

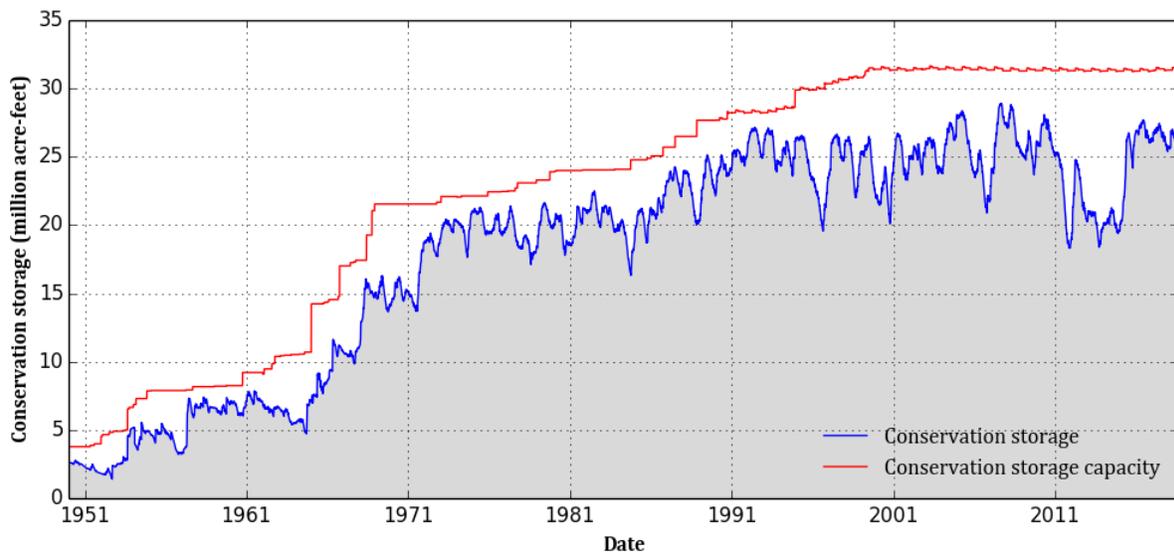
August 2018 RESERVOIR STORAGE*

At the end of August 2018, total conservation storage* in 118 of the state’s major water supply reservoirs plus Elephant Butte Reservoir in New Mexico was 23.44 million acre-feet or 73 percent of total conservation storage capacity. This is approximately 0.77 million acre-feet less than a month ago and 3.48 million acre-feet less than storage at this time last year.

Four (4) reservoirs held 100 percent of conservation storage capacity. Four reservoirs, Palo Duro (1 percent), Twin Buttes (3 percent), and O. C. Fisher (8 percent) remained below 10 percent full. Elephant Butte reservoir is 4 percent full.

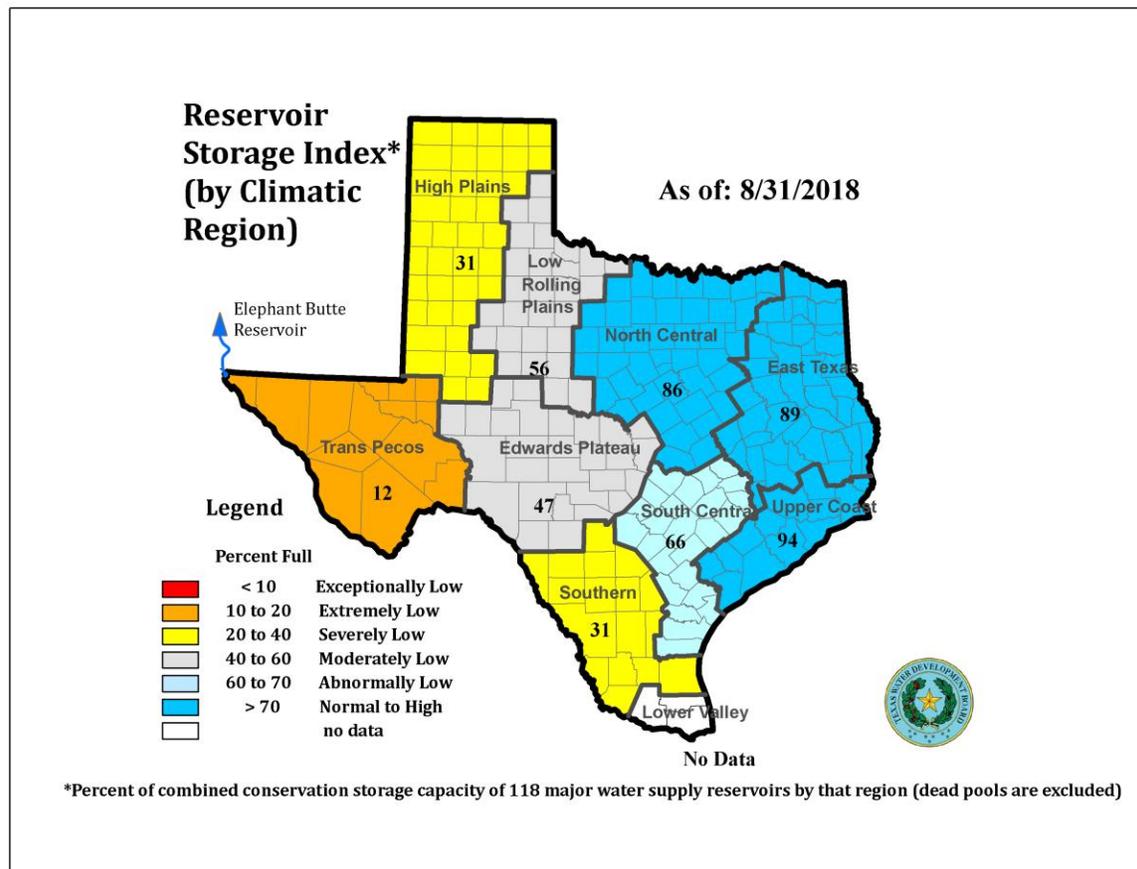
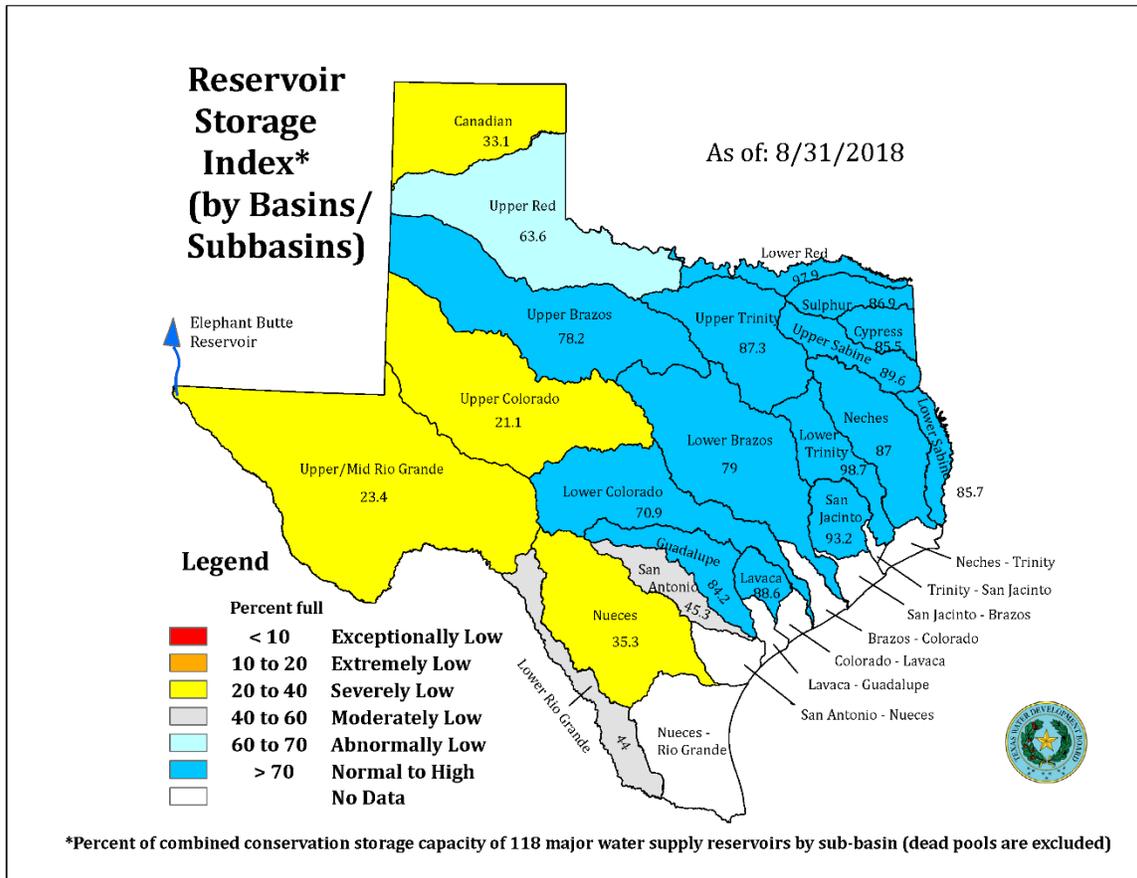
Total combined storage was at or above normal (storage \geq 70 percent) in the Upper Coast (94 percent), East (89 percent), and North Central (86 percent) regions. The High Plains (31 percent), Southern (31 percent), and Trans-Pecos (12 percent) regions had the lowest percentage of storage. Overall, storage decreased in all regions over the past month.

