

# Texas Water Conditions Report

June 2021

## Surface Water News:

TWDB and LCRA staff are conducting a study of surface water – groundwater interactions on the South Llano River. Site evaluations started in April 2021. Beginning this fall, suitable existing wells that can be instrumented to monitor groundwater levels will be identified, flow measurements will be collected in the river, and equipment will be installed to monitor stage. Work will continue to the end of 2022.

## RAINFALL

Many areas of Texas, particularly in northwestern, southeastern, and the Gulf Coast received much above average rainfall, reaching 15.47 inches in areas of the state [dark blue shading, Figure 1(a)].

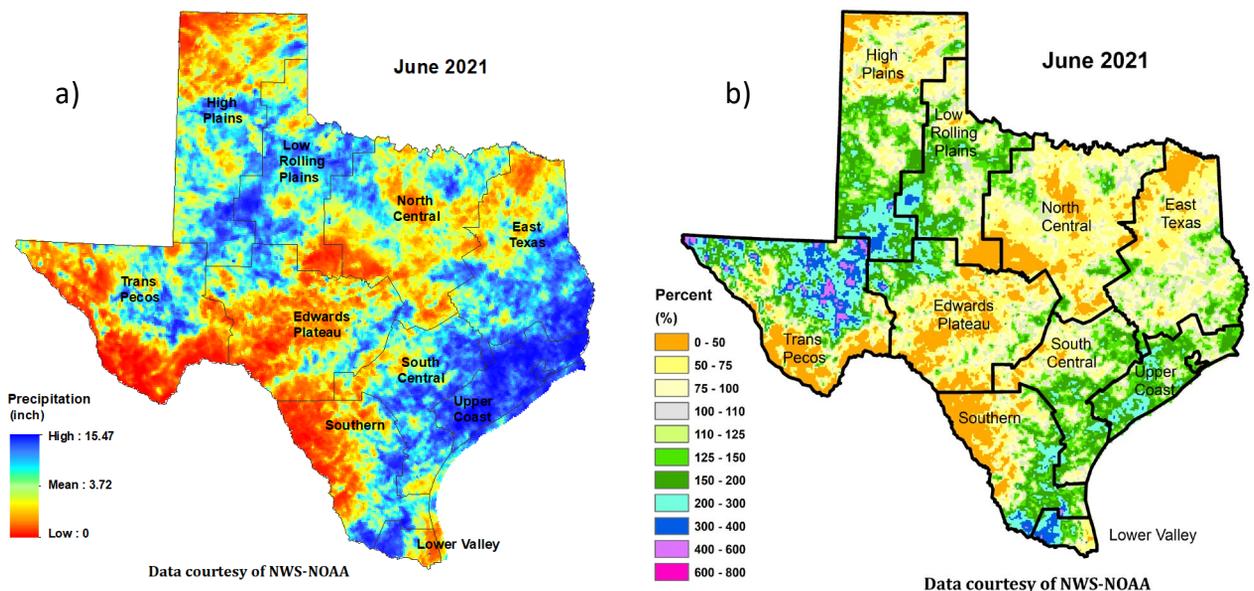
Some rainfall [light blue and dark blue shading, Figure 1(a)] was recorded over areas of the High Plains, Low Rolling Plains, Trans Pecos, northwestern and southeastern Edwards Plateau, southeastern Southern, western Lower Valley, portions of North Central, much of South Central, East Texas, and the Upper Coast climate divisions.

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

Monthly rainfall for June was much above average compared to historical data from 1981–2010, receiving 3–6 times the average rainfall [dark blue and purple shading, Figure 1(b)] in the northern and central Trans Pecos, southern High Plains, southern Southern, and western Lower Valley climate divisions. A small area of the Trans Pecos climate division received 6–8 times the average rainfall [pink shading, Figure 1(b)].

Above average rainfall [green and light blue shading, Figure 1(b)] occurred in portions of the Trans Pecos, High Plains, Low Rolling Plains, northern Edwards Plateau, southern and eastern Southern, portions of the Lower Valley, South Central, and Upper Coast climate divisions.

Rainfall was below average [yellow and orange shading, Figure 1(b)], in portions of the northern and central High Plains, southern Trans Pecos, portions of the Low Rolling Plains, much of the Edwards Plateau, North Central, East Texas, portions of South Central, Southern, eastern Lower Valley, and portions of the Upper Coast climate divisions.

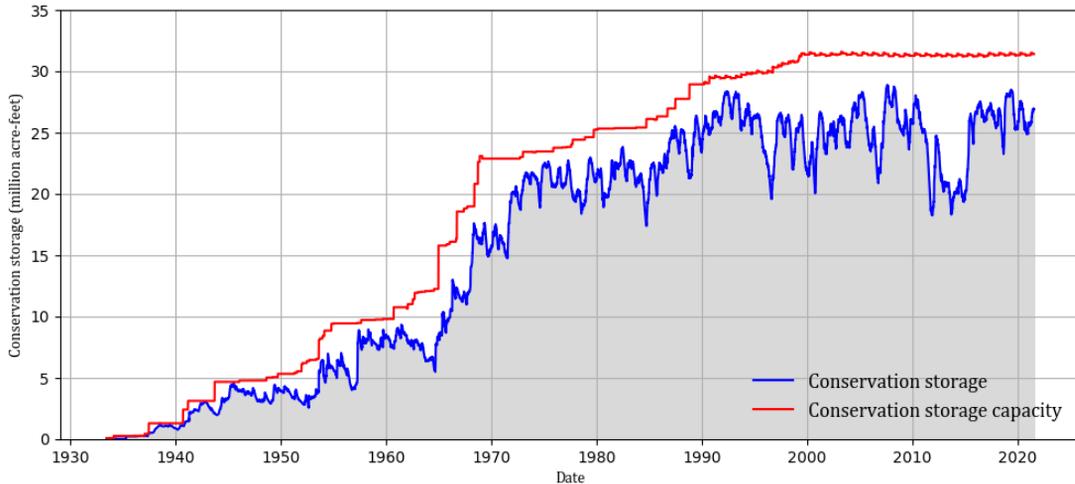


**Figure 1:** (a) Monthly accumulated rainfall and (b) Percent of normal rainfall

## RESERVOIR STORAGE

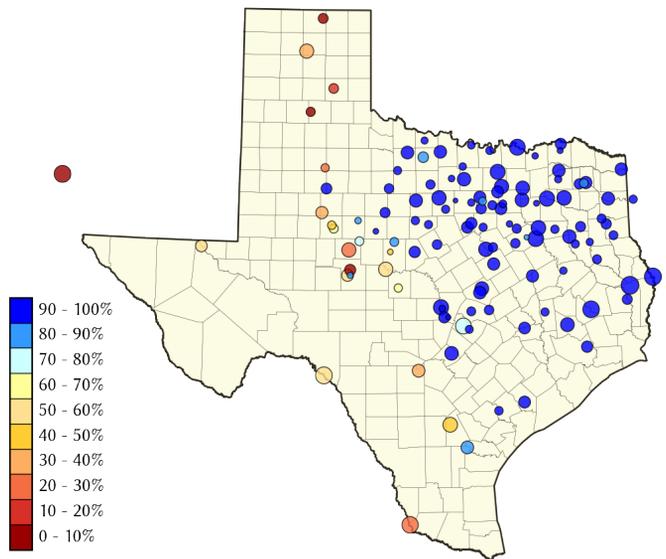
At the end of June 2021, total conservation storage\* in 118 of the state’s major water supply reservoirs plus Elephant Butte Reservoir in New Mexico was 26.8 million acre-feet or 83.2 percent of total conservation storage capacity (Figure 2). This is approximately 0.85 million acre-feet more than a month ago and approximately 0.1 million acre-feet less than at the end of June 2020.

