

# Texas Water Conditions Report

August 2020

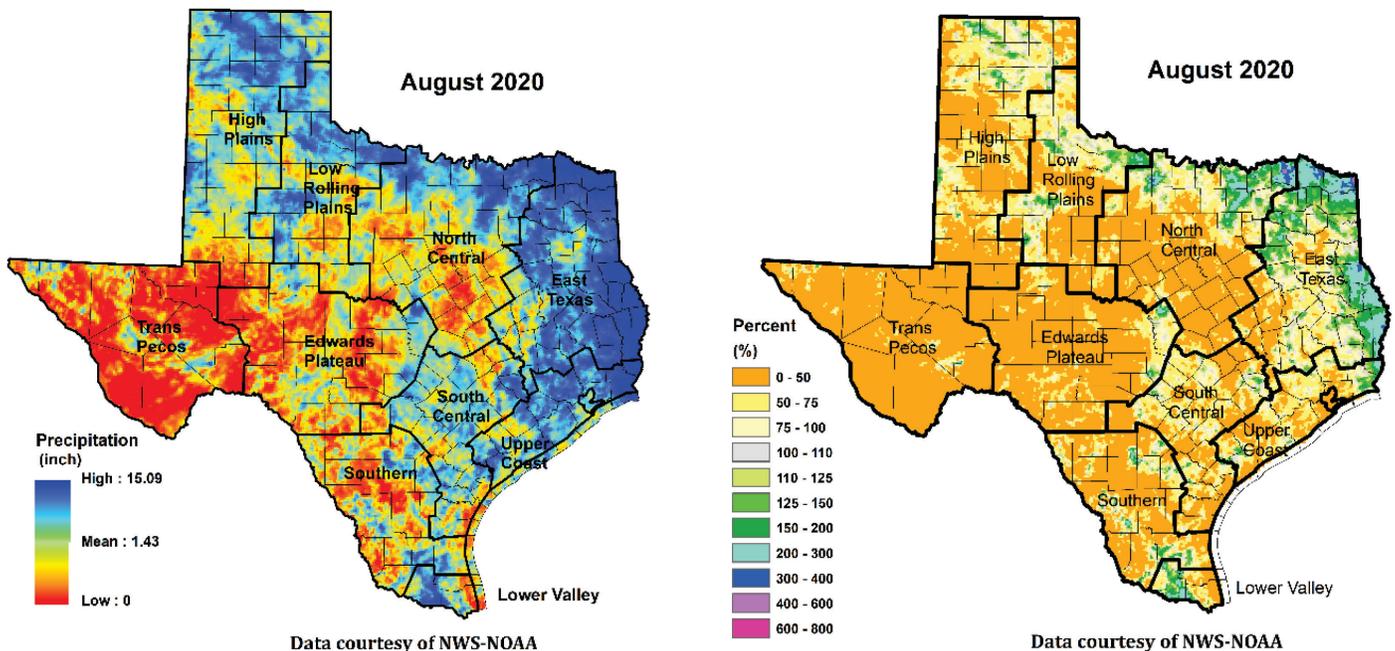
## RAINFALL

Little to no rain fell over the majority of the Trans Pecos, Edwards Aquifer, Southern, North Central, southern and central High Plains, southern and central Low Rolling Plains, parts of northern, central and southern South Central, western Upper Coast, eastern Lower Valley and southeastern and central East Texas climate divisions [yellow, orange and red shading, Figure 1(a)].

Some rainfall [light blue and dark blue shading, Figure 1(a)] was recorded over northern and southwestern High Plains, northern and southwestern Low Rolling Plains, northern North Central, parts of northern, eastern, and southern Edwards Plateau, northern and southern South Central, southern and northeastern Southern, the majority of the Lower Valley, Upper Coast and East Texas climate divisions, reaching 16.09 inches in portions of the state [dark blue shading, Figure 1(a)].

Monthly rainfall for August was below-average [yellow and orange shading, Figure 1(b)], compared to historical data from 1981–2010, in much of the state, including the High Plains, Trans Pecos, Edwards Plateau, Low Rolling Plains, North Central, South Central, Southern, Lower Valley, Upper Coast and East Texas climate divisions.

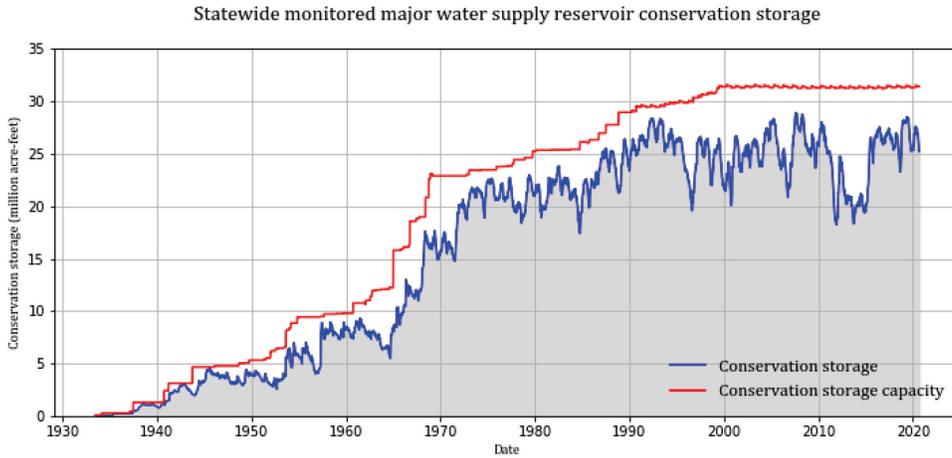
Above average rainfall fell in small areas in the northern High Plains, north and central Low Rolling Plains, northern North Central, northern and eastern East Texas, eastern and western Upper Coast, western Lower Valley, southern and northeastern Southern, and eastern Edwards Plateau climate divisions [green and blue shading, Figure 1(b)]. Additionally, small portions of northern North Central and East Texas received 3–6 times the average amount of rainfall.



**Figure 1:** (a) Monthly accumulated rainfall, (b) Percent of normal rainfall

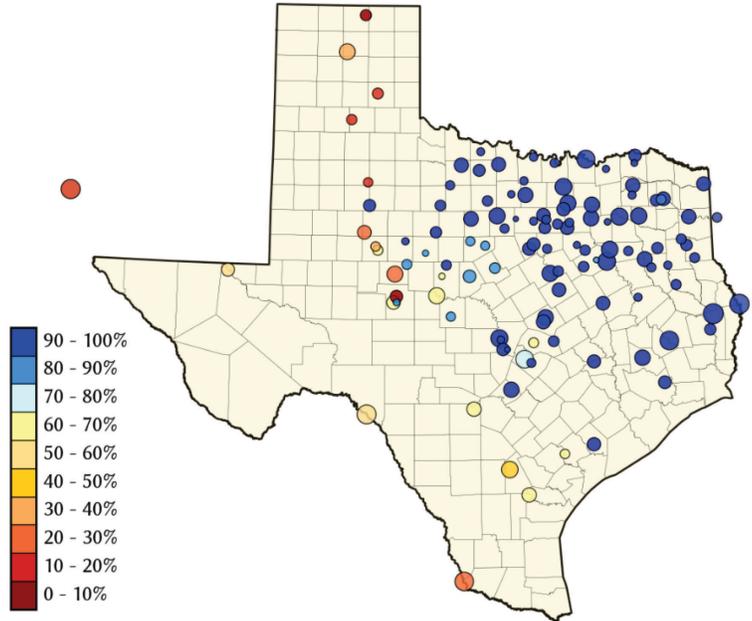
## RESERVOIR STORAGE

At the end of August 2020, total conservation storage\* in 118 of the state’s major water supply reservoirs plus Elephant Butte Reservoir in New Mexico was 25.31 million acre-feet or 78 percent of total conservation storage capacity (Figure 2). This is approximately 1.04 million acre-feet less than a month ago and approximately 1.37 million acre-feet less than the end of August 2019.



