

Ground Water Assessment Report

Drought Management Advisory
Council Meeting in Williamston, NC
July 21, 2011

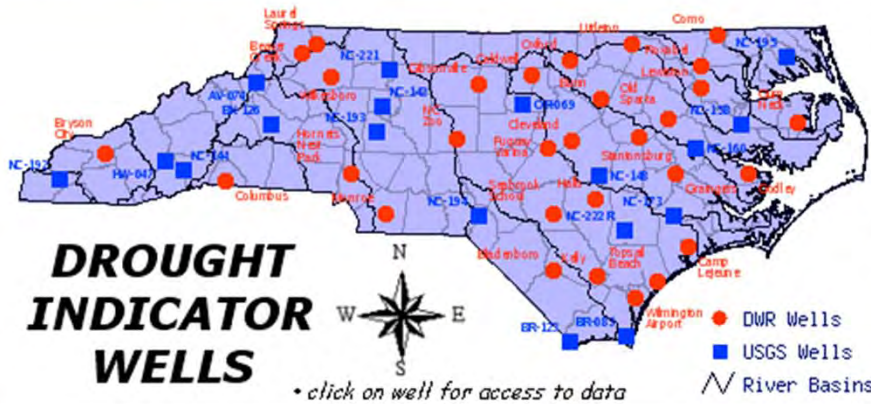
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Ground Water Management Branch
Water Resources Management Section



Drought Indicator Wells

- Ground water levels are a measure of the amount of water stored in the subsurface that is available to discharge to surface water features
- 48 wells with a 30 year average record, records range from 6 to 63 years long
- 18 wells monitored by USGS
 - Automatic recorders, hourly data, satellite "real-time" access to measurements
- 30 wells monitored by DWR
 - Automatic recorders, hourly data, downloaded quarterly (Feb, May, Aug & Nov)
- Several "new" wells are currently being monitored and will fill some of the large geographic gaps in the current network

Division of Water Resources

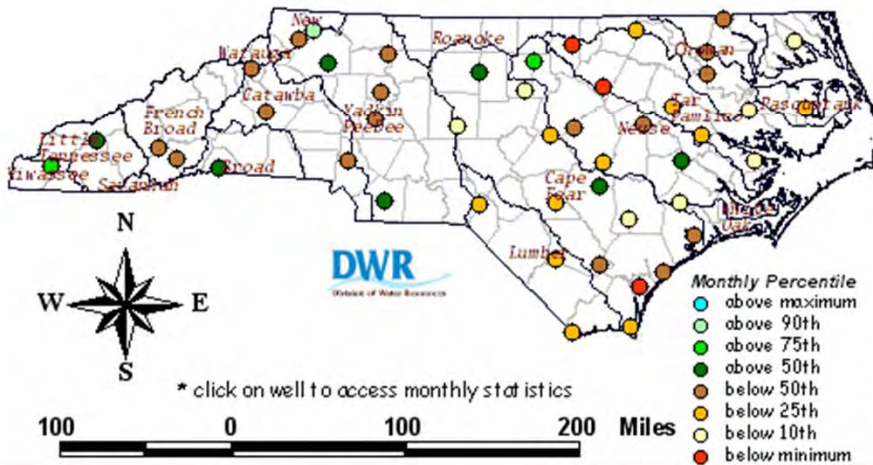


The NC Division of Water Resources and the US Geological Survey monitor ground water levels in the following wells to measure the impact of rainfall (or the lack of rainfall). These wells are chosen as **Drought Indicator Wells** because they respond to rainfall quickly and their levels are a measure of the amount of water stored in the subsurface that is available to discharge to surface water features. The "status" column is a quick check to see which wells are above or below average monthly water levels. It is a comparison between the current month represented by the date and the average or ranking of all levels recorded in that month in previous years. Links on the maps to the left give the user access to the entire water level record or monthly percentile plots for a well.