Statewide monitored major water supply reservoir conservation storage



**Figure 2:** Statewide reservoir conservation storage

Out of 118 reservoirs in the state, 57 reservoirs held 100 percent of conservation storage capacity (Figure 3). Additionally, 36 were at or above 90 percent full. Seven reservoirs, E.V. Spence (24 percent full), Greenbelt (18.3 percent full), Mackenzie (8.6 percent full), O. C. Fisher (5.3 percent full), Palo Duro Reservoir (1 percent full), Falcon (24.9 percent full), and White River (25.5 percent full) remained below 30 percent full. Elephant Butte Reservoir (located in New Mexico) was 7.1 percent full.

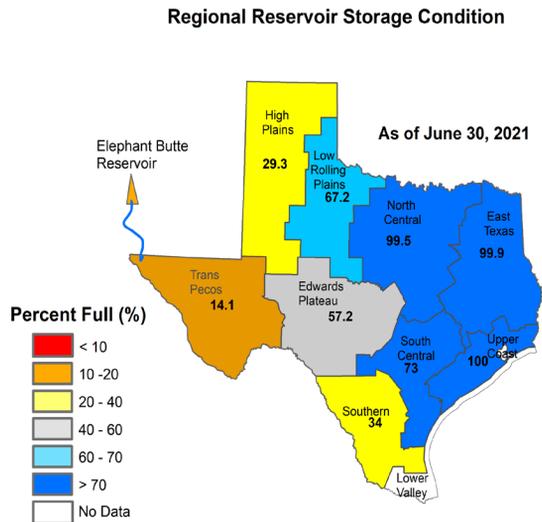


**Figure 3:** Reservoir conservation storage at end-June expressed as percent full (%)

\*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.

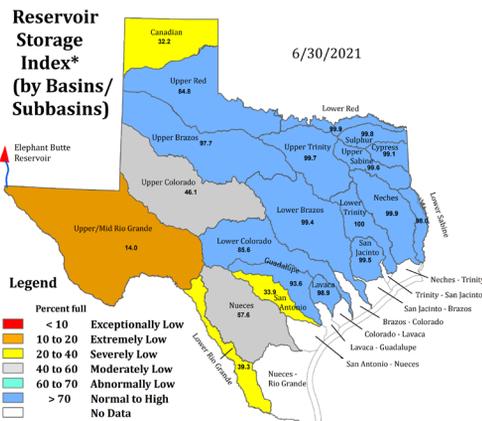
Total regionally combined conservation storage was at or above-normal (storage  $\geq 70$  percent full) in the North Central (99.5 percent full), East Texas (99.9 percent full), and Upper Coast (100 percent full) climate divisions (Figure 4). Conservation storage in the Low Rolling Plains (67.2) climate division was abnormally low (Figure 4). The Edwards Plateau climate division had moderately low conservation storage (57.2 percent full). The High Plains (29.3 percent full) and Southern (34 percent full) climate divisions had severely low storage, and the Trans Pecos climate division had extremely low conservation storage (14.1 percent full) (Figure 4).

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



Percent full is calculated by combined conservation storage of all reservoirs in a climate region (dead pool is excluded)

**Figure 4:** Reservoir Storage Index\* by climate division at 6/30/2021



\*Percent of combined conservation storage capacity of 118 major water supply reservoirs by sub-basin (dead pools are excluded)

**Figure 5:** Reservoir Storage Index\* by river basin/sub-basin at 6/30/2021

\*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-June		Storage change from end-May 2021		Storage change from end-Jun 2020	
	(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)**	(%)
Abilene, Lake	7,900	7,288	92.3	1,550	19.6	110	1.4
Alan Henry Reservoir	96,207	96,207	100.0	1,805	1.9	0	0.0
*Amistad Reservoir (Texas & Mexico)	3,275,532	1,073,826	32.8	11,176	0.3	-77,833	-2.4
*Amistad Reservoir (Texas)	1,840,849	950,016	51.6	-733	0.0	-129,766	-7.0
Amon G Carter, Lake	19,266	19,266	100.0	0	0.0	0	0.0
Aquilla Lake	43,243	42,445	98.2	-798	-1.8	-798	-1.8
Arlington, Lake	40,157	38,531	96.0	-1,626	-4.0	-1,145	-2.9
Arrowhead, Lake	230,359	226,893	98.5	-3,466	-1.5	-2,887	-1.3
Athens, Lake	29,503	29,503	100.0	0	0.0	313	1.1
*Austin, Lake	23,972	22,942	95.7	-216	0.0	-216	0.0
B A Steinhagen Lake	69,186	69,186	100.0	8,177	11.8	1,725	2.5
Bardwell Lake	46,122	46,122	100.0	0	0.0	0	0.0
Belton Lake	435,225	435,225	100.0	0	0.0	3,149	0.7
Benbrook Lake	85,648	85,648	100.0	0	0.0	0	0.0
Bob Sandlin, Lake	192,417	192,417	100.0	0	0.0	0	0.0
Bonham, Lake	11,027	10,786	97.8	-241	-2.2	311	2.8
Brady Creek Reservoir	28,808	18,263	63.4	-471	-1.6	-6,218	-21.6
Bridgeport, Lake	366,236	366,236	100.0	3,140	0.9	0	0.0
*Brownwood, Lake	130,868	129,514	99.0	-1,354	-1.0	13,221	10.1
Buchanan, Lake	816,904	787,754	96.4	46,218	5.7	-19,398	-2.4
Caddo, Lake	29,898	29,898	100.0	0	0.0	0	0.0
Canyon Lake	378,781	352,779	93.1	8,267	2.2	-16,039	-4.2
Cedar Creek Reservoir in Trinity	644,686	638,812	99.1	-5,874	0.0	9,698	1.5
Champion Creek Reservoir	41,580	25,842	62.2	663	1.6	-481	-1.2
Cherokee, Lake	40,094	40,094	100.0	0	0.0	0	0.0
Choke Canyon Reservoir	662,820	322,645	48.7	40,321	6.1	46,060	6.9
*Cisco, Lake	29,003	28,591	98.6	2,881	9.9	3,789	13.1
Coleman, Lake	38,075	34,185	89.8	1,400	3.7	-1,918	-5.0
Colorado City, Lake	31,040	31,040	100.0	0	0.0	8,293	26.7
*Coleto Creek Reservoir	30,758	14,257	46.4	3,371	11.0	1,859	6.0
Conroe, Lake	410,988	408,497	99.4	-2,491	0.0	7,044	1.7
Corpus Christi, Lake	256,062	207,446	81.0	50,751	19.8	34,555	13.5
Crook, Lake	9,195	9,028	98.2	-167	-1.8	10	0.1
Cypress Springs, Lake	66,756	66,756	100.0	0	0.0	130	0.2
E. V. Spence Reservoir	517,272	124,115	24.0	8,745	1.7	-5,894	-1.1
Eagle Mountain Lake	179,880	178,418	99.2	-1,462	0.0	-1,462	0.0
Elephant Butte Reservoir (Texas)	852,491	60,273	7.1	-41,727	-4.9	-64,321	-7.5
Elephant Butte Reservoir (Total Storage)	1,960,900	139,521	7.1	-96,591	-4.9	-148,891	-7.6
*Falcon Reservoir (Texas & Mexico)	2,646,817	449,249	17.0	3,693	0.1	-102,495	-3.9
*Falcon Reservoir (Texas)	1,551,007	385,464	24.9	-15,411	0.0	-69,249	-4.5
Fork Reservoir, Lake	605,061	601,621	99.4	-3,440	0.0	7,340	1.2
Fort Phantom Hill, Lake	70,030	70,030	100.0	0	0.0	2,937	4.2
Georgetown, Lake	36,823	33,255	90.3	6,252	17.0	7,521	20.4
Gibbons Creek Reservoir	25,721	23,788	92.5	-471	-1.8	-197	0.0
Graham, Lake	45,288	45,288	100.0	0	0.0	0	0.0
Granbury, Lake	132,949	130,433	98.1	-1,457	-1.1	-2,434	-1.8

## CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of lake or reservoir	Storage capacity	Storage at end-June		Storage change from end-May 2021		Storage change from end-Jun 2020	
	(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)**	(%)
<i>Continued</i>							
Granger Lake	51,822	51,822	100.0	0	0.0	0	0.0
Grapevine Lake	163,064	163,064	100.0	0	0.0	0	0.0
Greenbelt Lake	59,968	10,991	18.3	341	0.6	-884	-1.5
*Halbert, Lake	6,033	5,214	86.4	-115	-1.9	38	0.6
Hords Creek Lake	8,109	4,026	49.6	-142	-1.8	-1,677	-20.7
Houston County Lake	17,113	17,113	100.0	0	0.0	232	1.4
Houston, Lake	130,147	130,147	100.0	0	0.0	12,306	9.5
Hubbard Creek Reservoir	313,298	312,984	99.9	4,059	1.3	16,039	5.1
Hubert H Moss Lake	24,058	24,058	100.0	0	0.0	22	0.1
Inks, Lake	13,962	12,870	92.2	-30	0.0	-15	0.0
J. B. Thomas, Lake	199,931	71,769	35.9	44,457	22.2	27,891	14.0
Jacksonville, Lake	25,670	25,670	100.0	0	0.0	220	0.9
Jim Chapman Lake (Cooper)	260,332	260,332	100.0	0	0.0	5,828	2.2
Joe Pool Lake	175,800	175,800	100.0	0	0.0	0	0.0
Kemp, Lake	245,307	245,307	100.0	11,039	4.5	0	0.0
Kickapoo, Lake	86,345	77,971	90.3	3,331	3.9	-3,983	-4.6
Lavon Lake	406,388	406,388	100.0	0	0.0	0	0.0
Leon, Lake	27,762	27,326	98.4	-436	-1.6	1,664	6.0
Lewisville Lake	563,228	563,228	100.0	0	0.0	0	0.0
Limestone, Lake	203,780	203,780	100.0	0	0.0	4,935	2.4
*Livingston, Lake	1,741,867	1,741,867	100.0	0	0.0	0	0.0
*Lost Creek Reservoir	11,950	11,878	99.4	-72	0.0	-72	0.0
Lyndon B Johnson, Lake	115,249	110,027	95.5	-548	0.0	-1,344	-1.2
Mackenzie Reservoir	46,450	3,994	8.6	65	0.1	-880	-1.9
Marble Falls, Lake	6,901	6,841	99.1	-60	0.0	32	0.5
Martin, Lake	75,726	74,248	98.0	-1,478	-2.0	538	0.7
Medina Lake	254,823	86,623	34.0	-3,748	-1.5	-77,566	-30.4
Meredith, Lake	500,000	180,410	36.1	1,245	0.2	-19,570	-3.9
Millers Creek Reservoir	26,768	26,768	100.0	0	0.0	0	0.0
*Mineral Wells, Lake	5,273	5,273	100.0	0	0.0	0	0.0
Monticello, Lake	34,740	29,683	85.4	-1,266	-3.6	-235	0.0
Mountain Creek, Lake	22,850	22,850	100.0	0	0.0	0	0.0
Murvaul, Lake	38,285	38,285	100.0	0	0.0	411	1.1
Nacogdoches, Lake	39,522	38,719	98.0	-803	-2.0	534	1.4
Nasworthy	9,615	8,716	86.0	272	3.1	434	4.9
Navarro Mills Lake	49,827	49,827	100.0	0	0.0	1,959	3.9
New Terrell City Lake	8,583	8,583	100.0	0	0.0	0	0.0
Nocona, Lake (Farmers Crk)	21,444	21,444	100.0	0	0.0	0	0.0
North Fork Buffalo Creek Reservoir	15,400	15,400	100.0	0	0.0	605	3.9
O' the Pines, Lake	268,566	268,566	100.0	0	0.0	0	0.0
O. C. Fisher Lake	115,742	6,175	5.3	-304	0.0	-3,275	-2.8
*O. H. Ivie Reservoir	554,340	325,188	58.7	-9,554	-1.7	-55,824	-10.1
Oak Creek Reservoir	39,210	29,346	74.8	-235	0.0	-4,936	-12.6

## CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of lake or reservoir	Storage capacity	Storage at end-June		Storage change from end-May 2021		Storage change from end-Jun 2020	
	(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)**	(%)
<i>Continued</i>							
Palestine, Lake	367,303	367,303	100.0	0	0.0	8,261	2.2
Palo Duro Reservoir	61,066	640	1.0	32	0.1	-1,034	-1.7
Palo Pinto, Lake	26,766	26,766	100.0	0	0.0	1,534	5.7
Pat Cleburne, Lake	26,008	26,008	100.0	0	0.0	0	0.0
*Pat Mayse Lake	113,683	113,683	100.0	0	0.0	0	0.0
Possum Kingdom Lake	538,139	534,922	99.4	1,246	0.2	-3,217	0.0
Proctor Lake	54,762	54,762	100.0	0	0.0	5,636	10.3
Ray Hubbard, Lake	439,559	438,932	99.9	208	0.0	-209	0.0
Ray Roberts, Lake	788,167	788,167	100.0	0	0.0	0	0.0
Red Bluff Reservoir	151,110	81,139	53.7	10,118	6.7	-4,693	-3.1
Richland-Chambers Reservoir	1,087,839	1,087,839	100.0	0	0.0	10,256	0.9
Sam Rayburn Reservoir	2,857,077	2,857,077	100.0	0	0.0	97,356	3.4
Somerville Lake	150,293	150,293	100.0	0	0.0	1,462	1.0
Squaw Creek, Lake	151,250	151,250	100.0	0	0.0	0	0.0
Stamford, Lake	51,570	51,570	100.0	0	0.0	0	0.0
Stillhouse Hollow Lake	227,771	227,771	100.0	0	0.0	1,158	0.5
Striker, Lake	16,934	16,934	100.0	0	0.0	0	0.0
Sweetwater, Lake	12,267	10,193	83.1	125	1.0	-1,328	-10.8
*Sulphur Springs, Lake	17,747	16,890	95.2	-857	-4.8	-219	-1.2
Tawakoni, Lake	871,685	871,685	100.0	0	0.0	1,479	0.2
Texana, Lake	159,566	157,823	98.9	-1,283	0.0	-1,559	0.0
Texoma, Lake (Texas & Oklahoma)	2,487,601	2,670,224	100.0	-86,903	-3.5	-58,244	-2.3
Texoma, Lake (Texas)	1,243,801	1,243,801	100.0	0	0.0	0	0.0
Toledo Bend Reservoir (Texas & Louisiana)	4,472,900	4,387,592	98.1	-174,872	-3.9	95,765	2.1
Toledo Bend Reservoir (Texas)	2,236,450	2,191,746	98.0	-44,704	-2.0	47,882	2.1
Travis, Lake	1,113,348	855,576	76.8	67,691	6.1	-55,433	-5.0
Twin Buttes Reservoir	182,454	92,724	50.8	-1,767	0.0	-22,331	-12.2
Tyler, Lake	72,073	72,073	100.0	0	0.0	845	1.2
Waco, Lake	189,418	189,418	100.0	0	0.0	1,858	1.0
Waxahachie, Lake	10,780	10,780	100.0	0	0.0	179	1.7
Weatherford, Lake	17,812	17,476	98.1	-336	-1.9	-293	-1.6
White River Lake	29,880	7,619	25.5	3,253	10.9	2,257	7.6
Whitney, Lake	553,344	548,353	99.1	-4,991	0.0	19,166	3.5
Worth, Lake	24,419	22,754	93.2	-1,665	-6.8	-1,665	-6.8
Wright Patman Lake	231,496	231,496	100.0	-78,886	-34.1	0	0.0
<b>STATEWIDE TOTAL</b>							
<b>STATEWIDE TOTAL</b>	<b>32,221,727</b>	<b>26,814,217</b>	<b>83.2</b>	<b>853,922</b>	<b>2.7</b>	<b>-133,580</b>	<b>0.0</b>