Statewide monitored major water supply reservoir conservation storage



*Storage is based on end of the month data in 118 major reservoirs that represent 96 percent of the total conservation storage capacity of 188 major water supply reservoirs in Texas plus Elephant Butte Reservoir in New Mexico. Major reservoirs are defined as having a conservation storage capacity of 5,000 acre-feet or greater. Only the Texas share of storage in border reservoirs is counted.

AUGUST 2018 RESERVOIR CONDITIONS



*Reservoir Storage Index is defined as the percent full of conservation storage capacity.

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of lake or reservoir	Conservation storage capacity	Conservation storage end of August 2018		Change since end of July 2018		Change since end of August 2017	
	(acre-feet)	(acre-feet)	(%)	(acre-feet)**	(%)	(acre-feet)**	(%)
HIGH PLAINS							
MacKenzie Reservoir	46,450	5,993	13	-140	-0	-1,134	-2
Meredith, Lake	500,000	185,083	37	-3,379	-1	37,386	7
Palo Duro Reservoir	61,066	502	1	-124	-0	no data	
White River Lake	29,880	3,920	13	-440	-1	-2,439	-8
TOTAL	637,396	195,498	31	-4,083	-1	33,813	5
LOW ROLLING PLAINS							
Abilene, Lake	7,900	2,565	32	-291	-4	-3,682	-47
Alan Henry Reservoir	94,808	73,664	78	-1,671	-2	-10,290	-11
Champion Creek Reservoir	41,580	19,983	48	-659	-2	-720	-2
Coleman, Lake	38,075	29,431	77	-849	-2	-6,548	-17
Colorado City, Lake	30,758	9,234	30	-523	-2	-4,337	-14
Fort Phantom Hill, Lake	70,030	52,999	76	-2,133	-3	-13,753	-20
Greenbelt Lake	59,968	12,757	21	-477	-1	-3,040	-5
Hords Creek Lake	8,443	4,426	52	-65	-1	-1,706	-20
J. B. Thomas, Lake	199,931	71,069	36	-4,041	-2	-37,226	-19
Kemp, Lake	245,307	163,468	67	-7,345	-3	-75,003	-31
Millers Creek Reservoir	26,768	18,487	69	-1,047	-4	-8,259	-31
North Fork Buffalo Creek Reservoir	15,400	12,288	80	-854	-6	1,055	7
Stamford, Lake	51,570	34,564	67	-2,196	-4	-17,006	-33
Sweetwater, Lake	12,267	1,682	14	-92	-1	-934	-8
TOTAL	902,805	506,617	56	-22,243	-2	-181,449	-20
NORTH CENTRAL							
Amon G Carter, Lake	19,266	17,128	89	-732	-4	-1,251	-6
Aquilla Lake	43,243	37,469	87	502	1	-4,640	-11
Arlington, Lake	40,188	29,253	73	-2,819	-7	-8,646	-22
Arrowhead, Lake	230,359	178,460	77	-8,250	-4	-23,784	-10
Bardwell Lake	46,122	43,886	95	1,981	4	-277	-1
Belton Lake	435,225	372,954	86	-10,963	-3	-54,422	-13
Benbrook Lake	85,648	58,907	69	1,020	1	-26,154	-31
Bonham, Lake	11,027	8,928	81	-445	-4	-2,014	-18
Bridgeport, Lake	366,236	290,113	79	-23,320	-6	-66,848	-18
*Brownwood, Lake	128,839	85,517	66	-3,734	-3	-34,204	-27
*Cisco, Lake	29,003	21,329	74	-578	-2	-4,220	-15
Crook, Lake	9,195	7,990	87	-305	-3	-1,195	-13
Eagle Mountain Lake	179,880	157,245	87	4,061	2	-15,818	-9
Georgetown, Lake	36,823	19,610	53	-2,249	-6	-5,969	-16
Graham, Lake	45,288	36,202	80	-1,993	-4	-7,298	-16
Granbury, Lake	132,949	118,230	89	-600	-0	-14,393	-11
Granger Lake	51,822	46,206	89	-3,074	-6	-5,616	-11
Grapevine Lake	164,703	143,037	87	-2,441	-1	-21,666	-13
*Halbert, Lake	6,033	4,755	79	-121	-2	-416	-7
Hubbard Creek Reservoir	318,067	234,385	74	-8,822	-3	-60,194	-19
Hubert H Moss Lake	24,058	22,371	93	-335	-1	-1,171	-5
Jim Chapman Lake (Cooper)	260,332	197,770	76	-16,596	-6	-62,562	-24
Joe Pool Lake	175,358	160,077	91	-2,789	-2	-14,469	-8
Kickapoo, Lake	86,345	61,872	72	-1,800	-2	-10,418	-12
Lavon Lake	406,388	325,676	80	-17,713	-4	-80,712	-20
Leon, Lake	27,762	18,880	68	-881	-3	-7,032	-25
Lewisville Lake	563,228	481,567	86	-1,753	-0	-81,661	-14
Limestone, Lake	203,780	154,775	76	-12,047	-6	-28,403	-14
*Lost Creek Reservoir	11,950	10,893	91	-274	-2	-381	-3
*Mineral Wells, Lake	5,273	4,642	88	295	6	-464	-9
Mountain Creek, Lake	22,850	21,604	95	0	0	-1,246	-5

