stone Park	91	Aug 25, 2020	Guilford	Cape Fear	17	76
9	Gibsonville	99	Sep 21, 2020	Guilford	Cape Fear	53	38
10	Summerfield (Jack Dent Park)	100	Aug 25, 2020	Guilford	Cape Fear	18	76
11	Prison Farm	91	Aug 25, 2020	Guilford	Cape Fear	16	80
12	Gibson Park	93	Aug 25, 2020	Guilford	Cape Fear	17	83
13	Knox Road	80	Jul 14, 2020	Guilford	Cape Fear	18	79
14	Triad Park	93	Aug 25, 2020	Guilford	Cape Fear	18	81
15	Station 45 (Humble Road)	100	Aug 25, 2020	Guilford	Cape Fear	15	52
16	NH Correctional Institute **	80	Aug 13, 2020	New Hanover	Cape Fear	8	93
17	Camp Lejeune	100	Jul 28, 2020	Onslow	Cape Fear	33	90
18	Millhouse Road	75	Sep 10, 2020	Orange	Cape Fear	10	100
19	COL-1	68	Aug 31, 2020	Orange	Cape Fear	9	98
20	UNC Campus	90	Jul 28, 2020	Orange	Cape Fear	65	33
21	DF-4D	94	Sep 10, 2020	Orange	Cape Fear	51	16
22	COL-4	69	Aug 31, 2020	Orange	Cape Fear	9	99
23	Eubanks Road	81	Sep 10, 2020	Orange	Cape Fear	10	100
24	COL-3	69	Aug 31, 2020	Orange	Cape Fear	9	100
25	Blackwood Farm Bedrock	56	Aug 31, 2020	Orange	Cape Fear	10	100
26	Topsail Beach	65	Sep 21, 2020	Pender	Cape Fear	37	44
27	NC Zoo	92	Sep 21, 2020	Randolph	Cape Fear	48	38
28	Halls	82	Jul 27, 2020	Sampson	Cape Fear	40	38
29	Glen Alpine (BK-126)	98	Sep 21, 2020	Burke	Catawba	50	40
30	Troutman	90	Sep 21, 2020	Iredell	Catawba	52	54
31	Hornets Nest Park	89	Sep 21, 2020	Mecklenburg	Catawba	25	100
32	Roxobel	18	Aug 4, 2020	Bertie	Chowan	21	100
33	Como	100	Sep 21, 2020	Hertford	Chowan	39	43
34	Bent Creek	72	Aug 12, 2020	Buncombe	French Broad	9	100
35	Champion (HW-047)	65	Sep 21, 2020	Haywood	French Broad	65	97
36	Blantyre (NC-144)	72	Sep 21, 2020	Transylvania	French Broad	39	99
37	Pisgah Forest (NC-147)	97	Sep 21, 2020	Transylvania	French Broad	35	98
38	American Thread (NC-192)	71	Sep 21, 2020	Cherokee	Hiwassee	31	100
39	Bryson City	86	Sep 21, 2020	Swain	Little Tennessee	55	41

NC DMAC, Current Conditions Tab
<https://www.ncdrought.org/current-conditions.php>

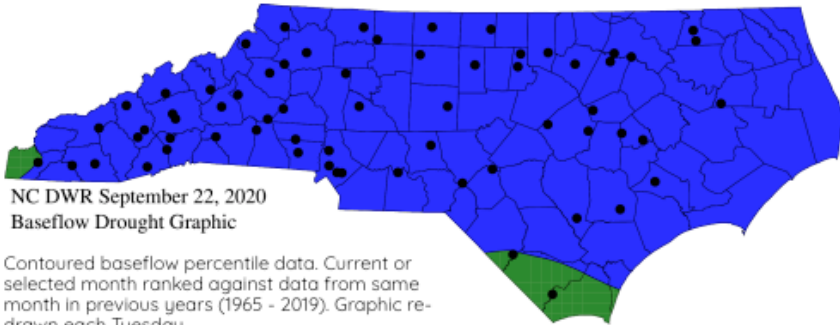


DWR Drought Image



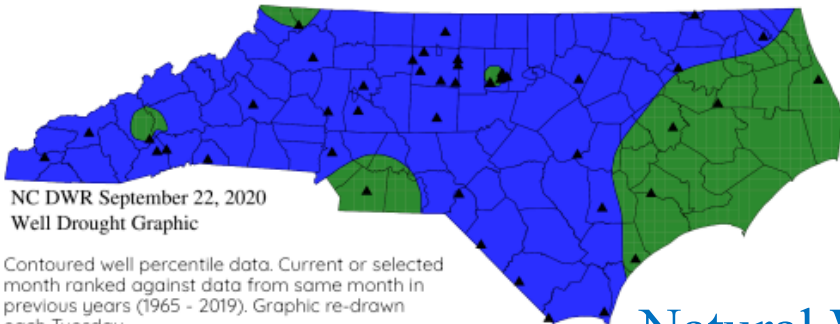
NC DWR September 22, 2020
Well & Baseflow Drought Graphic

Contoured baseflow (circles) and well (triangles) percentile data. Current or selected month ranked against data from same month in previous years (1965 - 2019). Graphic re-drawn each Tuesday.



NC DWR September 22, 2020
Baseflow Drought Graphic

Contoured baseflow percentile data. Current or selected month ranked against data from same month in previous years (1965 - 2019). Graphic re-drawn each Tuesday.