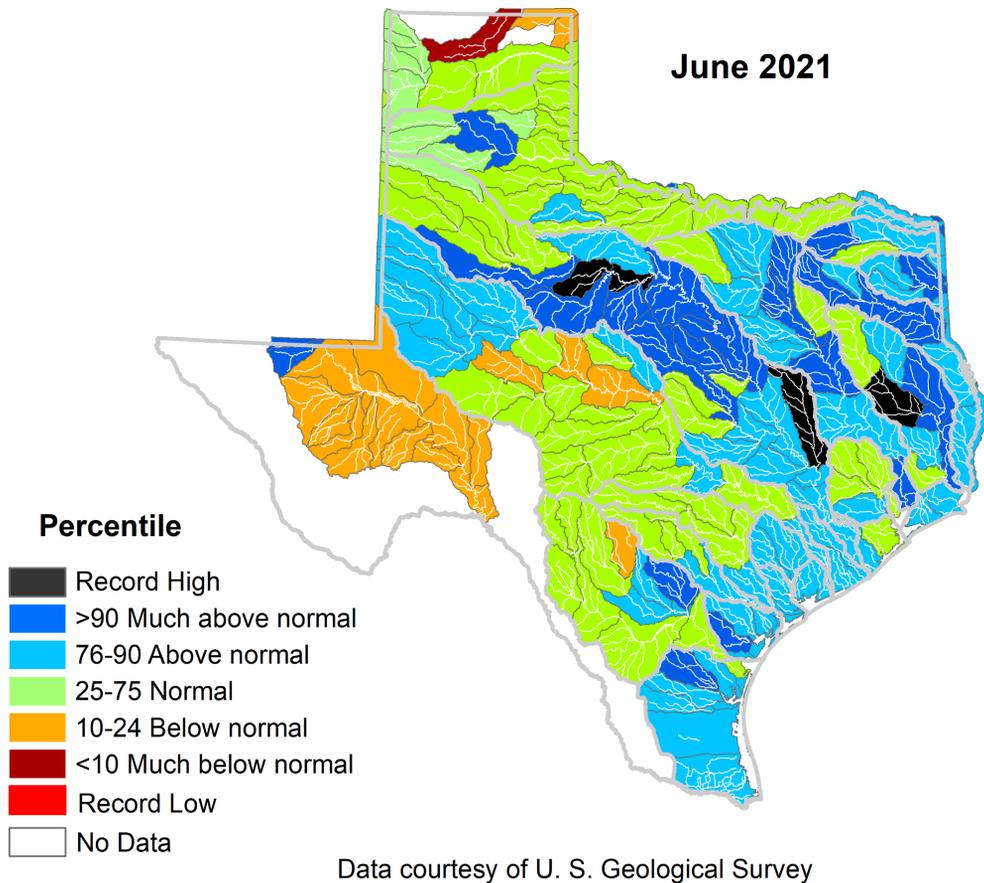
\*Total volume below elevation of conservation pool top is used as conservation storage capacity, because the dead pool storage is unknown.

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

## STREAMFLOW CONDITIONS

Much of the state had near normal streamflow (25–75th percentile, green shading in Figure 6) in June 2021. Record highs (dark gray shading in Figure 6) were recorded in the Upper and Lower Brazos and Neches river basins. Much above normal streamflow (>90th percentile, dark blue shading in Figure 6) was seen in the Upper Red, Sulphur, Cypress, Sabine, Brazos, Trinity, Neches, San Antonio-Nueces, Nueces-Rio Grande, and Upper Rio Grande river basins. Above normal streamflow (76–90th percentile, light blue shading in Figure 6) was seen in much of the central, eastern, and coastal regions of the state including the Red, Colorado, Sulphur, Cypress, Sabine, Neches, Neches-Trinity, San Jacinto, Brazos, Trinity, Colorado-Lavaca, Brazos-Colorado, San Antonio-Nueces, Guadalupe, San Antonio, Lavaca-Guadalupe, Nueces-Rio-Grande, Nueces, and San Jacinto-Brazos river basins

Below normal streamflow (10–24th percentile, orange shading in Figure 6) was recorded in the Canadian, Colorado, Nueces, and Upper Rio Grande river basins. The Red river basin had much below normal streamflow (< 10th percentile, dark red shading in Figure 6).