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of lake or reservoir	Conservation storage capacity		Conservation storage end of August 2018		Change since end of July 2018		Change since end of August 2017	
	(acre-feet)	(acre-feet)	(%)	(acre-feet)**	(%)	(acre-feet)**	(%)	
<i>(North Central continued)</i>								
Navarro Mills Lake	49,827	43,028	86	-801	-2	-4,702	-9	
New Terrell City Lake	8,583	8,095	94	159	2	-454	-5	
Nocona, Lake (Farmers Crk)	21,444	18,860	88	-717	-3	-2,038	-10	
Palo Pinto, Lake	26,766	17,044	64	-1,259	-5	-8,683	-32	
Pat Cleburne, Lake	26,008	22,039	85	-358	-1	-2,573	-10	
*Pat Mayse Lake	113,683	103,725	91	-3,491	-3	-9,958	-9	
Possum Kingdom Lake	538,139	466,753	87	-18,730	-3	-63,549	-12	
Proctor Lake	54,762	28,091	51	-3,297	-6	-21,123	-39	
Ray Hubbard, Lake	439,559	364,013	83	-20,443	-5	-74,711	-17	
Ray Roberts, Lake	788,167	744,148	94	-6,864	-1	-44,019	-6	
Richland-Chambers Reservoir	1,087,839	1,005,046	92	-17,825	-2	-45,017	-4	
Squaw Creek, Lake	151,250	151,250	100	0	0	0	0	
Stillhouse Hollow Lake	227,771	180,881	79	-4,446	-2	-43,619	-19	
Tawakoni, Lake	871,685	788,517	90	-22,124	-3	-83,168	-10	
Texoma, Lake (Texas)	1,258,113	1,245,469	99	-12,644	-1	-12,644	-1	
Texoma, Lake (Texas & Oklahoma)	2,525,281	2,490,944	99	-44,764	-2	-36,511	-1	
Waco, Lake	189,418	156,170	82	-8,610	-5	-24,609	-13	
Waxahachie, Lake	10,780	9,083	84	41	0	-455	-4	
Weatherford, Lake	17,812	13,811	78	-426	-2	-3,914	-22	
Whitney, Lake	553,344	421,583	76	-32,468	-6	-63,056	-11	
Worth, Lake	33,495	25,898	77	-1,332	-4	-4,560	-14	
TOTAL	10,635,685	9,185,235	86	-272,410	-3	-1,160,396	-11	
EAST								
Athens, Lake	29,503	26,915	91	-1,036	-4	-2,202	-7	
B A Steinhagen Lake	66,961	63,519	95	-620	-1	-3,442	-5	
Bob Sandlin, Lake	190,822	179,267	94	-4,538	-2	-11,555	-6	
Caddo, Lake	29,898	23,186	78	-3,812	-13	-6,712	-22	
Cedar Creek Reservoir in Trinity	644,686	580,782	90	-14,515	-2	-45,442	-7	
Cherokee, Lake	40,094	31,965	80	-2,490	-6	-8,129	-20	
Conroe, Lake	410,988	374,877	91	-27,904	-7	-36,111	-9	
Cypress Springs, Lake	66,756	61,582	92	-1,914	-3	-5,174	-8	
Fork Reservoir, Lake	605,061	546,562	90	-12,864	-2	-58,499	-10	
Houston County Lake	17,113	14,834	87	-810	-5	-2,279	-13	
Jacksonville, Lake	25,670	23,841	93	-673	-3	-1,829	-7	
*Livingston, Lake	1,785,348	1,763,752	99	-723	-0	-21,596	-1	
Martin, Lake	75,726	61,024	81	-4,107	-5	-9,220	-12	
Monticello, Lake	34,740	27,280	79	-902	-3	-7,378	-21	
Murvaul, Lake	38,285	32,491	85	-1,859	-5	-4,701	-12	
Nacogdoches, Lake	39,522	33,139	84	-1,798	-5	-5,861	-15	
O' the Pines, Lake	268,566	214,021	80	-12,089	-5	-54,545	-20	
Palestine, Lake	367,303	320,740	87	-15,959	-4	-46,563	-13	
Sam Rayburn Reservoir	2,857,077	2,476,861	87	no data		-380,216	-13	
Striker, Lake	16,934	14,396	85	-871	-5	-2,517	-15	
*Sulphur Springs, Lake	17,747	13,701	77	-768	-4	-4,046	-23	
Toledo Bend Reservoir (Texas)	2,236,450	1,916,420	86	-63,128	-3	-320,030	-14	
Toledo Bend Reservoir (Texas & Louisiana)	4,472,900	3,836,940	86	-126,255	-3	-962,852	-22	
Tyler, Lake	72,073	62,678	87	-3,052	-4	-9,253	-13	
Wright Patman Lake	231,496	231,496	100	0	0	0	0	
TOTAL	10,168,819	9,095,329	89	-176,432	-2	-1,047,300	-10	

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of lake or reservoir	Conservation storage capacity (acre-feet)	Conservation storage end of August 2018		Change since end of July 2018		Change since end of August 2017	
		(acre-feet)	(%)	(acre-feet)**	(%)	(acre-feet)**	(%)
TRANS-PECOS							
Elephant Butte Reservoir (Texas)	852,491	37,342	4	-18,819	-2	-86,419	-10
Elephant Butte Reservoir (Texas & New Mexico)	1,973,358	86,440	4	-43,562	-2	-200,043	-10
Red Bluff Reservoir	151,110	83,537	55	-2,920	-2	-22,910	-15
TOTAL	1,003,601	120,879	12	-21,739	-2	-109,329	-11
EDWARDS PLATEAU							
*Amistad Reservoir (Texas)	1,840,849	1,047,385	57	-123,194	-7	-316,705	-17
*Amistad Reservoir (Texas & Mexico)	3,275,532	1,440,653	44	-115,557	-4	-260,311	-8
Brady Creek Reservoir	28,808	13,885	48	-238	-1	-3,613	-13
Buchanan, Lake	816,904	646,706	79	-50,352	-6	-141,478	-17
E. V. Spence Reservoir	517,272	60,246	12	6,355	1	-12,433	-2
Inks, Lake	13,962	12,915	93	0	0	-120	-1
Lyndon B Johnson, Lake	115,249	110,514	96	-1,102	-1	122	0
Marble Falls, Lake	6,901	6,896	100	71	1	119	2
Nasworthy	9,615	7,433	77	no data		-155	-2
Oak Creek Reservoir	39,210	16,088	41	127	0	-5,044	-13
O. C. Fisher Lake	119,445	9,405	8	-443	-0	-4,505	-4
*O. H. Ivie Reservoir	554,340	75,534	14	-2,734	-0	-41,551	-7
Twin Buttes Reservoir	182,454	5,567	3	-1,575	-1	-11,363	-6
TOTAL	4,245,009	2,012,574	47	-173,085	-4	-536,726	-13
SOUTH CENTRAL							
*Austin, Lake	23,972	22,911	96	-61	-0	154	1
Canyon Lake	378,781	323,034	85	-9,711	-3	-39,104	-10
*Coletto Creek Reservoir	31,040	22,100	71	-1,790	-6	-8,940	-29
Medina Lake	254,823	115,366	45	-7,774	-3	-82,402	-32
Somerville Lake	147,104	119,744	81	-9,111	-6	-27,360	-19
Travis, Lake	1,113,348	685,896	62	-37,346	-3	-276,773	-25
TOTAL	1,949,068	1,289,051	66	-65,793	-3	-434,425	-22
UPPER COAST							
Houston, Lake	120,686	120,686	100	0	0	0	0
Texana, Lake	159,566	141,428	89	-10,329	-6	-11,137	-7
TOTAL	280,252	262,114	94	-10,329	-4	-11,137	-4
SOUTHERN							
Choke Canyon Reservoir	662,820	154,953	23	-11,017	-2	-65,851	-10
Corpus Christi, Lake	256,062	169,091	66	-16,674	-7	-12,044	-5
*Falcon Reservoir (Texas)	1,551,007	445,020	29	3,945	0	40,265	3
*Falcon Reservoir (Texas & Mexico)	2,646,817	510,818	19	-25,672	-1	-32,153	-1
TOTAL	2,469,889	769,064	31	-23,746	-1	-37,630	-2
STATEWIDE TOTAL							
STATEWIDE TOTAL	32,292,524	23,436,361	73	-769,860	-2	-3,484,579	-11