**Figure 2:** Statewide reservoir conservation storage

Out of 118 reservoirs in the state, 8 reservoirs held 100 percent of conservation storage capacity (Figure 3). Additionally, 57 were at or above 90 percent full. Eight reservoirs [E.V. Spence (23 percent full), Greenbelt (18 percent full), J.B. Thomas (19 percent full), Mackenzie (10 percent full), O. C. Fisher (7 percent full), Palo Duro Reservoir (3 percent full), and White River (15 percent full), Falcon Reservoir (28 percent full)] remained below 30 percent full. Elephant Butte Reservoir (located in New Mexico) was at 6 percent full.

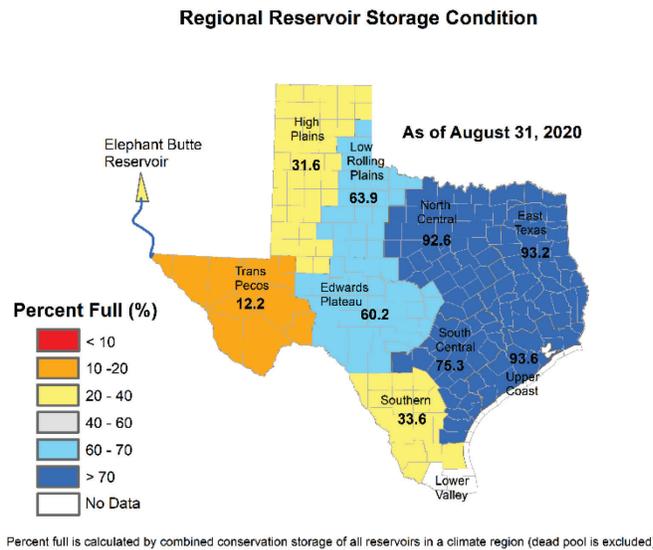


**Figure 3:** Reservoir conservation storage at end-August expressed as percent full (%)

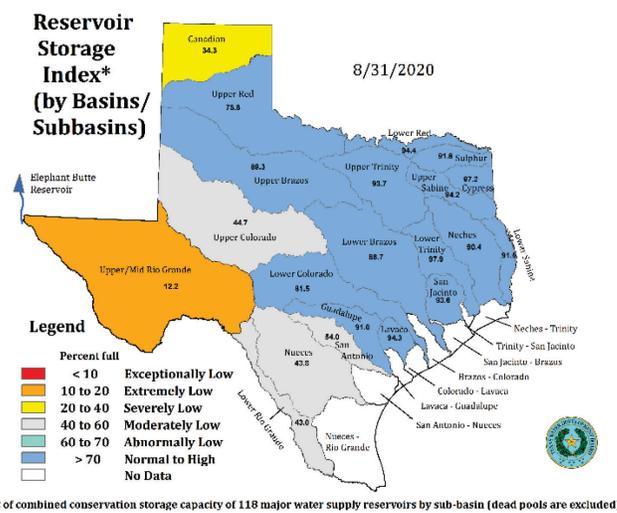
\*Storage is based on end of the month data in 118 major reservoirs that represent 96 percent of the total conservation storage capacity of 188 major water supply reservoirs in Texas plus Elephant Butte Reservoir in New Mexico. Major reservoirs are defined as having a conservation storage capacity of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

Total regionally combined conservation storage was at or above-normal (storage  $\geq 70$  percent full) in the North Central (92.6 percent full), East Texas (93.2 percent full), South Central (75.3), and Upper Coast (93.6 percent full) climate divisions (Figure 4). Conservation storage in the Edwards Plateau (60.2 percent full), and Low Rolling Plains (63.9 percent full) climate divisions was abnormally low (Figure 4). The High Plains (31.6 percent full), Southern (33.6 percent full) climate divisions had severely low and the Trans Pecos (12.2 percent full) climate division had extremely low conservation storage (Figure 4).

Combined conservation storage by river basin or sub-basin showed that the Upper and Lower Red, Upper and Lower Brazos, Lower Colorado, Guadalupe, Lavaca, Upper and Lower Trinity, Upper and Lower Sabine, San Jacinto, Neches, Sulphur, and Cypress was normal to high ( $>70$  percent full, Figure 5). The conservation storage in the Upper Colorado, San Antonio, Nueces, and Lower Rio Grande was moderately low (40–60 percent full, Figure 5). In the Canadian river basin storage was severely low (20–40 percent full). In the Upper/Mid Rio Grande basin conservation storage was extremely low (10–20 percent full).



**Figure 4: Reservoir Storage Index\* by climate division at 8/31/2020**



**Figure 5: Reservoir Storage Index\* by river basin/sub-basin at 8/31/2020**

\*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	Storage capacity	Storage at end-August		Storage change from end-Jul 2020		Storage change from end-Aug 2019	
	(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)**	(%)
Abilene, Lake	7,900	6,080	77	-643	-8	-6	0
Alan Henry Reservoir	96,207	91,120	95	-2,705	-3	3,280	3
*Amistad Reservoir (Texas & Mexico)	3,275,532	1,122,446	34	-10,991	0	-514,474	-16
*Amistad Reservoir (Texas)	1,840,849	1,034,300	56	-15,509	0	-396,501	-22
Amon G Carter, Lake	19,266	18,860	98	-406	-2	-406	-2
Aquilla Lake	43,243	40,157	93	-2,963	-7	561	1
Arlington, Lake	40,157	30,834	77	-5,639	-14	-1,390	-3
Arrowhead, Lake	230,359	215,972	94	-7,770	-3	2,648	1
Athens, Lake	29,503	29,411	100	-92	0	838	3
*Austin, Lake	23,972	22,926	96	261	1	-16	0
B A Steinhagen Lake	69,186	61,484	89	-4,277	-6	35,076	51
Bardwell Lake	46,122	43,242	94	-2,818	-6	275	1
Belton Lake	435,225	401,404	92	-16,417	-4	-28,258	-6
Benbrook Lake	85,648	67,825	79	-10,493	-12	-2,004	-2
Bob Sandlin, Lake	192,417	188,437	98	-2,560	-1	1,581	1
Bonham, Lake	11,027	10,671	97	573	5	914	8
Brady Creek Reservoir	28,808	21,838	76	-1,345	-5	-4,818	-17
Bridgeport, Lake	366,236	341,619	93	-21,477	-6	341	0
*Brownwood, Lake	130,868	103,734	79	-6,202	-5	-16,140	-12
Buchanan, Lake	816,904	747,404	91	-40,564	-5	-49,598	-6
Caddo, Lake	29,898	29,898	100	0	0	no data	
Canyon Lake	378,781	353,093	93	-7,687	-2	-21,094	-6
Cedar Creek Reservoir in Trinity	644,686	607,178	94	-17,445	-3	944	0
Champion Creek Reservoir	41,580	24,951	60	-771	-2	-4,073	-10
Cherokee, Lake	40,094	38,436	96	-1,658	-4	701	2
Choke Canyon Reservoir	662,820	253,190	38	-11,380	-2	-75,803	-11
*Cisco, Lake	29,003	23,376	81	-754	-3	-3,461	-12
Coleman, Lake	38,075	34,411	90	-1,160	-3	-984	-3
Colorado City, Lake	31,040	20,088	65	-1,267	-4	-6,215	-20
*Coletto Creek Reservoir	30,758	10,981	36	-708	-2	-4,135	-13
Conroe, Lake	410,988	386,275	94	-7,641	-2	11,216	3
Corpus Christi, Lake	256,062	149,980	59	-14,869	-6	-77,880	-30
Crook, Lake	9,195	9,195	100	250	3	1,033	11
Cypress Springs, Lake	66,756	64,543	97	-1,054	-2	-1,214	-2
E. V. Spence Reservoir	517,272	119,485	23	-5,806	-1	-32,363	-6
Eagle Mountain Lake	179,880	165,878	92	-9,638	-5	-580	0
Elephant Butte Reservoir (Texas)	852,491	47,345	6	-29,216	-3	-151,326	-18
Elephant Butte Reservoir (Total Storage)	1,960,900	109,596	6	-67,629	-3	-350,292	-18
*Falcon Reservoir (Texas & Mexico)	2,646,817	530,023	20	10,946	0	-76,943	-3
*Falcon Reservoir (Texas)	1,551,007	426,682	28	17,114	1	873	0
Fork Reservoir, Lake	605,061	563,669	93	-19,243	-3	-16,173	-3
Fort Phantom Hill, Lake	70,030	61,351	88	-3,121	-4	-5,212	-7
Georgetown, Lake	36,823	21,971	60	-2,005	-5	-7,687	-21
Gibbons Creek Reservoir	25,721	21,476	83	-1,337	-5	-516	-2
Graham, Lake	45,288	41,228	91	-2,539	-6	-711	-2
Granbury, Lake	132,949	124,336	94	-5,776	-4	-8,287	-6