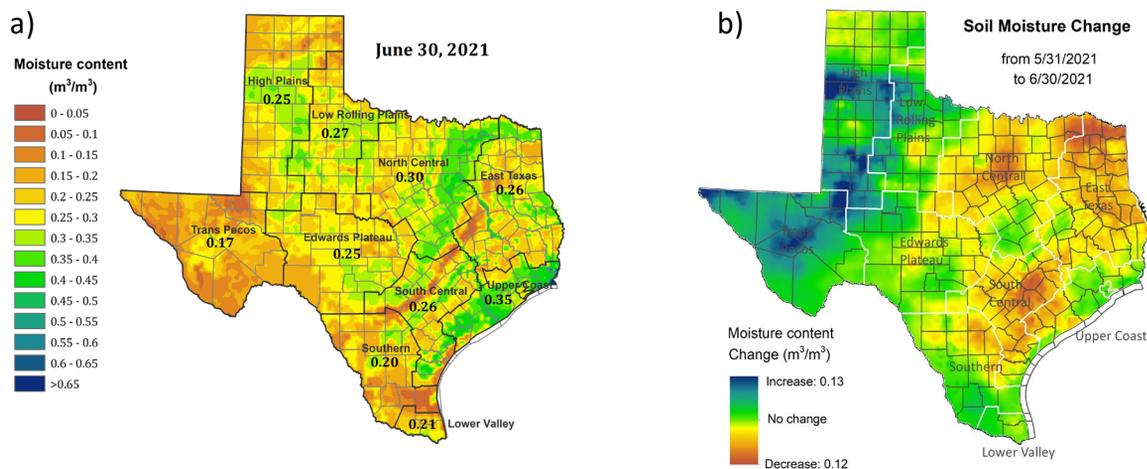


**Figure 6:** Runoff percentiles by the U.S. Geological Survey’s Hydrologic Unit Code

## SOIL MOISTURE

Root zone soil moisture at the end of June 2021 [Figure 7(a)] was moderate [ $> 0.20$  cubic meters of water per bulk cubic meter soil ( $m^3/m^3$ )] in portions of the High Plains, Low Rolling Plains, central North Central, much of the Edwards Plateau, East Texas, portions of the Trans Pecos, central South Central, much of the Lower Valley, and portions of the Southern climate divisions. There were areas of low soil moisture [ $< 0.15$  cubic meters of water per bulk cubic meter soil ( $m^3/m^3$ )] in portions of Trans Pecos, northern and southern Southern, northeastern High Plains, northern Low Rolling Plains, western East Texas, northern and southern Southern climate divisions, and areas of southern South Central stretching across the climate division from the west to the northeast. Soil moisture was high [ $> 0.3$  cubic meters of water per bulk cubic meter soil ( $m^3/m^3$ )] in central and southeastern High Plains, areas of the Low Rolling Plains, northwestern and eastern Edwards Plateau, portions of South Central, central and eastern Southern, areas of the Lower Valley, much of the Upper Coast, portions of North Central, and portions of East Texas climate divisions [Figure 7(a)].

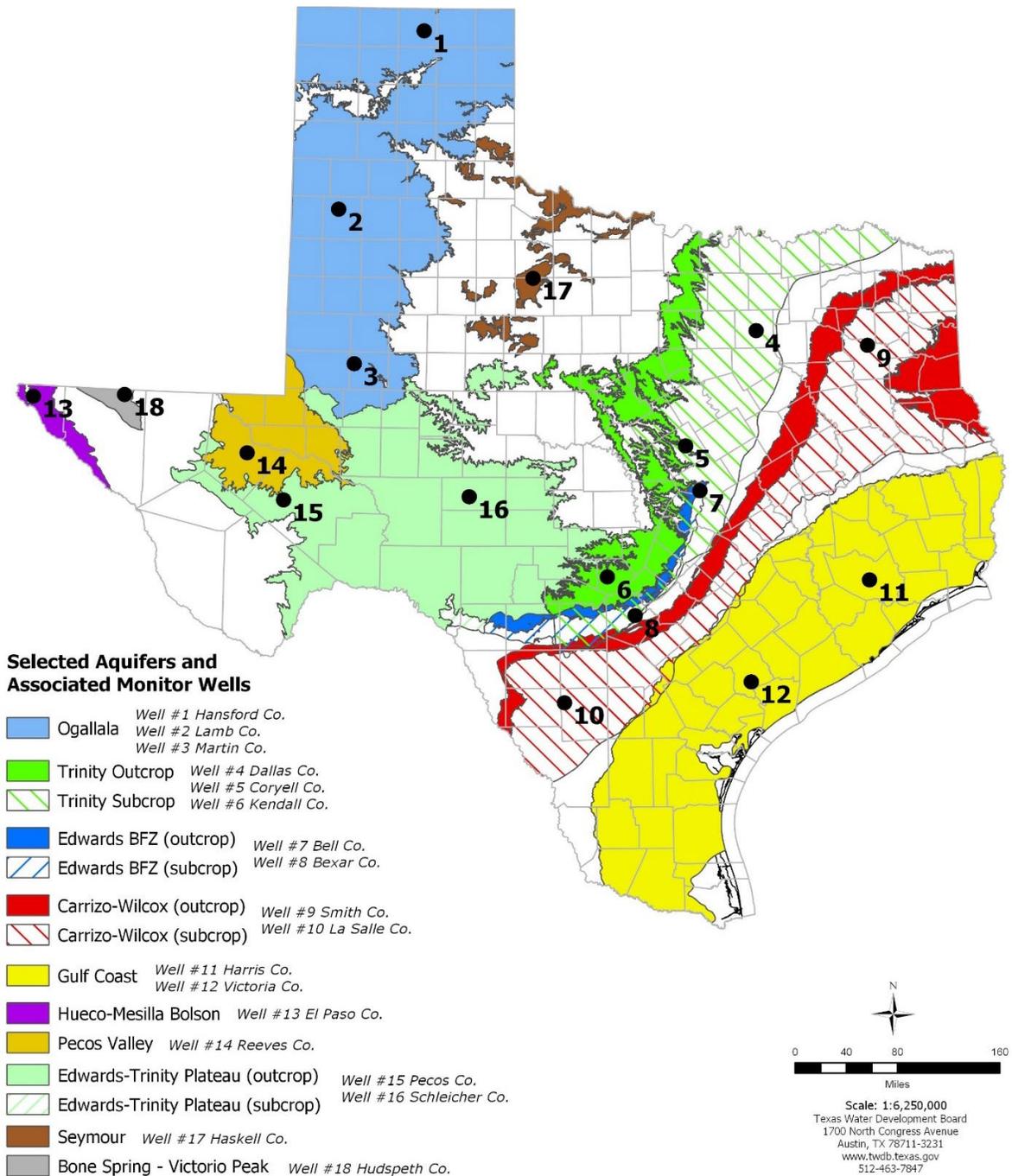
Compared to conditions at the end of May 2021, soil moisture content increased [green to blue shading in Figure 7(b)] in much of the High Plains, Trans Pecos, Low Rolling Plains, Edwards Plateau, southwestern Southern, Lower Valley, portions of northwestern and southern North central, portions of southern East Texas, eastern and southwestern Upper Coast, and portions of northern and southern South Central climate divisions. Soil moisture content decreased [yellow, orange, and brown shading in Figure 7(b)] in central Low Rolling Plains, much of North Central, East Texas, western Upper Coast, northeastern Edwards Plateau, and northeastern Southern climate divisions.



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.

**Figure 7:** (a) Root zone soil moisture conditions in June 2021 and (b) the difference in root zone soil moisture between end-May 2021 and end-June 2021



## June 2021 GROUNDWATER LEVELS IN MONITORING WELLS

Water-level measurements were available for 14 key monitoring wells in the state. Recorders in 4 wells (#1, #7, #14, and #17 on map) were temporarily offline and scheduled for repair. Water levels rose in 8 monitoring wells since the beginning of June, ranging from an increase of 0.07 feet in the El Paso County Hueco-Mesilla Bolson Aquifer well (#13 on map) to 3.09 feet in the Kendall County Trinity Aquifer well (#6 on map). Water levels declined in 6 monitoring wells, ranging from a decline of -0.10 feet in the Martin County Ogallala Aquifer well (#3 on map) to -7.10 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 69.80 feet below land surface or 661.20 feet above mean sea level. Water levels are 1.20 feet above the Stage I critical management level for the San Antonio portion of the Edwards (Balcones Fault Zone) Aquifer.