* Conservation volume is used as conservation storage capacity, because the dead storage is unknown.

**Monthly and yearly changes do not include reservoirs that did not have data in last month or last year, respectively.

Note:

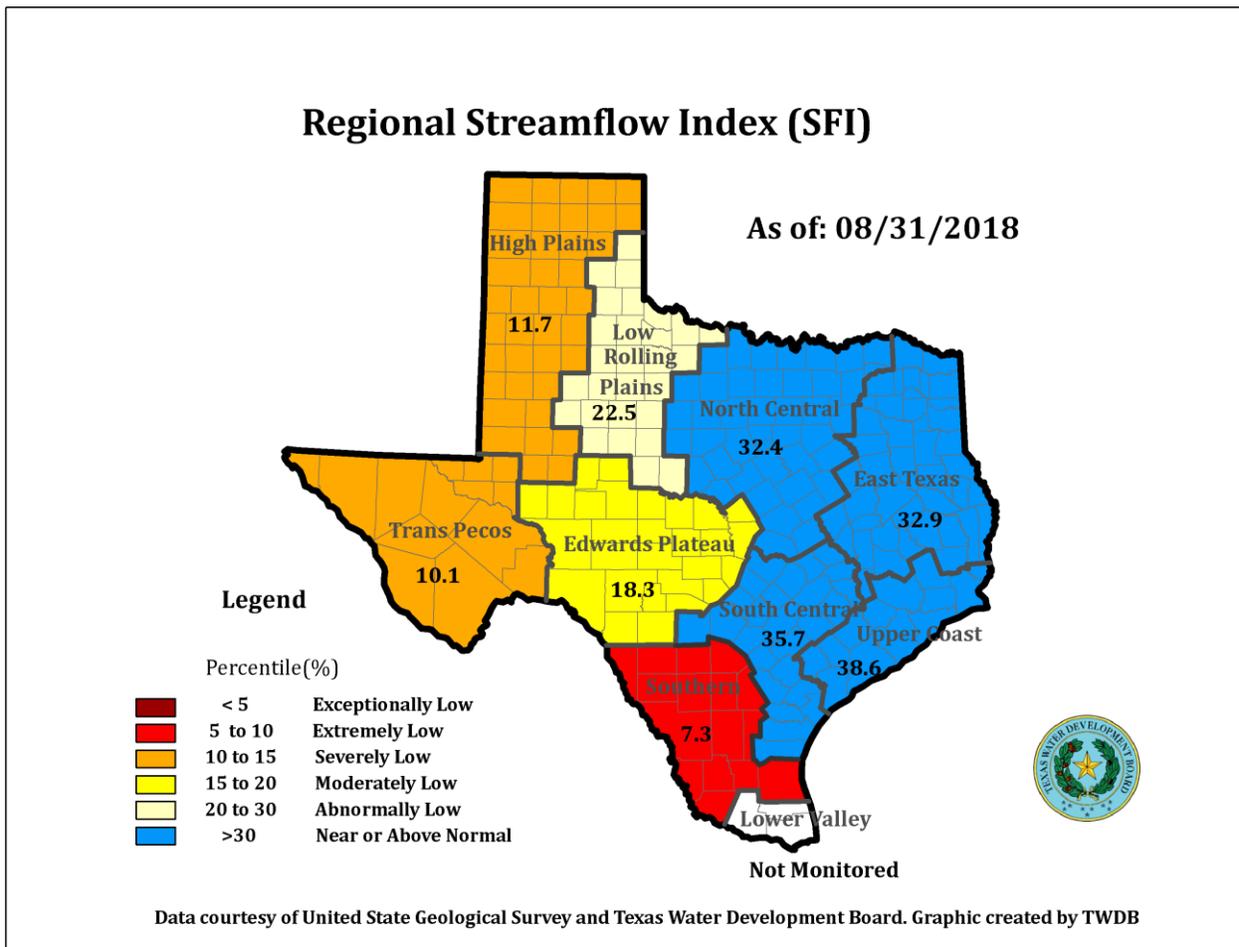
Conservation storage capacity is the space available to store water above the lowest outlet and below the top of conservation pool (some may have seasonal variations), or normal maximum operating level. Conservation storage refers to the volume of water held within the conservation storage space. Not included is any water in flood control storage (above the top of conservation pool or normal maximum operating level) or any water in the dead pool storage. Conservation storage percentage is based on the conservation storage capacity of the reservoir and the conservation storage in the reservoir on date shown. Percent change is given by $100 * (\text{current conservation storage} - \text{past conservation storage}) / \text{conservation storage capacity}$.

AUGUST 2018 STREAMFLOW CONDITIONS

The computed 31-day mean flow status for 29 reporting index stations monitored this month is presented below. Mean flow increased at 13 index stations, and decreased at 15 stations.

Streamflow Status	Number of Stations
Near or Above Normal (>30%)	9
Abnormally Low (20-30%)	1
Moderately Low (15-20%)	4
Severely Low (10-15%)	9
Extremely Low (5-10%)	4
Exceptionally Low (<5%)	2

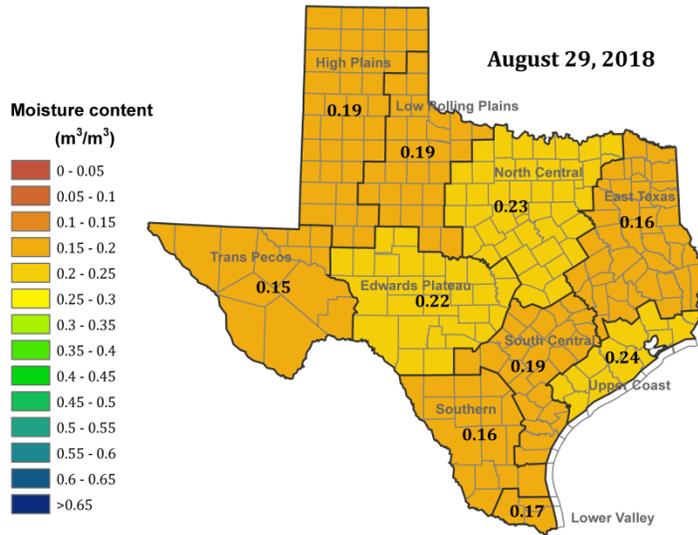
On a regional basis, as shown below, stream flows were abnormally low in Low Rolling Plains region, moderately low in Edwards Plateau region, severely low in the High Plains and Trans-Pecos regions, extremely low in the Southern region, but near or above normal in the North Central, East Texas, South Central, and Upper Coast regions. Streamflow in the Lower Valley region is not monitored.