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	(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)**	(%)	
<i>Continued</i>								
Granger Lake	51,822	46,627	90	-3,370	-7	-5,195	-10	
Grapevine Lake	163,064	158,957	97	-4,107	-3	-4,107	-3	
Greenbelt Lake	59,968	11,078	18	-496	0	-1,129	-2	
*Halbert, Lake	6,033	5,030	83	-255	-4	106	2	
Hords Creek Lake	8,109	5,057	62	-359	-4	-2,020	-25	
Houston County Lake	17,113	16,282	95	-612	-4	-522	-3	
Houston, Lake	130,147	120,639	93	1,834	1	757	1	
Hubbard Creek Reservoir	313,298	271,584	87	-12,794	-4	-25,210	-8	
Hubert H Moss Lake	24,058	23,308	97	-502	-2	-448	-2	
Inks, Lake	13,962	12,855	92	-135	0	15	0	
J. B. Thomas, Lake	199,931	37,008	19	-3,266	-2	-20,907	-10	
Jacksonville, Lake	25,670	25,542	100	0	0	460	2	
Jim Chapman Lake (Cooper)	260,332	222,167	85	-20,461	-8	-23,013	-9	
Joe Pool Lake	175,800	167,484	95	-6,323	-4	3,096	2	
Kemp, Lake	245,307	197,114	80	-29,740	-12	-37,902	-15	
Kickapoo, Lake	86,345	75,777	88	-3,863	-4	-2,470	-3	
Lavon Lake	406,388	355,863	88	-25,663	-6	-3,469	0	
Leon, Lake	27,762	23,016	83	-1,360	-5	-2,497	-9	
Lewisville Lake	563,228	525,811	93	-25,866	-5	-20,540	-4	
Limestone, Lake	203,780	187,581	92	-11,141	-5	1,433	1	
*Livingston, Lake	1,741,867	1,706,663	98	-35,204	-2	-13,099	0	
*Lost Creek Reservoir	11,950	11,434	96	-302	-3	8	0	
Lyndon B Johnson, Lake	115,249	111,494	97	307	0	552	0	
Mackenzie Reservoir	46,450	4,500	10	-164	0	-919	-2	
Marble Falls, Lake	6,901	6,825	99	-38	0	-16	0	
Martin, Lake	75,726	69,770	92	-3,891	-5	3,220	4	
Medina Lake	254,823	137,824	54	-12,383	-5	-98,788	-39	
Meredith, Lake	500,000	191,011	38	-5,285	-1	-12,111	-2	
Millers Creek Reservoir	26,768	24,932	93	-1,726	-6	-444	-2	
*Mineral Wells, Lake	5,273	4,712	89	-390	-7	-326	-6	
Monticello, Lake	34,740	28,845	83	-550	-2	281	1	
Mountain Creek, Lake	22,850	22,850	100	0	0	0	0	
Murvaul, Lake	38,285	37,669	98	-513	-1	511	1	
Nacogdoches, Lake	39,522	36,186	92	-1,156	-3	122	0	
Nasworthy	9,615	8,233	86	-36	0	-98	-1	
Navarro Mills Lake	49,827	46,902	94	-2,925	-6	2,760	6	
New Terrell City Lake	8,583	7,986	93	-365	-4	-433	-5	
Nocona, Lake (Farmers Crk)	21,444	20,541	96	-837	-4	184	1	
North Fork Buffalo Creek Reservoir	15,400	14,200	92	-595	-4	1,277	8	
O' the Pines, Lake	268,566	264,298	98	-4,268	-2	-4,268	-2	
O. C. Fisher Lake	115,742	8,072	7	-687	0	-4,325	-4	
*O. H. Ivie Reservoir	554,340	354,107	64	-14,525	-3	-50,934	-9	
Oak Creek Reservoir	39,210	30,937	79	-1,688	-4	-5,927	-15	