\* 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	June (depth to water, feet)	May (depth to water, feet)	Month Change	Year Change	Historical Change*	First Measured (year)
(1) Hansford 0354301	NA	161.86	NA	NA	-91.74	1951
(2) Lamb 1053602	152.07	151.93	-0.14	-0.98	-123.90	1951
(3) Martin 2739903	144.50	144.40	-0.10	-0.32	-39.61	1964
(4) Dallas 3319101	485.50	486.00	0.50	3.78	-263.50	1954
(5) Coryell 4035404	531.75	530.68	-1.07	-3.01	-239.75	1955**
(6) Kendall 6802609	146.21	149.30	3.09	0.44	-86.21	1975
(7) Bell 5804816	NA	125.53	NA	NA	-2.02	2008
(8) Bexar 6837203	69.80	62.70	-7.10	-0.30	-23.16	1932
(9) Smith 3430907	436.23	435.12	-1.11	-1.53	-136.23	1977**
(10) La Salle 7738103	497.07	499.49	2.42	10.58	-244.00	2003
(11) Harris 6514409	186.23	186.77	0.54	2.00	-50.73	1947**
(12) Victoria 8017502	31.94	31.59	-0.35	-0.37	2.06	1958**
(13) El Paso 4913301	298.82	298.89	0.07	-3.17	-66.92	1964**
(14) Reeves 4644501	NA	NA	NA	NA	-71.28	1952
(15) Pecos 5216802	215.64	217.32	1.68	0.82	31.24	1976
(16) Schleicher 5512134	279.28	282.11	2.83	15.32	22.62	2003
(17) Haskell 2135748	NA	NA	NA	NA	-1.8	2002
(18) Hudspeth 4807516	154.71	155.15	0.44	-0.80	-50.79	1966

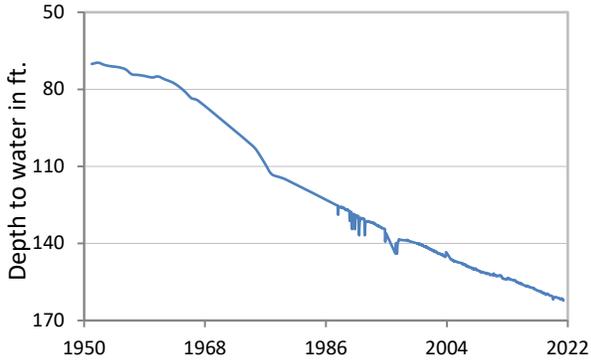
\* Change since the original measurement taken on the date indicated in the last column. The historical changes shown for recorder wells #1, #7, #14 and #17 are based off the most recent water level records from May, May, February and April 2021, respectively.

\*\* Measurement not shown on the hydrograph.

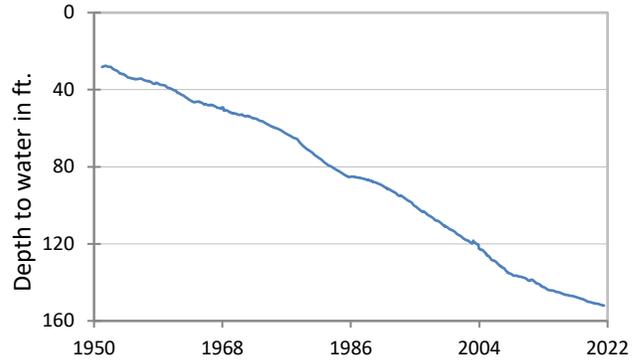
NA (not available)

**June 2021 MONITORING WELL HYDROGRAPHS**

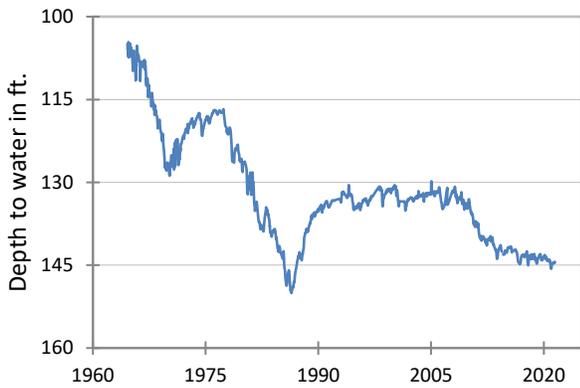
**\*(1) State Well #03-54-301  
Near Spearman, Hansford County  
Ogallala Aquifer**



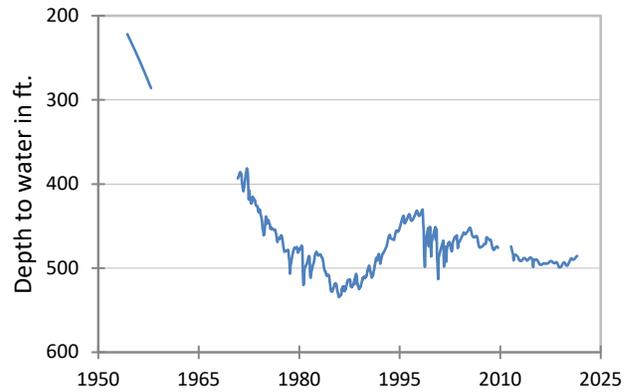
**(2) State Well #10-53-602  
Near Earth, Lamb County  
Ogallala Aquifer**



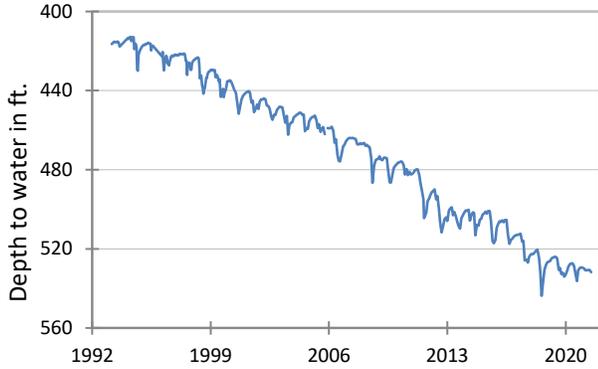
**(3) State Well #27-39-903  
Northwest Martin County  
Ogallala Aquifer**



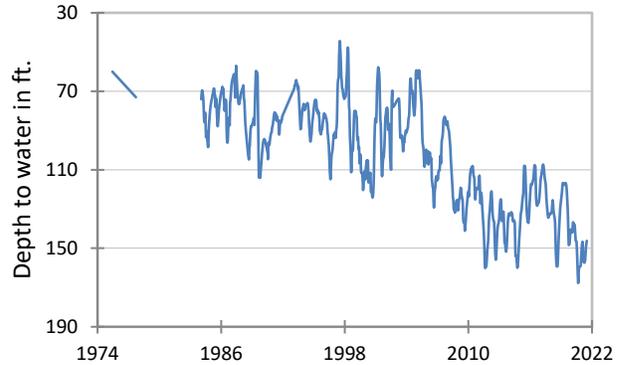
**(4) State Well #33-19-101  
Southeast Dallas, Dallas County  
Twin Mountains Formation-Trinity Aquifer**