*Streamflow Index is defined as the percentile flow that exceeds a given percent of observed flows.

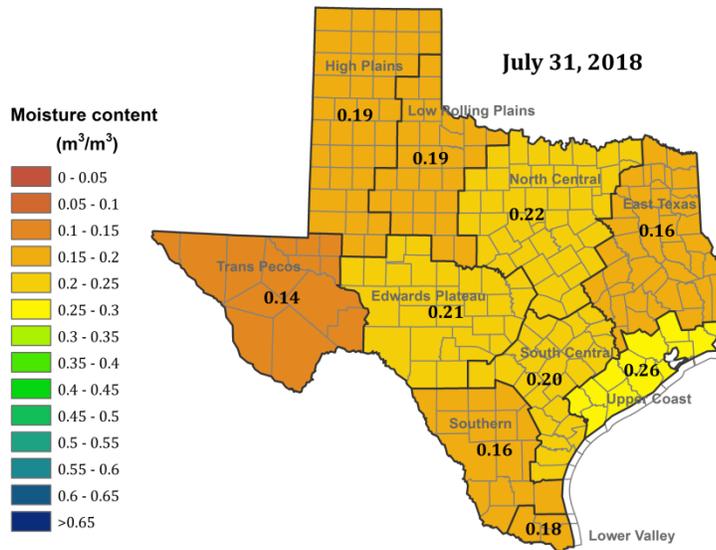
AUGUST 2018 SOIL MOISTURE CONDITIONS

Soil Moisture Condition



Data from NASA Soil Moisture Active Passive (SMAP) Level 4 - Model - Value Added Version 4
Soil moisture content is shown as volume of water per unit volume of bulk soil. Root zone: 0 to 1 meter depth.

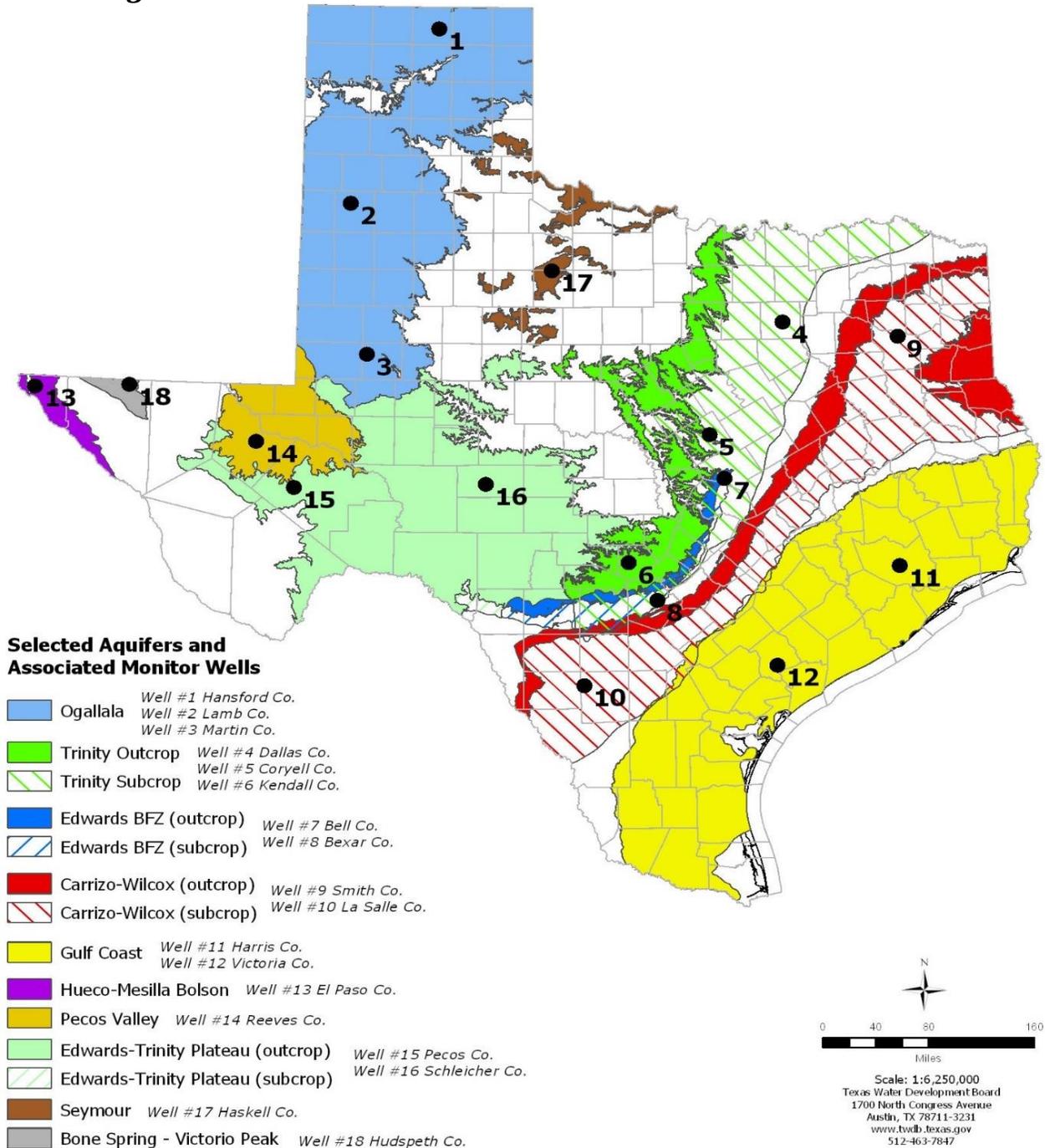
Soil Moisture Condition



Data from NASA Soil Moisture Active Passive (SMAP) Level 4 - Model - Value Added Version 4
Soil moisture content is shown as volume of water per unit volume of bulk soil. Root zone: 0 to 1 meter depth.

Soil moisture at the end of August 2018 (*top image*), as compared to that at the end of July 2018 (*bottom image*), increased in three out of the ten regions, ranging from 4.5 to 7.1 percent and decreased in three out of the ten regions, ranging from 5 to 7.7 percent. Moisture condition remained unchanged in other four regions.