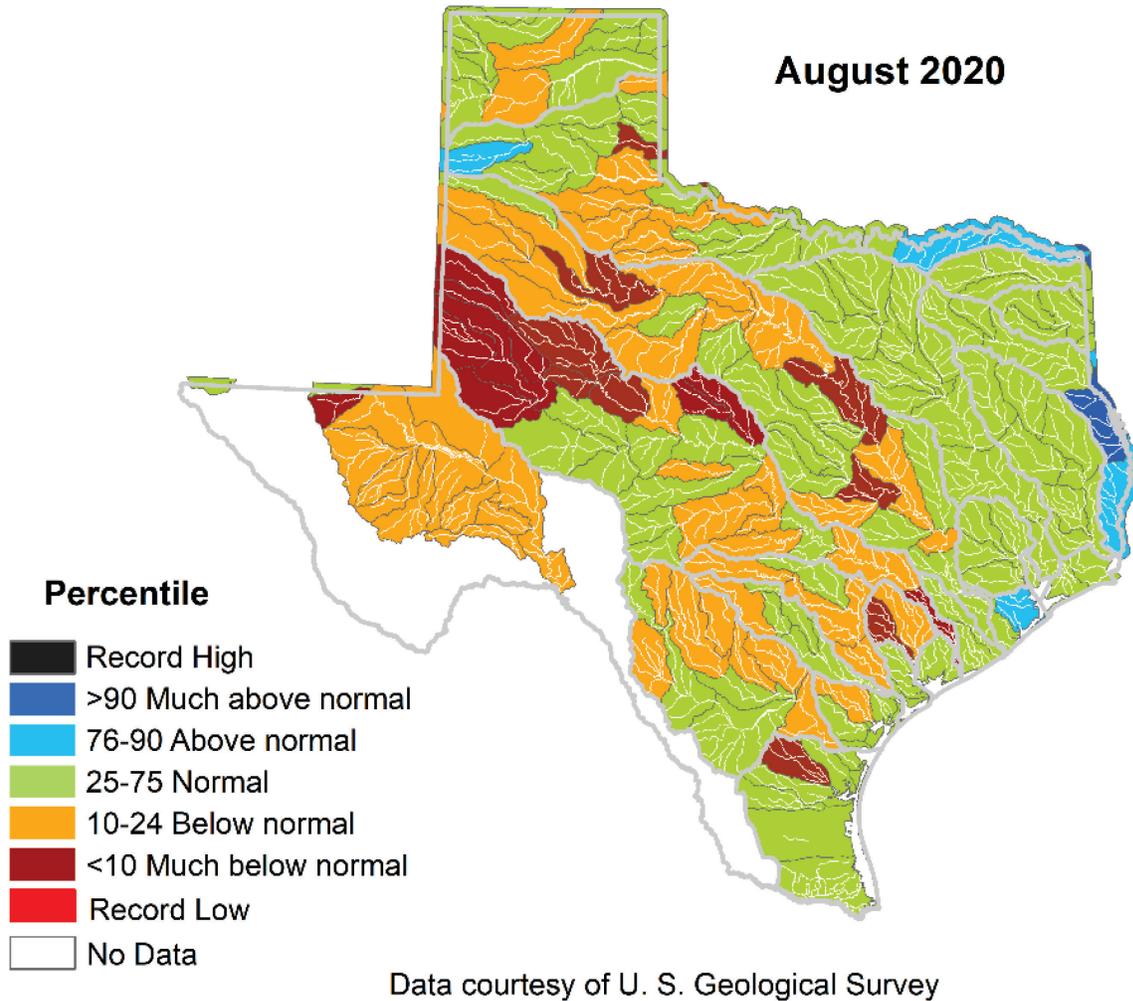
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	(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)**	(%)
<i>Continued</i>							
Palestine, Lake	367,303	349,324	95	-16,364	-4	895	0
Palo Duro Reservoir	61,066	1,558	3	-243	0	-3,708	-6
Palo Pinto, Lake	26,766	21,350	80	-2,241	-8	-2,284	-9
Pat Cleburne, Lake	26,008	23,755	91	-1,444	-6	-122	0
*Pat Mayse Lake	113,683	113,571	100	2,637	2	2,916	3
Possum Kingdom Lake	538,139	502,888	93	-21,244	-4	-23,001	-4
Proctor Lake	54,762	37,299	68	-5,606	-10	-11,298	-21
Ray Hubbard, Lake	439,559	408,025	93	-17,329	-4	5,186	1
Ray Roberts, Lake	788,167	769,031	98	-15,171	-2	-13,757	-2
Red Bluff Reservoir	151,110	75,560	50	-3,493	-2	-15,902	-11
Richland-Chambers Reservoir	1,087,839	1,055,118	97	-32,721	-3	23,077	2
Sam Rayburn Reservoir	2,857,077	2,558,484	90	-136,049	-5	-160,292	-6
Somerville Lake	150,293	130,869	87	-10,572	-7	-19,424	-13
Squaw Creek, Lake	151,250	151,250	100	0	0	3,015	2
Stamford, Lake	51,570	49,167	95	-2,403	-5	541	1
Stillhouse Hollow Lake	227,771	209,608	92	-9,073	-4	-14,828	-7
Striker, Lake	16,934	16,645	98	-289	-2	-191	-1
Sweetwater, Lake	12,267	10,548	86	-497	-4	-1,540	-13
*Sulphur Springs, Lake	17,747	14,633	82	-1,400	-8	-2,494	-14
Tawakoni, Lake	871,685	827,709	95	-24,529	-3	-23,801	-3
Texana, Lake	159,566	150,504	94	-9,062	-6	17,992	11
Texoma, Lake (Texas & Oklahoma)	2,487,601	2,335,252	94	-223,841	-9	-169,263	-7
Texoma, Lake (Texas)	1,243,801	1,167,626	94	-76,175	-6	-76,175	-6
Toledo Bend Reservoir (Texas & Louisiana)	4,472,900	4,097,659	92	-80,042	-2	679,523	15
Toledo Bend Reservoir (Texas)	2,236,450	2,046,780	92	-40,020	-2	339,762	15
Travis, Lake	1,113,348	805,690	72	-49,419	-4	-219,066	-20
Twin Buttes Reservoir	182,454	98,409	54	-9,649	-5	-24,798	-14
Tyler, Lake	72,073	67,245	93	-3,750	-5	493	1
Waco, Lake	189,418	173,429	92	-10,444	-6	-3,266	-2
Waxahachie, Lake	10,780	8,434	78	-1,256	-12	-1,026	-10
Weatherford, Lake	17,812	15,740	88	-981	-6	-410	-2
White River Lake	29,880	4,529	15	-546	-2	-1,655	-6
Whitney, Lake	553,344	480,046	87	-36,740	-7	39,485	7
Worth, Lake	24,419	21,184	87	562	2	-1,133	-5
Wright Patman Lake	231,496	231,496	100	0	0	0	0
<b>STATEWIDE TOTAL</b>							
<b>STATEWIDE TOTAL</b>	<b>32,261,240</b>	<b>25,312,609</b>	<b>78</b>	<b>-1,039,968</b>	<b>-3</b>	<b>-1,369,714</b>	<b>-4</b>

## STREAMFLOW CONDITIONS

Much of the state had near normal (25–75th percentile, green shading in Figure 6) streamflow in August 2020 (green shading in Figure 6). Above normal streamflow (76–90th percentile, light blue shading in Figure 6) was seen in the Upper and Lower Red, Lower Sabine, and San Jacinto-Brazos river basins. The Lower Sabine river basin had much above normal (>90 percentile, dark blue shading in Figure 6) streamflow.

Below normal (10–24th percentile, orange shading in Figure 6) streamflow was recorded in the Canadian, Upper Red, Upper and Mid Brazos, Upper and Lower Colorado, Nueces, San Antonio-Nueces, San Antonio, Guadalupe, and Lavaca river basins. Some sub-watersheds had much below normal (less than the 10th percentile, dark brown shading in Figure 6) streamflow. These include the Upper Red, Upper and Mid Brazos, Upper and Lower Colorado, Lavaca, and Nueces-Rio Grande river basins.