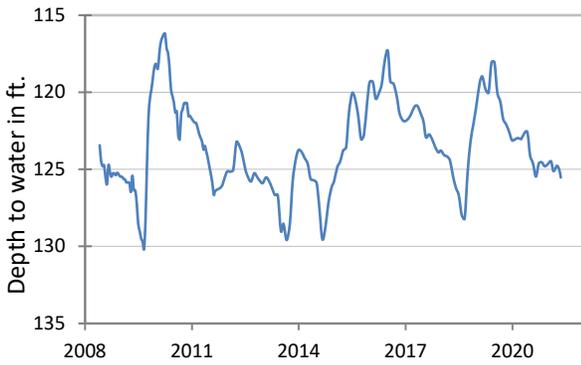
**(5) State Well #40-35-404**  
**Gatesville, Coryell County**  
**Hosston Formation-Trinity Aquifer**



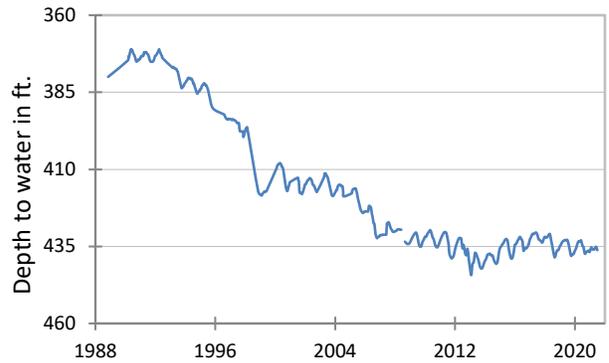
**(6) State Well #68-02-609**  
**Waring, Kendall County**  
**Travis Peak Formation-Trinity Aquifer**



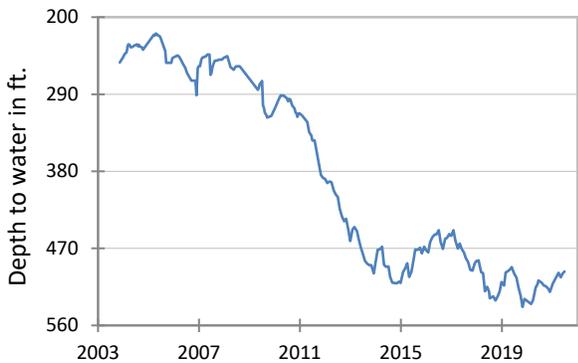
**\*(7) State Well #58-04-816**  
**Near Salado, Bell County**  
**Edwards (Balcones Fault Zone) Aquifer**



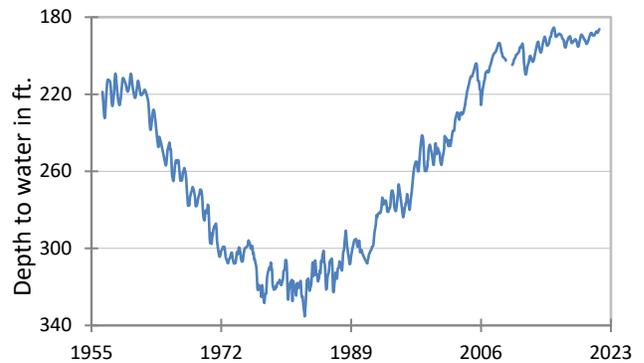
**(9) State Well #34-30-907**  
**Red Springs, Smith County**  
**Carrizo-Wilcox Aquifer**



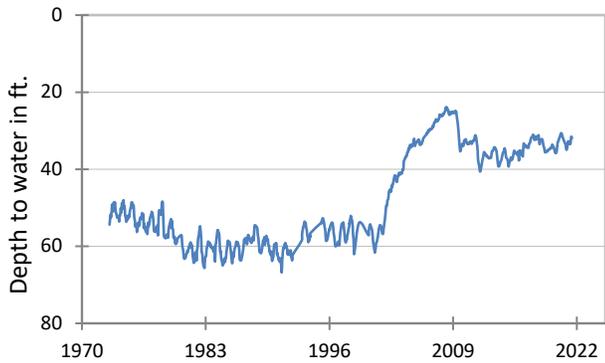
**(10) State Well #77-38-103**  
**Near Cotulla, La Salle County**  
**Carrizo-Wilcox Aquifer**



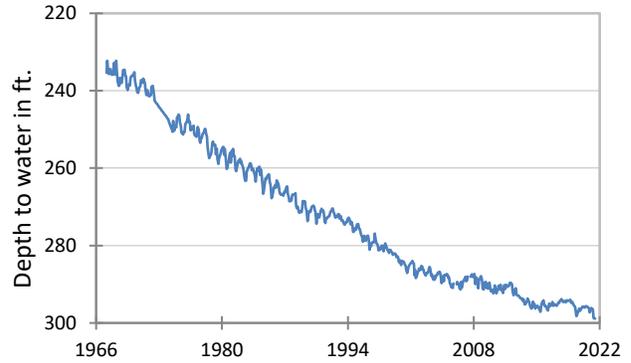
**(11) State Well #65-14-409**  
**North Houston, Harris County**  
**Evangeline Formation-Gulf Coast Aquifer**



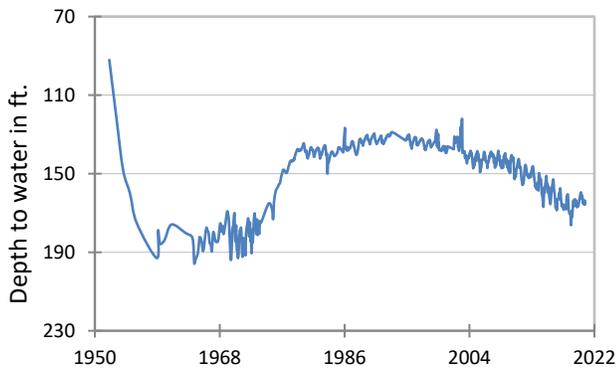
**(12) State Well #80-17-502**  
**Near Bloomington, Victoria County**  
**Lissie Formation-Gulf Coast Aquifer**



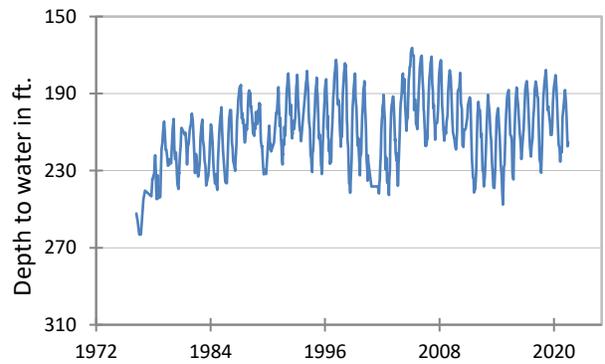
**(13) State Well #49-13-301**  
**El Paso, El Paso County**  
**Hueco-Mesilla Bolsons Aquifer**



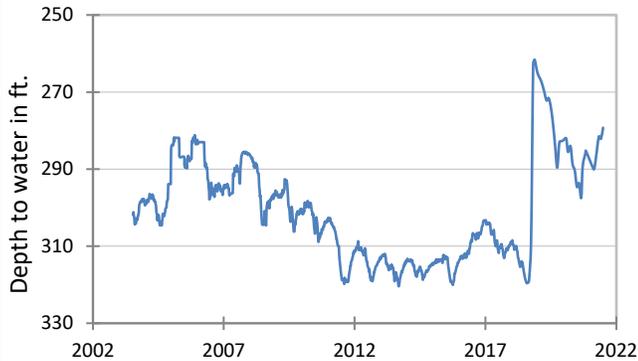
**\*(14) State Well #46-44-501**  
**Near Pecos, Reeves County**  
**Pecos Valley Aquifer**