August 2018 GROUNDWATER LEVELS IN OBSERVATION WELLS



August 2018

Water-level measurements were available for all 18 key monitoring wells in the state. Water levels rose in 6 monitoring wells since the beginning of August, ranging from an increase of 0.02 feet in the El Paso County Hueco-Mesilla Bolson Aquifer well (#13 on map) to 7.47 feet in the Coryell County Trinity Aquifer well (#5 on map). Water levels declined in 12 monitoring wells, ranging from a decline of -0.13 feet in the Lamb County Ogallala Aquifer well (#2 on map) to -5.90 feet in the Bexar County Edwards (Balcones Fault Zone) Aquifer well (#8 on map). The J-17 well (#8 on map) in San Antonio recorded a water level of 89.91 feet below land surface or 640.69 feet above mean sea level. Water levels declined 8.91 feet below the Stage 2 critical management level for the San Antonio portion of the Edwards (Balcones Fault Zone) Aquifer. Stage 2 drought restrictions have been in effect since July 27th.

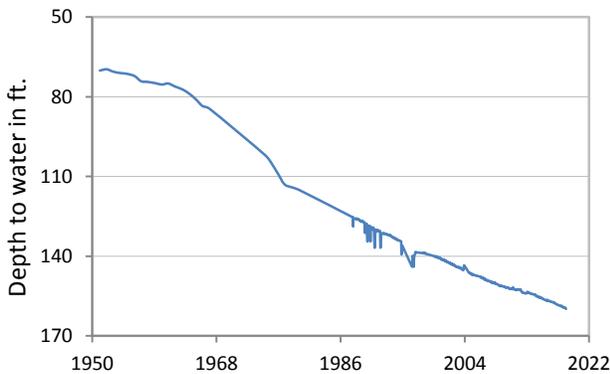
*Well numbers used in this publication on the aquifer map to indicate the monitoring well location (numbers 1 - 18) are different than the TWDB's seven-digit state well number.

Monitoring Well	August	July	Month Change	Year Change	Historical Change	First Measured
(1) Hansford 0354301	159.85	159.34	-0.51	-1.34	-89.73	1951
(2) Lamb 1053602	148.92	148.79	-0.13	-1.18	-120.75	1951
(3) Martin 2739903	143.03	143.24	0.21	-0.21	-38.14	1964
(4) Dallas 3319101	496.82	495.20	-1.62	-5.18	-274.82	1954
(5) Coryell 4035404	536.26	543.73	7.47	-10.82	-244.26	1955
(6) Kendall 6802609	159.08	159.23	0.15	-28.40	-99.08	1975
(7) Bell 5804816	128.20	127.97	-0.23	-5.47	-4.69	2008
(8) Bexar 6837203	89.91	84.01	-5.90	-24.10	-43.27	1932
(9) Smith 3430907	438.57	437.24	-1.33	-5.64	-138.57	1977
(10) La Salle 7738103	526.19	528.32	2.13	-40.09	-273.12	2003
(11) Harris 6514409	195.11	193.54	-1.57	-5.17	-59.61*	1947**
(12) Victoria 8017502	35.61	34.49	-1.12	-4.14	-1.61	1958
(13) El Paso 4913301	294.20	294.22	0.02	-0.16	-62.30	1964
(14) Reeves 4644501	176.22	172.13	-4.09	-9.15	-84.13	1952
(15) Pecos 5216802	231.02	226.50	-4.52	-14.04	15.86	1976
(16) Schleicher 5512134	319.13	319.60	0.47	-8.18	-17.23	2003
(17) Haskell 2135748	47.14	46.83	-0.31	-0.24	-4.14	2002
(18) Hudspeth 4807516	157.29	156.65	-0.64	-2.66	-53.37	1966

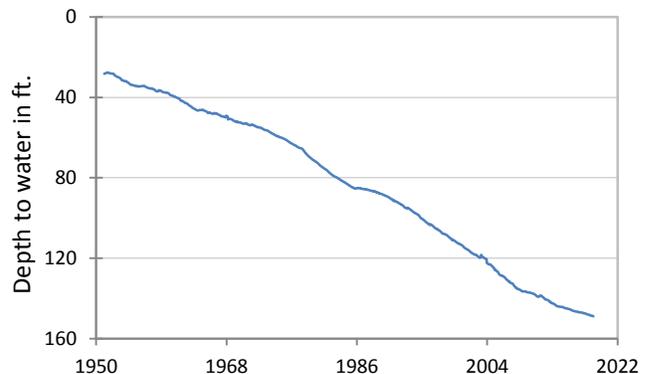
*Change since the original measurement of 135.5 feet below land surface in 1947 (**measurement not shown on the hydrograph)

August 2018 OBSERVATION WELL HYDROGRAPHS

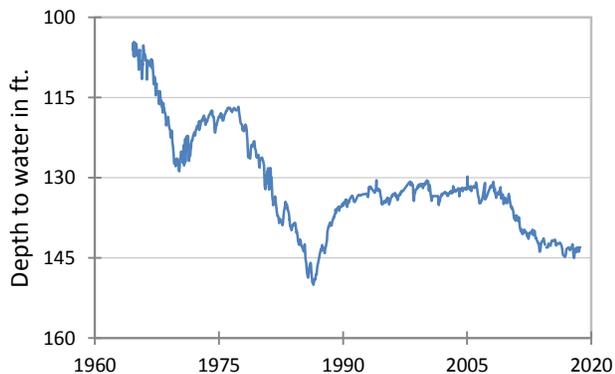
(1) State Well #03-54-301
Near Spearman, Hansford County
Ogallala Aquifer



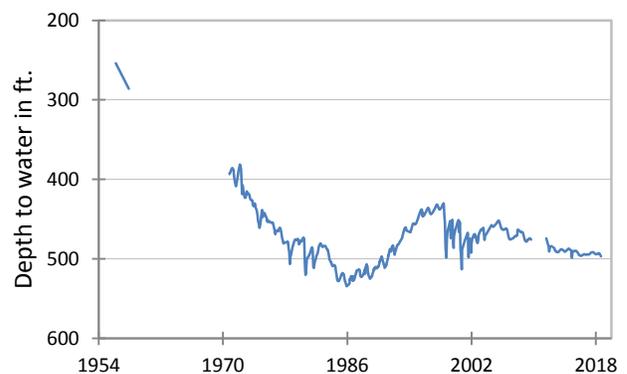
(2) State Well #10-53-602
Near Earth, Lamb County
Ogallala Aquifer



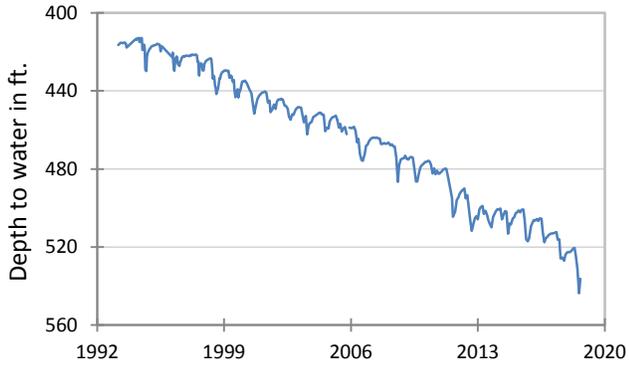
(3) State Well #27-39-903
Northwest Martin County
Ogallala Aquifer