**Figure 6:** Runoff percentiles by the U.S. Geological Survey’s Hydrologic Unit Code

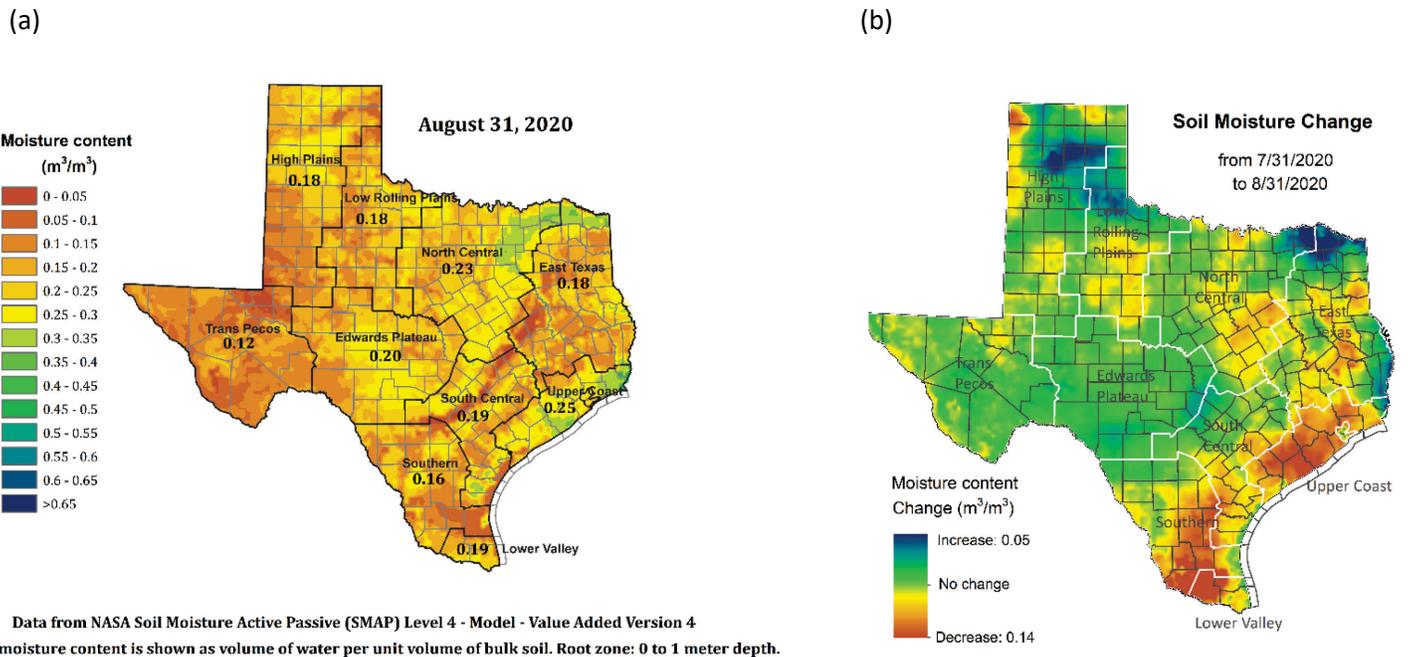
## SOIL MOISTURE CONDITIONS

Root zone soil moisture at the end of August 2020 [Figure 7(a)] was low [ $< 0.20$  cubic meters of water per bulk cubic meter soil ( $m^3/m^3$ )] in much of the Trans Pecos, southern and northern High Plains, northern and central Low Rolling Plains, western and eastern Edwards Plateau, central North Central, northern and southern Southern, southern and central South Central, and northern and southern South Central climate divisions.

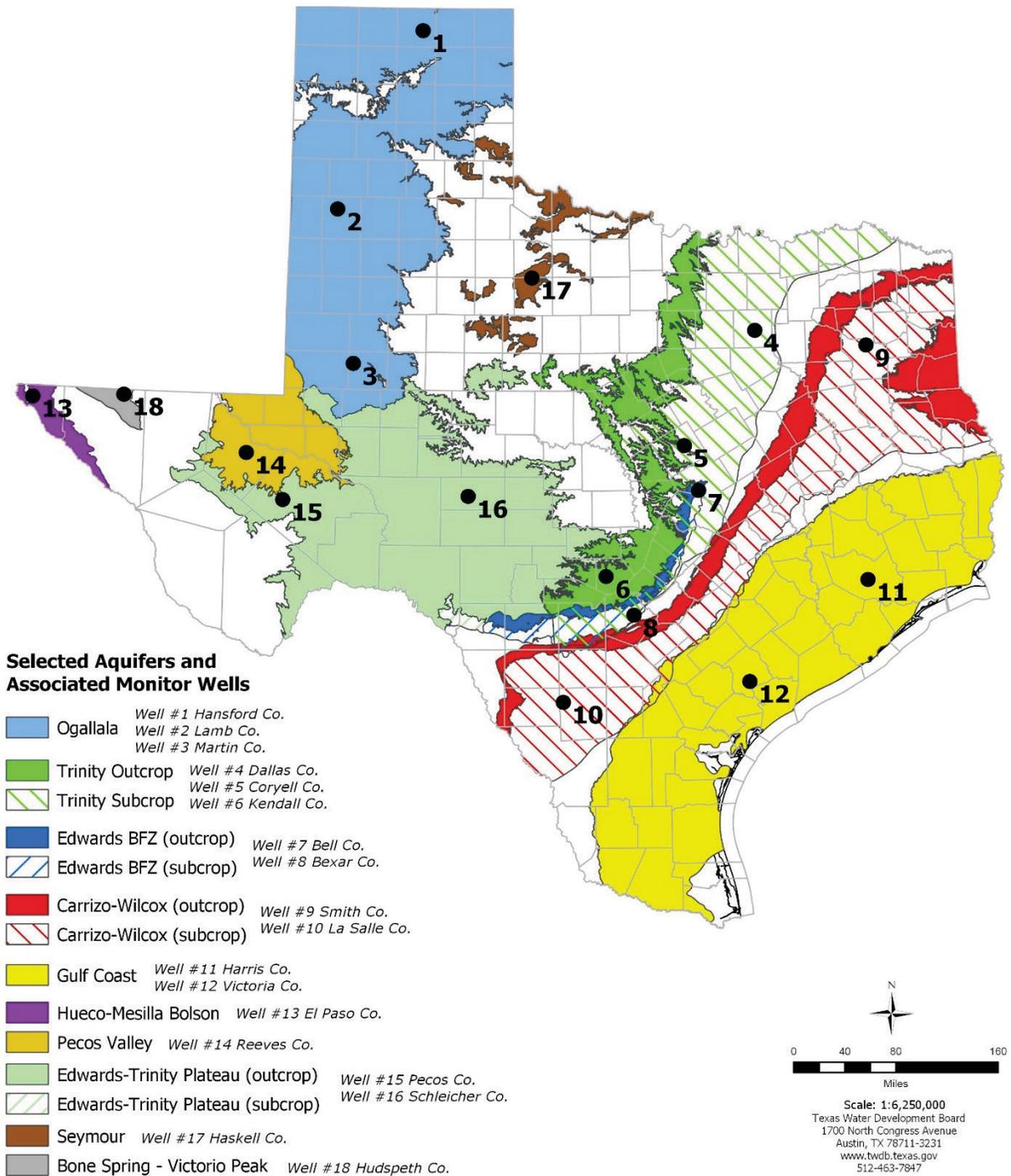
In other climate divisions, root zone soil moisture was moderate [ $> 0.20$  cubic meters of water per bulk cubic meter soil ( $m^3/m^3$ )]. These divisions include northeastern North Central, northern East Texas, southern South Central, and central and eastern Upper Coast climate divisions [Figure 7(a)].

Compared to conditions at the end of July 2020, soil moisture content increased [green to blue shading in Figure 7(b)] in the majority of the Trans Pecos, Edwards Plateau, High Plains, northern Low Rolling Plains, western and northeastern North Central, northern and southeastern Southern, northern and southeastern South Central, southeastern Lower Valley, and northern, eastern, and western East Texas climate divisions.

Soil moisture content decreased [yellow, orange, and brown shading in Figure 7(b)] in parts of southern, northern, and western High Plains, northern and southwestern Trans Pecos, central and southern Low Rolling Plains, northcentral and southeastern North Central, central and southern South Central, southern and central Southern, southern and central East Texas, the majority of the Lower Valley and Upper Coast climate divisions.