Today: July 18, 2011

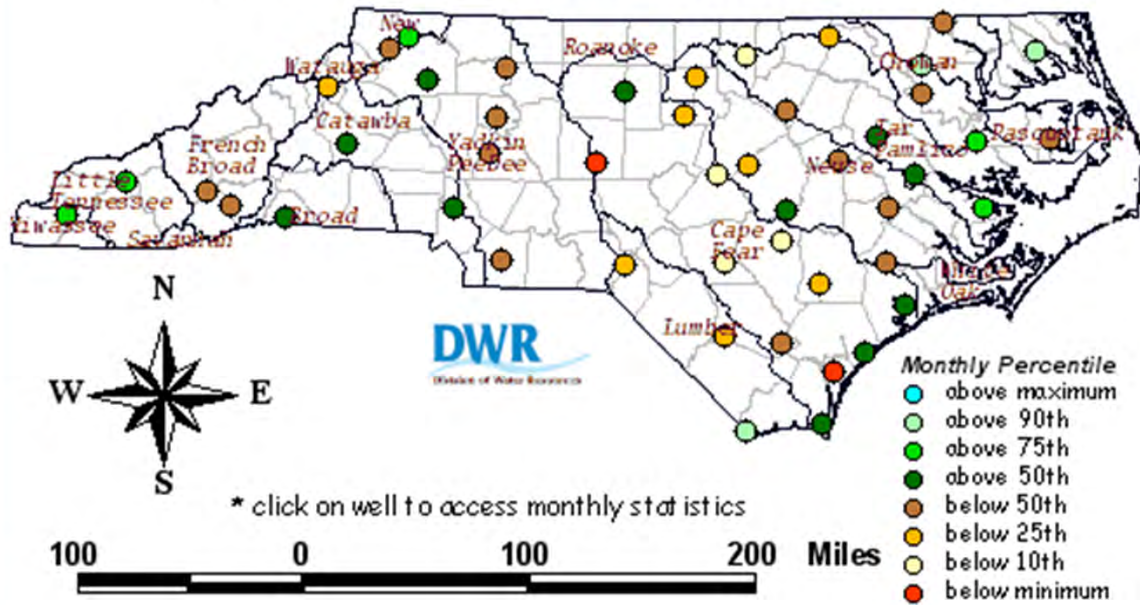
#	Well Name	Status	County	River Basin	Years	%-Daily
1	Columbus	May 10, 2011	Polk	Broad	36	26
2	Kelly	May 4, 2011	Bladen	Cape Fear	30	18
3	Southport (BR-083)	Jul 17, 2011	Brunswick	Cape Fear	41	35
4	Seabrook School	May 3, 2011	Cumberland	Cape Fear	30	20
5	Rose Hill (NC-222R)	Jul 17, 2011	Duplin	Cape Fear	29	35
6	Gibsonville	May 10, 2011	Guilford	Cape Fear	43	25
7	Wilmington Airport **	May 4, 2011	New Hanover	Cape Fear	27	31
8	Camp Lejeune	May 23, 2011	Onslow	Cape Fear	24	85
9	UNC Campus (OR-069)	Jun 19, 2011	Orange	Cape Fear	63	24
10	Topsail Beach	May 5, 2011	Pender	Cape Fear	28	25
11	NC Zoo	May 16, 2011	Randolph	Cape Fear	39	24
12	Halls	May 16, 2011	Sampson	Cape Fear	31	19
13	Fuquay Varina	May 24, 2011	Wake	Cape Fear	29	27
14	Linville (AV-074)	Jun 19, 2011	Avery	Catawba	39	30
15	Glen Alpine (BK-126)	Jul 17, 2011	Burke	Catawba	41	26
16	Hornets Nest Park	May 16, 2011	Mecklenburg	Catawba	25	105
17	Roxobel	May 9, 2011	Bertie	Chowan	15	94
18	Como	May 9, 2011	Hertford	Chowan	30	25
19	Champion (HW-047)	Jun 19, 2011	Haywood	French Broad	55	96
20	Blantyre (NC-144)	Jul 17, 2011	Transylvania	French Broad	30	99
21	American Thread (NC-192)	Jul 17, 2011	Cherokee	Hiwassee	22	99
22	Bryson City	May 11, 2011	Swain	Little Tennessee	46	31
23	Bladenboro	May 3, 2011	Bladen	Lumber	36	21
24	Calabash (BR-123)	Jul 17, 2011	Brunswick	Lumber	38	25
25	Jordan Creek (NC-194)	Jul 17, 2011	Scotland	Lumber	18	81
26	Cleveland	May 2, 2011	Johnston	Neuse	6	87
27	Comfort (NC-173)	Jul 17, 2011	Jones	Neuse	25	56
28	Graingers	May 11, 2011	Lenoir	Neuse	24	43
29	Caldwell	May 24, 2011	Orange	Neuse	42	11
30	Grantham (NC-148)	Jul 17, 2011	Wayne	Neuse	31	44