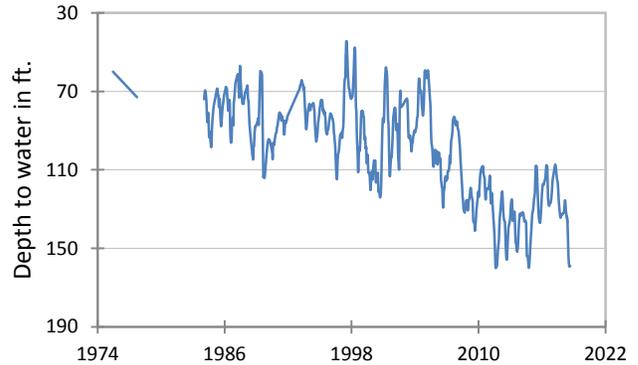
(4) State Well #33-19-101
Southeast Dallas, Dallas County
Twin Mountains Formation-Trinity Aquifer



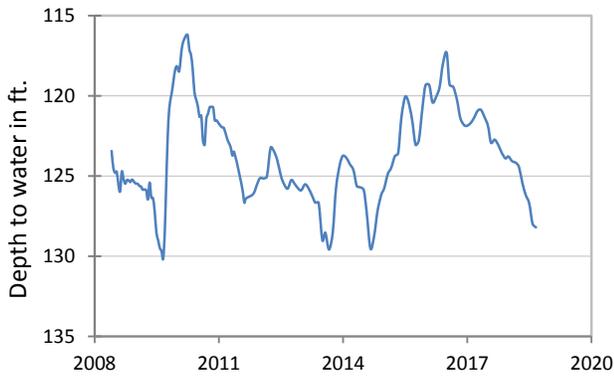
**(5) State Well #40-35-404
Gatesville, Coryell County
Hosston Formation-Trinity Aquifer**



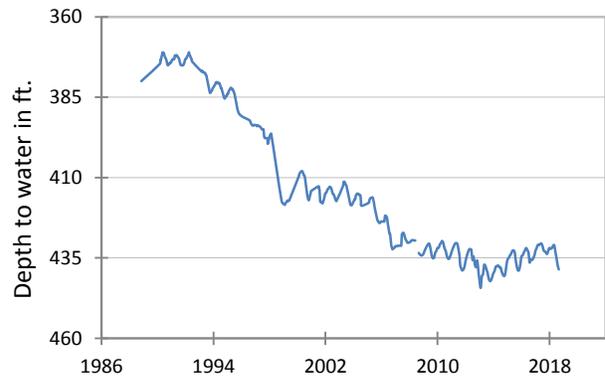
**(6) State Well #68-02-609
Waring, Kendall County
Cow Creek Formation-Trinity Aquifer**



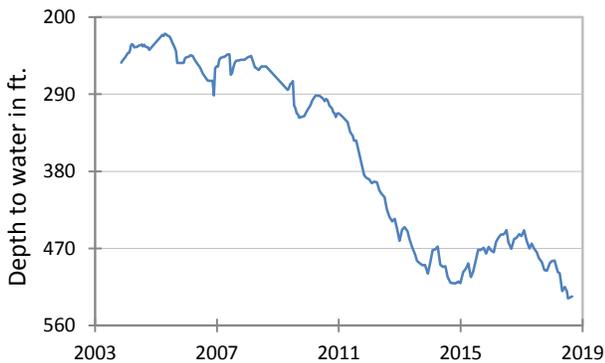
**(7) State Well #58-04-816
Near Salado, Bell County
Edwards (Balcones Fault Zone) Aquifer**



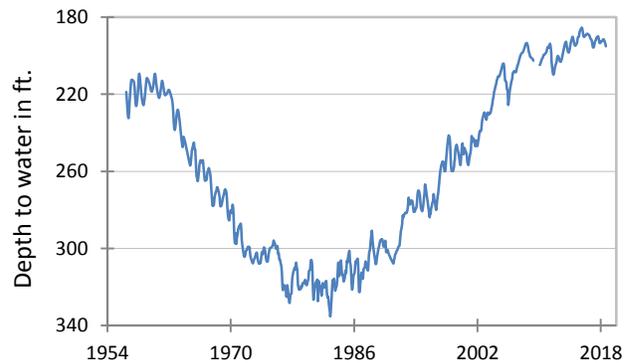
**(9) State Well #34-30-907
Red Springs, Smith County
Carrizo-Wilcox Aquifer**



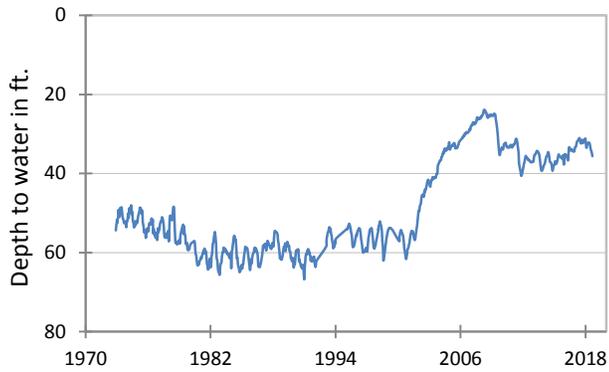
**(10) State Well #77-38-103
Near Cotulla, La Salle County
Carrizo-Wilcox Aquifer**



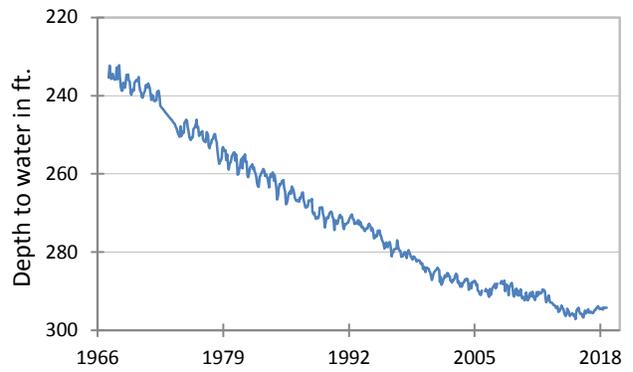
**(11) State Well #65-14-409
Alief, Harris County
Evangeline Formation-Gulf Coast Aquifer**



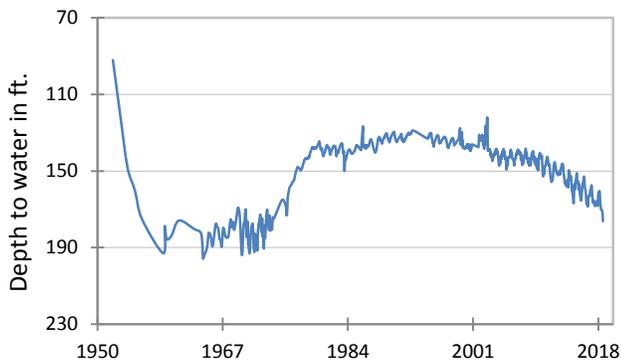
(12) State Well #80-17-502
Near Bloomington, Victoria County
Lissie Formation-Gulf Coast Aquifer



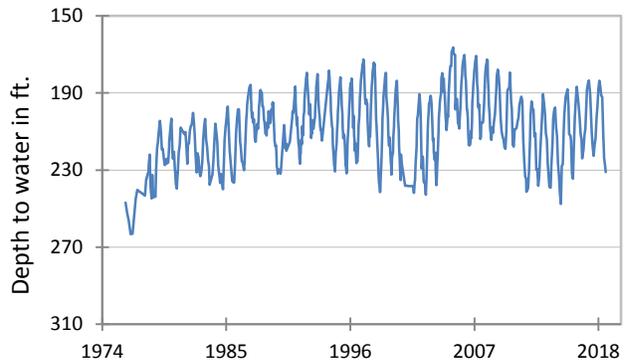
(13) State Well #49-13-301
El Paso, El Paso County
Hueco-Mesilla Bolson Aquifer