**Figure 7:** Root zone soil moisture conditions in August 2020 (a) and the difference in root zone soil moisture between end-August 2020 and end-July 2020 (b)



## August 2020 GROUNDWATER LEVELS IN OBSERVATION WELLS

Water-level measurements were available for all 18 key monitoring wells in the state. Water levels rose in 2 monitoring wells since the beginning of August, ranging from an increase of 0.04 feet in the Hansford County Ogallala Aquifer well (#1 on map) to 1.94 feet in the Reeves County Pecos Valley Aquifer (#14 on map). Water levels declined in 15 monitoring wells, ranging from a decline of -0.01 feet in the El Paso County Hueco-Mesilla Bolson Aquifer well (#13 on map) to -11.02 feet in the Kendall County Trinity Aquifer well (#6 on map). The J-17 well (#8 on map) in San Antonio recorded a water level of 74.90 feet below land surface or 656.10 feet above mean sea level. Water levels are 3.90 feet below the Stage I critical management level for the San Antonio portion of the Edwards (Balcones Fault Zone) Aquifer. Drought restrictions have been in effect since July 10<sup>th</sup>.

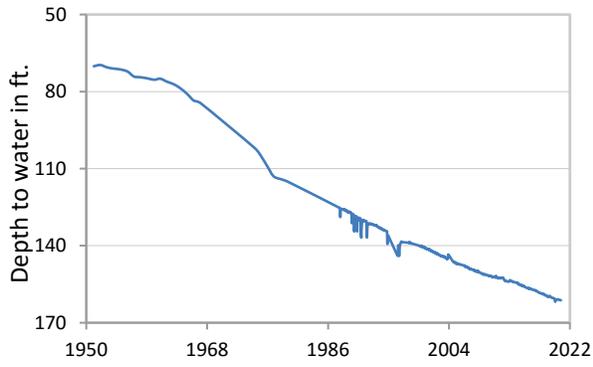
\*Well numbers used in this publication on the aquifer map to indicate the monitoring well location (numbers 1 - 17) are different than the TWDB's seven-digit state well number.

Monitoring Well	August	July	Month Change	Year Change	Historical Change	First Measured
(1) Hansford 0354301	161.20	161.24	0.04	-0.64	-91.08	1951
(2) Lamb 1053602	151.11	NA	NA	-0.80	-122.94	1951
(3) Martin 2739903	144.29	143.95	-0.34	-0.23	-39.40	1964
(4) Dallas 3319101	489.10	488.32	-0.78	5.07	-267.10	1954
(5) Coryell 4035404	536.27	531.37	-4.90	-6.62	-244.27	1955
(6) Kendall 6802609	167.70	156.68	-11.02	-34.76	-107.70	1975
(7) Bell 5804816	125.47	124.61	-0.86	-4.88	-1.96	2008
(8) Bexar 6837203	74.90	74.70	-0.20	-9.30	-28.26	1932
(9) Smith 3430907	437.35	435.29	-2.06	-1.13	-137.35	1977
(10) La Salle 7738103	513.51	510.23	-3.28	1.70	-260.44	2003
(11) Harris 6514409	189.35	189.28	-0.07	3.03	-53.85*	1947**
(12) Victoria 8017502	32.66	32.08	-0.58	2.41	1.34	1958
(13) El Paso 4913301	295.81	295.80	-0.01	NA	-63.91	1964
(14) Reeves 4644501	163.75	165.69	1.94	2.93	-71.66	1952
(15) Pecos 5216802	225.37	218.58	-6.79	-13.99	21.51	1976
(16) Schleicher 5512134	297.45	293.66	-3.79	-13.74	4.45	2003
(17) Haskell 2135748	44.64	44.17	-0.47	0.07	-1.64	2002
(18) Hudspeth 4807516	157.59	155.39	-2.20	-0.19	-53.67	1966

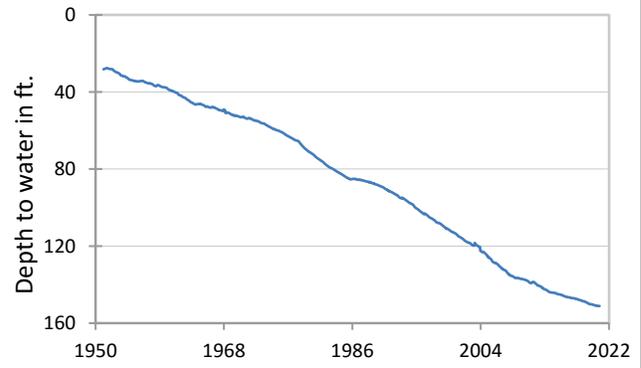
\*Change since the original measurement of 135.5 feet below land surface in 1947 (\*\*measurement not shown on the hydrograph)

**August 2020 OBSERVATION WELL HYDROGRAPHS**

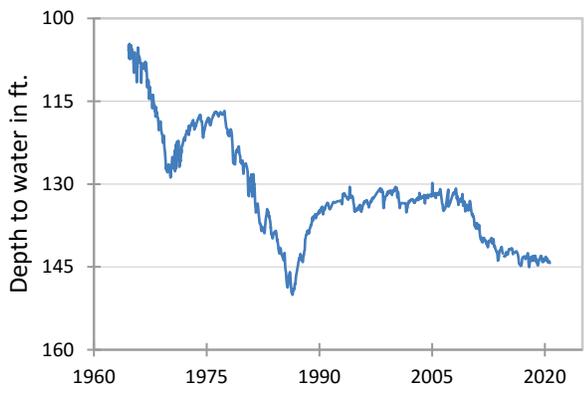
**(1) State Well #03-54-301  
Near Spearman, Hansford County  
Ogallala Aquifer**



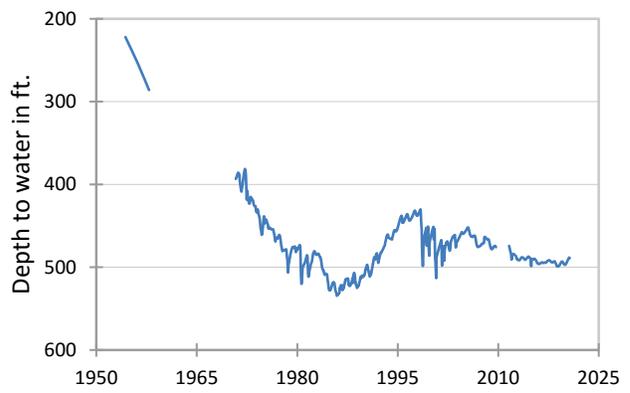
**(2) State Well #10-53-602  
Near Earth, Lamb County  
Ogallala Aquifer**



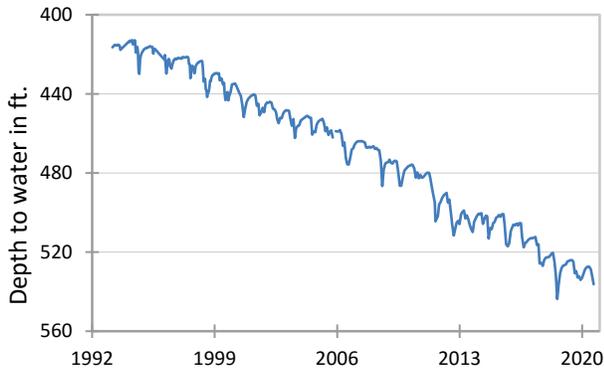
**(3) State Well #27-39-903  
Northwest Martin County  
Ogallala Aquifer**