Ground Water Level Ranking



Drought Indicator Wells
 Current conditions tab on www.ncdrought.org

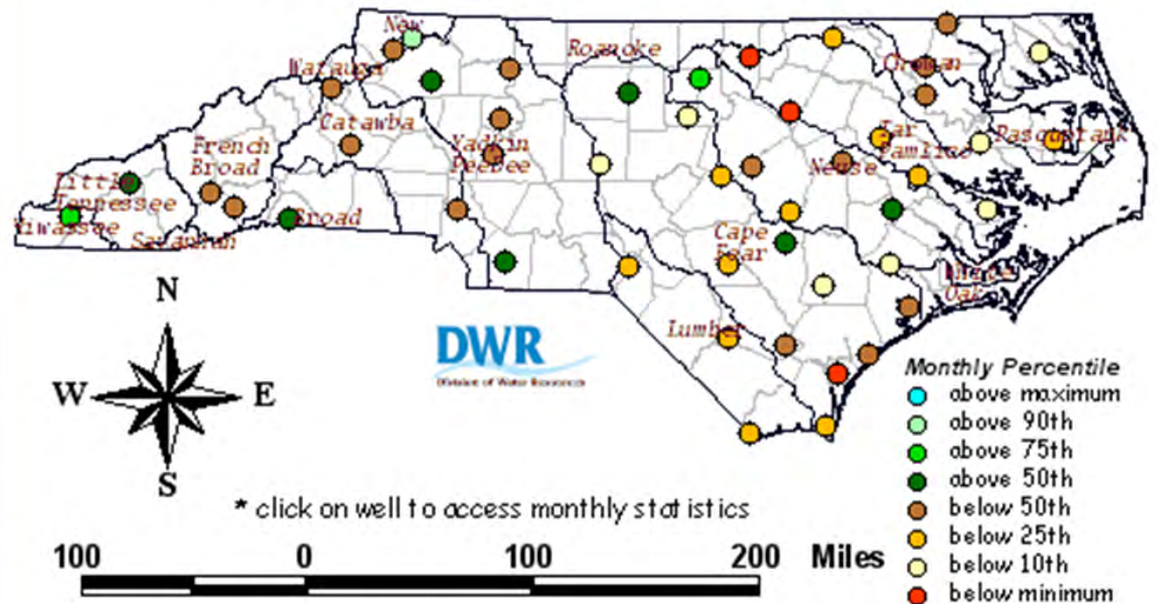
Ground Water Level Ranking



March
2011



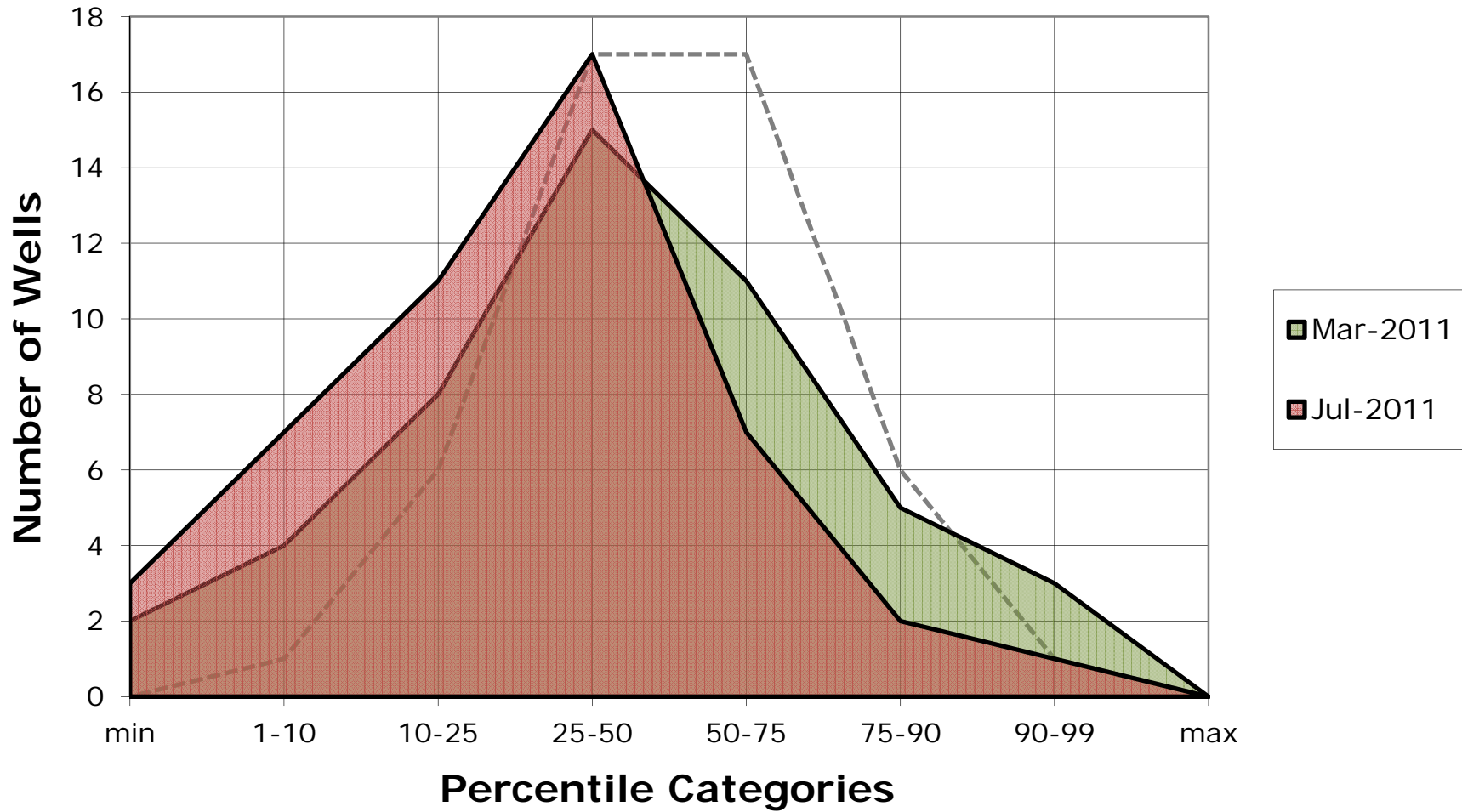
Ground Water Level Ranking



July
2011



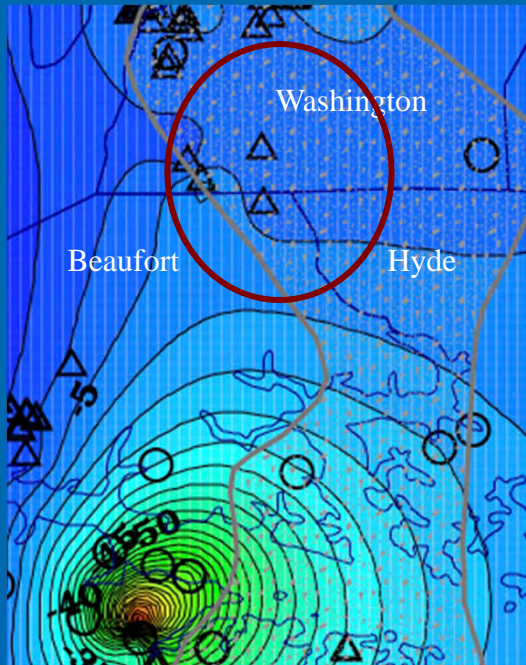
Distribution of Drought Indicator Well Percentiles



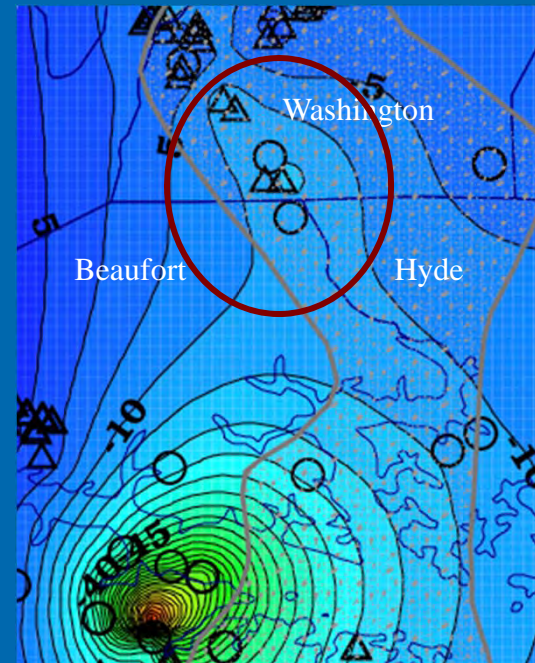
Recent Ground Water Impacts

- Drought tends to lower the water levels in the surficial or water table aquifer
- Near the border between Washington, Beaufort & Hyde Counties concerned farmers increased irrigation withdrawals to save their crops and have lowered ground water levels in the Castle Hayne aquifer
- Home wells nearby, which make use of suction pumps, failed because they can not continue to provide water when levels fall below about 25 feet – the pumps lose prime
- DWR is currently investigating the area and accounting for all the large water users and homes affected

2010



2011



Are the withdrawals sustainable?
Are the withdrawals causing adverse impacts?
Is salt water encroachment a concern?