NC DWR September 22, 2020
Well Drought Graphic

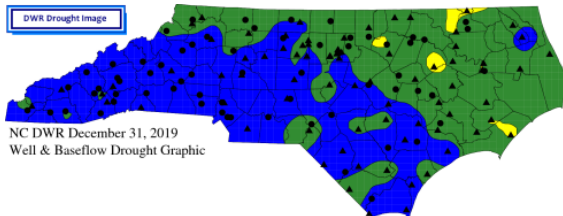
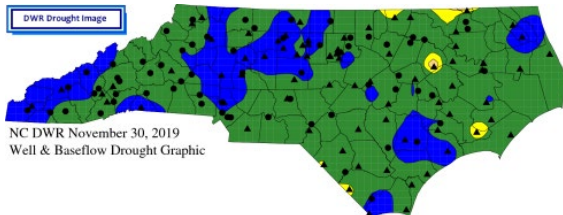
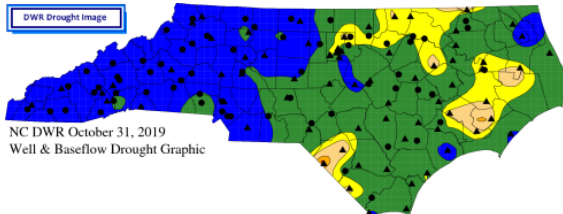
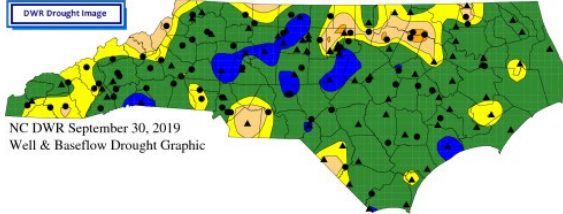
Contoured well percentile data. Current or selected month ranked against data from same month in previous years (1965 - 2019). Graphic re-drawn each Tuesday.

DWR Drought Image

- Surface water gage data is filtered to create daily baseflow data – baseflow separation
- Latest baseflow values are ranked against historical baseflow data
- The resulting percentiles are contoured
- Similarly, latest groundwater levels are ranked against historical groundwater level data and the resulting percentiles are contoured
- The combined set of percentiles are contoured in the DWR Drought Image (top map)

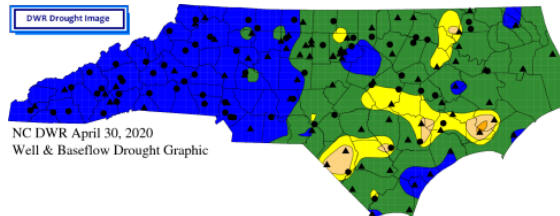
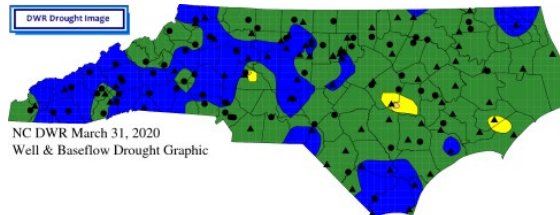
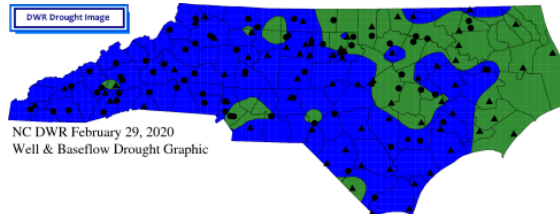
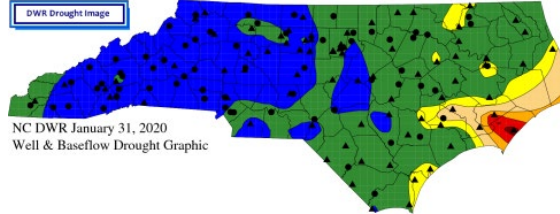
Year in Review

September 2019



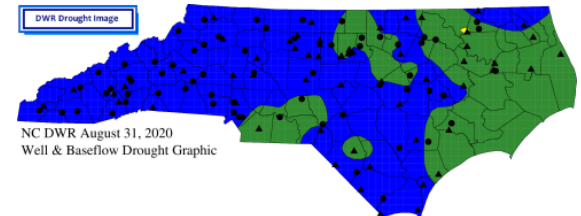
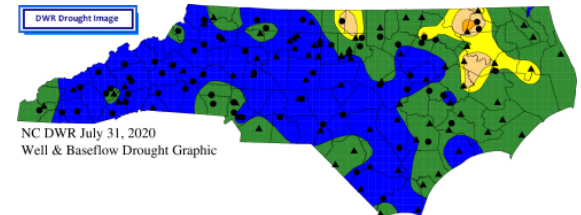
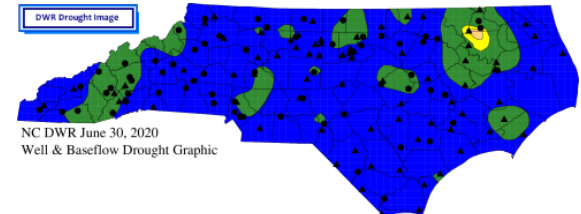
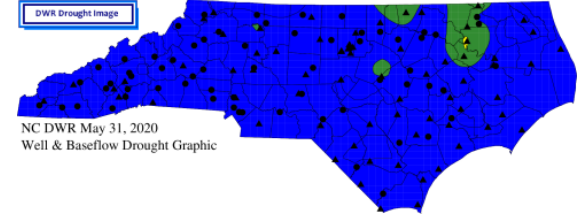
December 2019

January 2020



April 2020

May 2020



August 2020



What's Next?

Adding wells

- Additional DWR wells will age into the drought indicator well network (with 5 to 10 years of data).
- DWR has reached the peak number of telemetry wells using the current equipment. Maybe another platform will allow expansion?

Local networks

- Orange and Guilford county wells have been added to the Drought Indicator Well webpage and are used for drought analysis.
- Wake County (USGS) is currently collecting water level and quality data from their own network.

Como Station
Hertford County