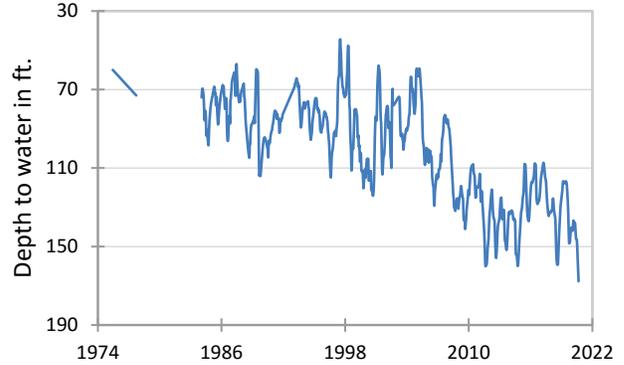
**(4) State Well #33-19-101  
Southeast Dallas, Dallas County  
Twin Mountains Formation-Trinity Aquifer**



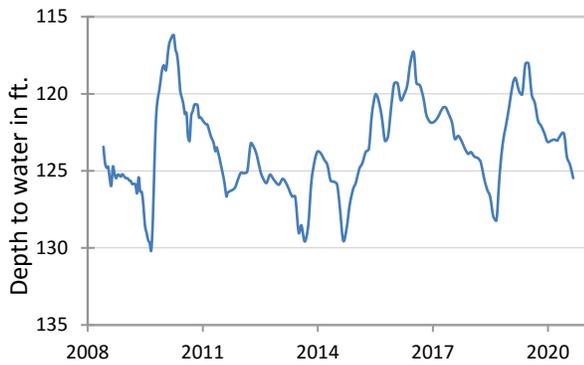
**(5) State Well #40-35-404**  
**Gatesville, Coryell County**  
**Hosston Formation-Trinity Aquifer**



**(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**



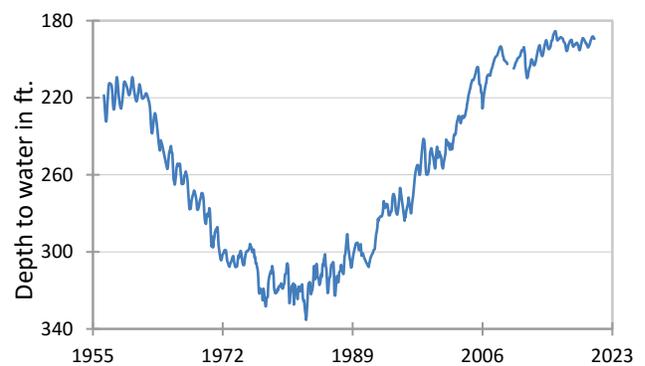
**(9) State Well #34-30-907**  
**Red Springs, Smith County**  
**Carrizo-Wilcox Aquifer**



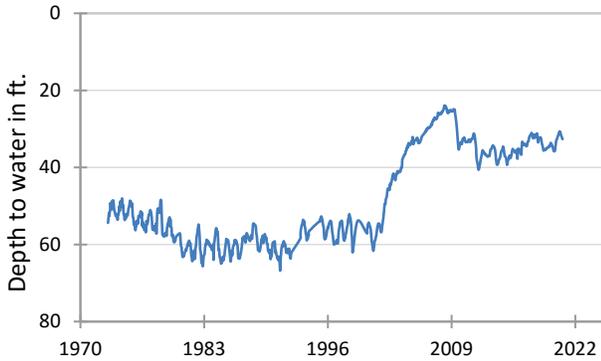
**(10) State Well #77-38-103**  
**Near Cotulla, La Salle County**  
**Carrizo-Wilcox Aquifer**



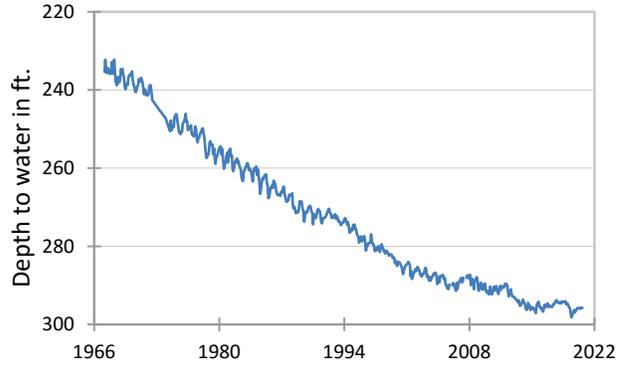
**(11) State Well #65-14-409**  
**Alief, Harris County**  
**Evangeline Formation-Gulf Coast Aquifer**



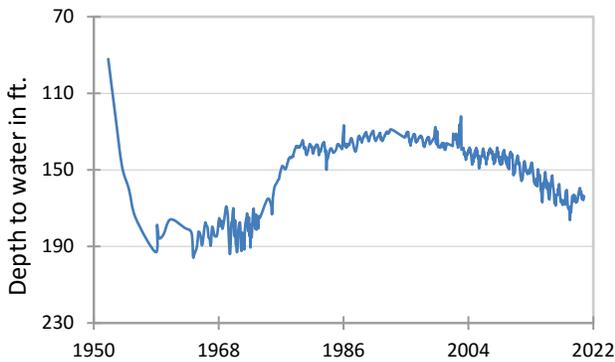
**(12) State Well #80-17-502**  
**Near Bloomington, Victoria County**  
**Lissie Formation-Gulf Coast Aquifer**



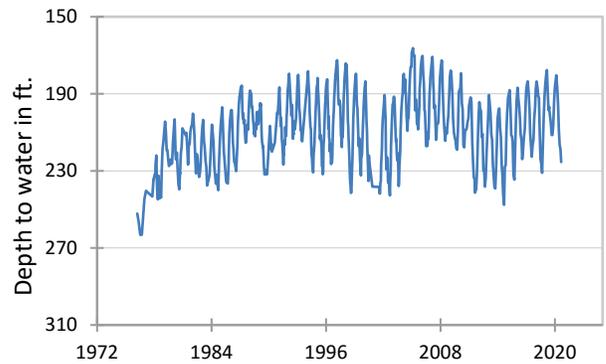
**(13) State Well #49-13-301**  
**El Paso, El Paso County**  
**Hueco-Mesilla Bolson Aquifer**



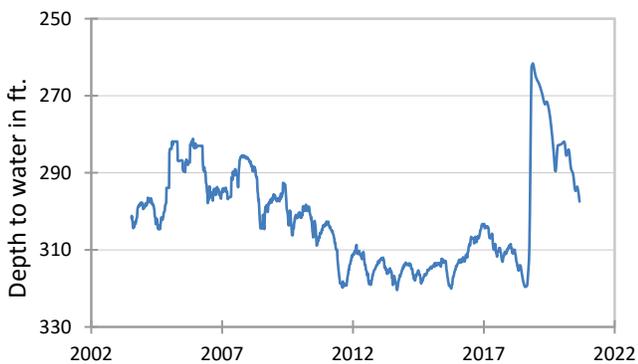
**(14) State Well #46-44-501**  
**Near Pecos, Reeves County**  
**Pecos Valley Aquifer**