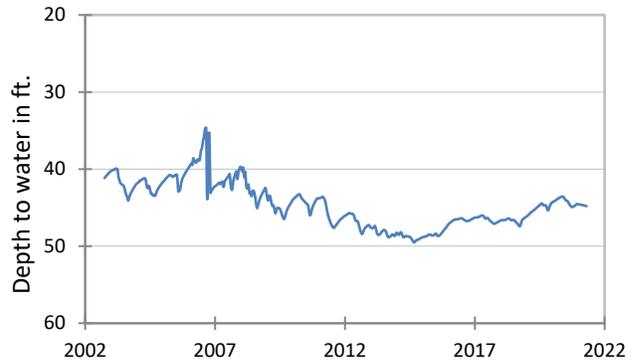
**(15) State Well #52-16-802**  
**Fort Stockton, Pecos County**  
**Edwards-Trinity (Plateau) Aquifer**



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

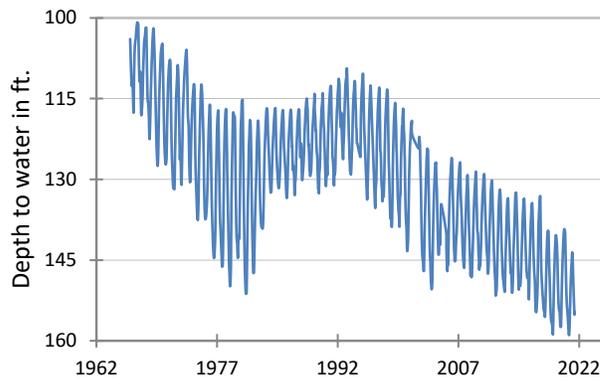


**\*(17) State Well #21-35-748**  
**Near O'Brien, Haskell County**  
**Seymour Aquifer**



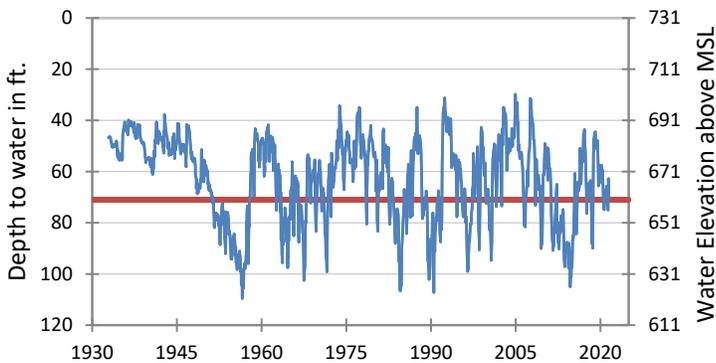
**(18) State Well #48-07-516  
Dell City, Huds peth County**

**Bone Spring - Victorio Peak Aquifer**

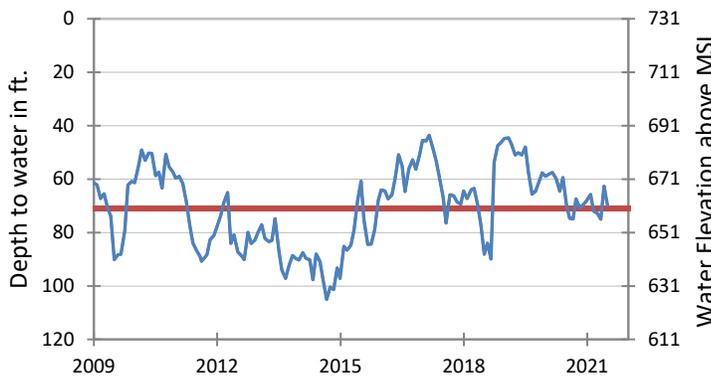


**(8) State Well #68-37-203 (J-17)**

**San Antonio, Bexar County  
Edwards (Balcones Fault Zone) Aquifer**



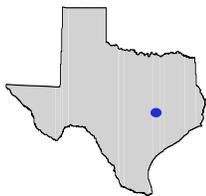
The late June water-level measurement in this Edwards (Balcones Fault Zone) Aquifer well, located at an elevation of 731 feet above mean sea level, was 69.80 feet below land surface, or 661.20 feet above mean sea level. This was 7.10 feet below last month's measurement, 0.30 feet below last year's measurement and 23.16 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. In June 2021, Stage 1 drought restrictions were not in effect because the aquifer remained 1.20 feet above the Stage 1 critical management level.**

\*Recorder wells #1, #7, #14, and #17 were temporarily offline in June 2021 and did not record data.

## HYDROGRAPH OF THE MONTH

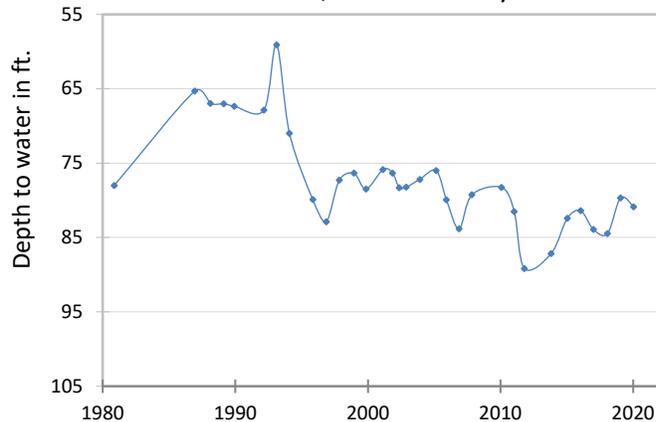


Each month this space features a new hydrograph (marked with the ● symbol on the map) depicting different aquifers and their conditions in Texas.

The Yegua-Jackson Aquifer is a minor aquifer stretching across the southeast part of the state. It includes water-bearing parts of the Yegua Formation (part of the upper Claiborne Group) and the Jackson Group (comprising the Whitsett, Manning, Wellborn, and Caddell formations). These geologic units consist of interbedded sand, silt, and clay layers originally deposited as fluvial and deltaic sediments. Freshwater saturated thickness averages about 170 feet. Water quality varies greatly due to the composition of the water bearing formations, and in all areas the aquifer becomes highly mineralized with depth. Most groundwater is produced from the sand units of the aquifer, where the water is fresh and ranges from less than 50 to 1,000 milligrams per liter of total dissolved solids. Some slightly to moderately saline water, with concentrations of total dissolved solids ranging from 1,000 to 10,000 milligrams per liter, also occurs in the aquifer. The water is primarily used for livestock and domestic consumption, while other uses include municipal, industrial, and agricultural purposes.

### Yegua-Jackson Aquifer

Well #59-24-703, 446 feet deep stock, Grimes County



The initial measurement of 78 feet below land surface was recorded by a registered water well driller in November of 1980. In December of 1986 the Texas Water Development Board began measuring water levels in the well on a near-annual basis. The period of record reveals a brief recharge event in 1993 followed by 4-year decline in water levels that lowered the water table nearly 24 feet. Since then, water levels have largely fluctuated between 75 to 85 feet below land surface with a slight period of decline in 2011 to 2013. The most recent measurement from January of 2020 is 80.89 feet below land surface. This is 2.89 feet lower than the initial measurement in 1980.



Far away (left), and close-up (right) images of well #59-24-703.