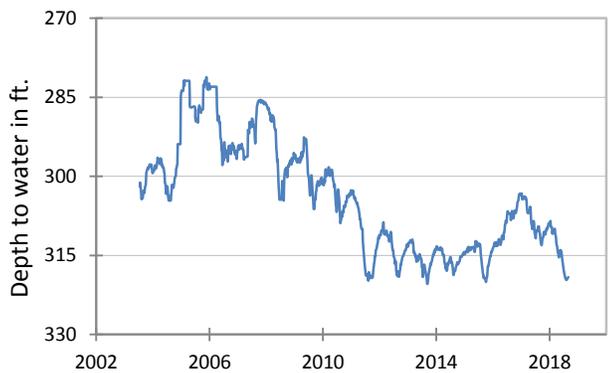
(14) State Well #46-44-501
Near Pecos, Reeves County
Pecos Valley Aquifer



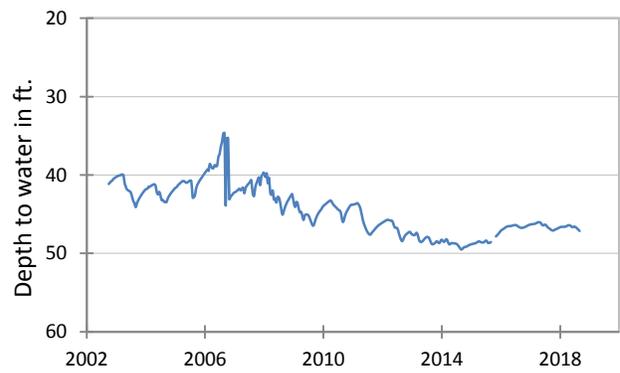
(15) State Well #52-16-802
Fort Stockton, Pecos County
Edwards-Trinity (Plateau) Aquifer



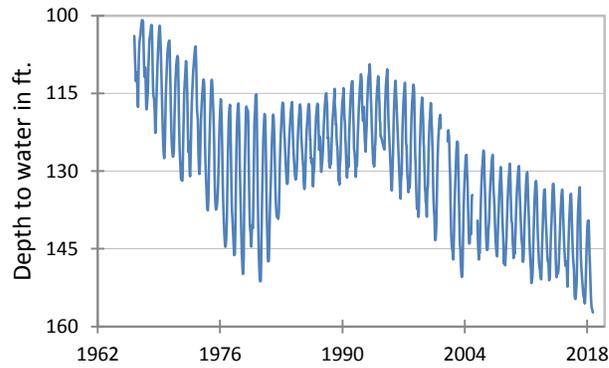
(16) State Well #55-12-134
Eldorado, Schleicher County
Trinity Aquifer



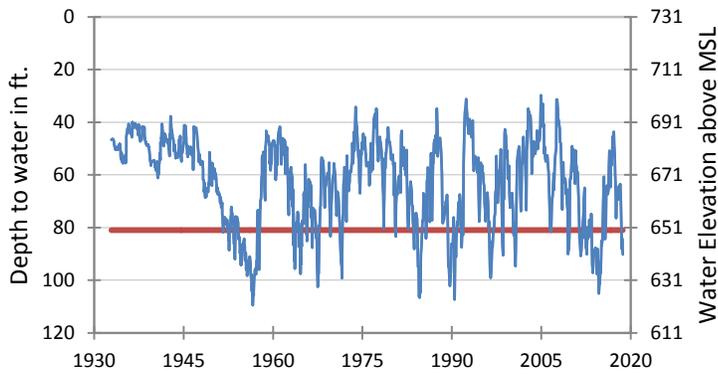
(17) State Well #21-35-748
Near O'Brien, Haskell County
Seymour Aquifer



**(18) State Well #48-07-516
Dell City, Hudspeth County
Bone Spring - Victorio Peak Aquifer**

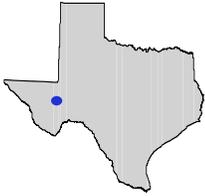


**(8) State Well #68-37-203 (J-17)
San Antonio, Bexar County
Edwards (Balcones Fault Zone) Aquifer**



The late August water-level measurement in this Edwards (Balcones Fault Zone) Aquifer well, elevation 731 feet above mean sea level, was 89.91 feet below land surface, or 640.69 feet above mean sea level. This was 5.90 feet below last month's measurement, 24.10 feet below last year's measurement and 43.27 feet below the initial measurement recorded in 1932.

Water levels below the red line indicate periods in which Edwards Aquifer Authority Stage 2 drought restrictions are in effect.



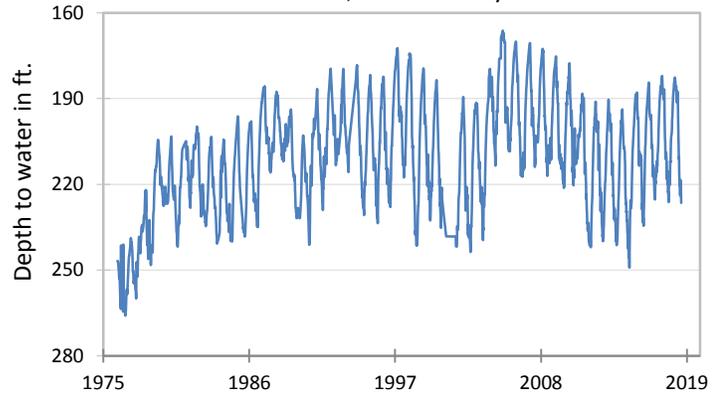
HYDROGRAPH OF THE MONTH

Each month this space features a new hydrograph (marked with the • symbol on the map) depicting different aquifers and their conditions in Texas.

The Edwards-Trinity Aquifer is a major aquifer extending across much of the southwestern part of Texas. The water-bearing units are composed predominantly of limestone and dolomite of the Edwards Group and sands of the Trinity Group. Although maximum saturated thickness of the aquifer is greater than 800 feet, freshwater saturated thickness averages 433 feet. Water quality ranges from fresh to slightly saline, with total dissolved solids ranging from 100 to 3,000 milligrams per liter, and water is characterized as hard within the Edwards Group. More than two-thirds of the groundwater is used for irrigation, while the remainder is used for municipal and livestock supplies. Water levels have remained relatively stable because recharge has generally kept pace with the low amounts of pumping over the extent of the aquifer.

Edwards-Trinity Plateau

Well #52-16-802, 448 feet deep
unused, Pecos County



The initial measurement of 246.88 feet below land surface was observed by the TWDB in January of 1976. TWDB soon after installed an automatic water-level recorder in this well and has since collected near-weekly measurements. The period of record reveals periodic fluctuations in water level that are likely driven by nearby pumping in hotter, summer months. Consequently, water levels in this well can rise or fall up to 50 feet between peak seasonality. On average, water levels have experienced a gradual increase of roughly 45 feet since initial monitoring in 1976.



Far away (left) and close-up (right) images of well #52-16-802.