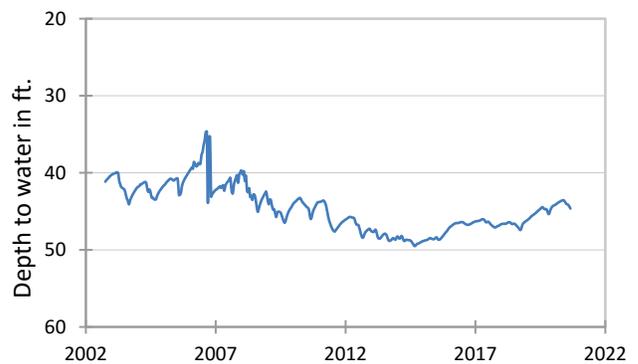
**(15) State Well #52-16-802**  
**Fort Stockton, Pecos County**  
**Edwards-Trinity (Plateau) Aquifer**



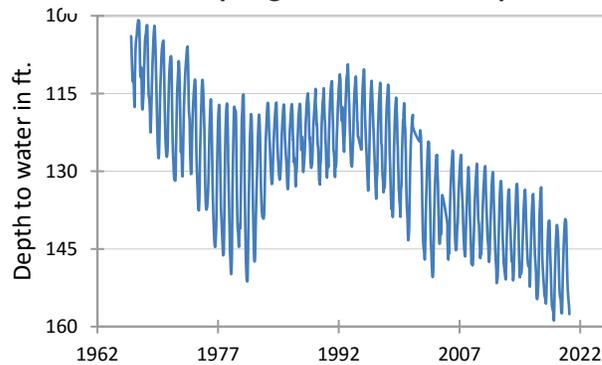
**(16) State Well #55-12-134**  
**Eldorado, Schleicher County**  
**Trinity Aquifer**



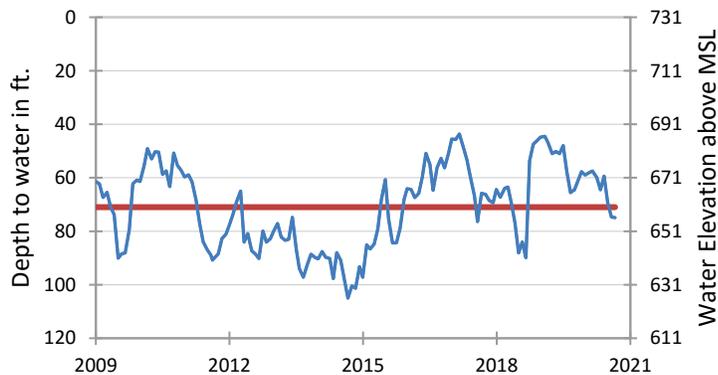
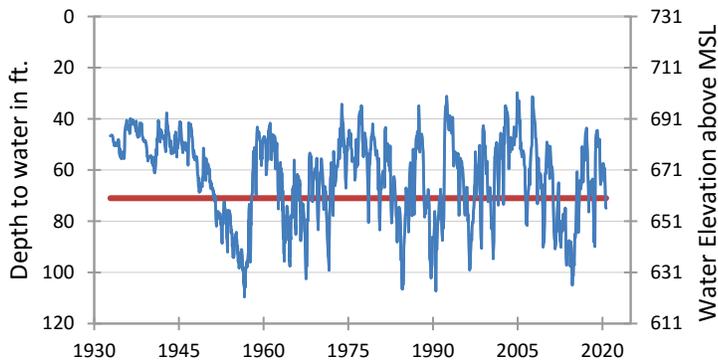
**(17) State Well #21-35-748**  
**Near O'Brien, Haskell County**  
**Seymour Aquifer**



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

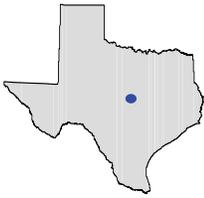


**(8) State Well #68-37-203 (J-17)  
San Antonio, Bexar County  
Edwards (Balcones Fault Zone) Aquifer**



The late August water-level measurement in this Edwards (Balcones Fault Zone) Aquifer well, elevation 731 feet above mean sea level, was 74.90 feet below land surface, or 656.10 feet above mean sea level. This was 0.20 feet below last month's measurement, 9.30 feet below last year's measurement and 28.26 feet below the initial measurement recorded in 1932.

**Water levels below the red line indicate periods in which Edwards Aquifer Authority Stage 1 drought restrictions are in effect.**

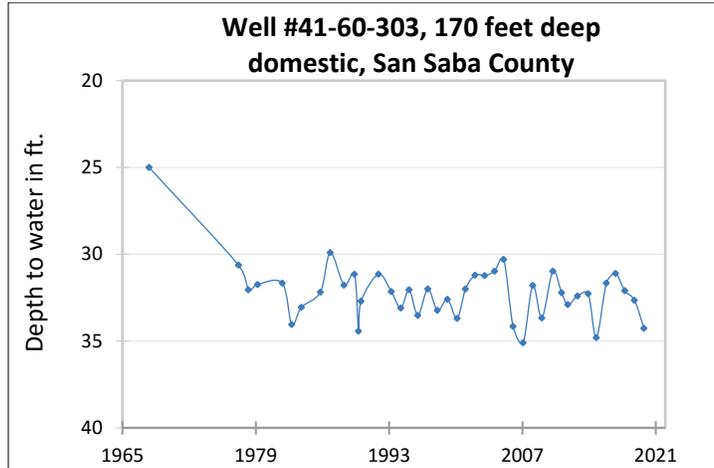


## HYDROGRAPH OF THE MONTH

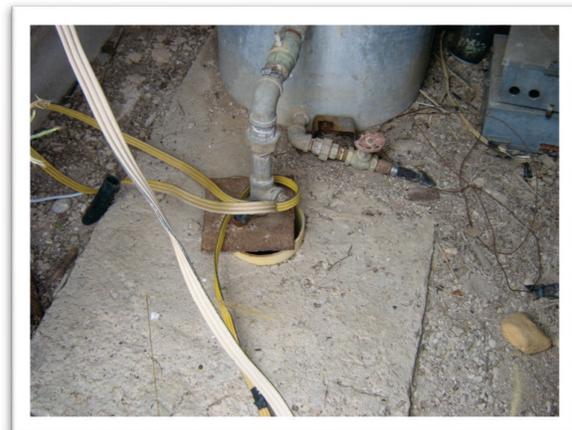
Each month this space features a new hydrograph (marked with the • symbol on the map) depicting different aquifers and their conditions in Texas.

The Marble Falls Aquifer is a minor aquifer which occurs in several separated outcrops along the northern and eastern flanks of the Llano Uplift region of Central Texas. Groundwater occurs in fractures, solution cavities, and channels in the limestone of the Marble Falls Formation of the Bend Group. Maximum thickness of the formation is 600 feet. The water quality in the Marble Falls Aquifer is variable, with the total dissolved solids content increasing down-dip to the north, away from the Llano Uplift. Because the limestone beds composing the aquifer are relatively shallow, the aquifer is susceptible to pollution by surface uses and activities. The groundwater contains less than 1,000 milligrams per liter of total dissolved solids. Water from the aquifer is used for municipal, agricultural, and industrial uses, and no significant water-level declines have occurred in wells measured by the TWDB.

## Marble Falls Aquifer



The initial measurement of 25 feet below land surface in this domestic well was recorded by a registered water well driller in October of 1962. Roughly ten years later, the TWDB began recording near-annual measurements. The period of record reveals a relatively stable water level which fluctuates primarily between 30 and 35 feet below land surface. The lowest measurement to date of 35.10 feet below land surface was recorded in January of 2007 during drought conditions.



Far away (left), and close-up (right) images of well #41-60-303.