

Texas Water Conditions Report

July 2021

Surface Water News:

The Texas Water Development Board is hosting the Water for Texas 2021 Conference from September 27-29, 2021. Topics will include water science and technology, drought and flood, innovative solutions to water challenges, Texas water policy, and communications strategies. Online registration ends Sept. 24.

<https://waterfortexas.twdb.texas.gov/2021/>

RAINFALL

Many areas of Texas, particularly in northwestern, southeastern, and the Gulf Coast received much above average rainfall, reaching 22.55 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, northern and eastern Edwards Plateau, southern North Central, portions of Southern, South Central, East Texas, Lower Valley, and the Upper Coast climate divisions. Little to no rain [yellow, orange, and red shading, Figure 1(a)] fell over much of the Trans Pecos, portions of the High Plains, Low Rolling Plains, North Central, Edwards Plateau, Southern, northern South Central, and northern and eastern East Texas climate divisions.

Monthly rainfall for July 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 portions of the High Plains, northern and southern Low Rolling Plains, portions of East Texas, northern Trans Pecos, northern Edwards Plateau, portions of Southern, much of the Lower Valley, and the western Upper Coast climate divisions. Areas of the northern Edwards Plateau, southern High Plains, eastern North Central, southwestern Upper Coast, southern South Central, eastern and southeastern Southern, and portions of the Lower Valley climate divisions 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, North Central, Edwards Plateau, South Central, East Texas, Southern, Upper Coast, and northwestern Lower Valley climate divisions.

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

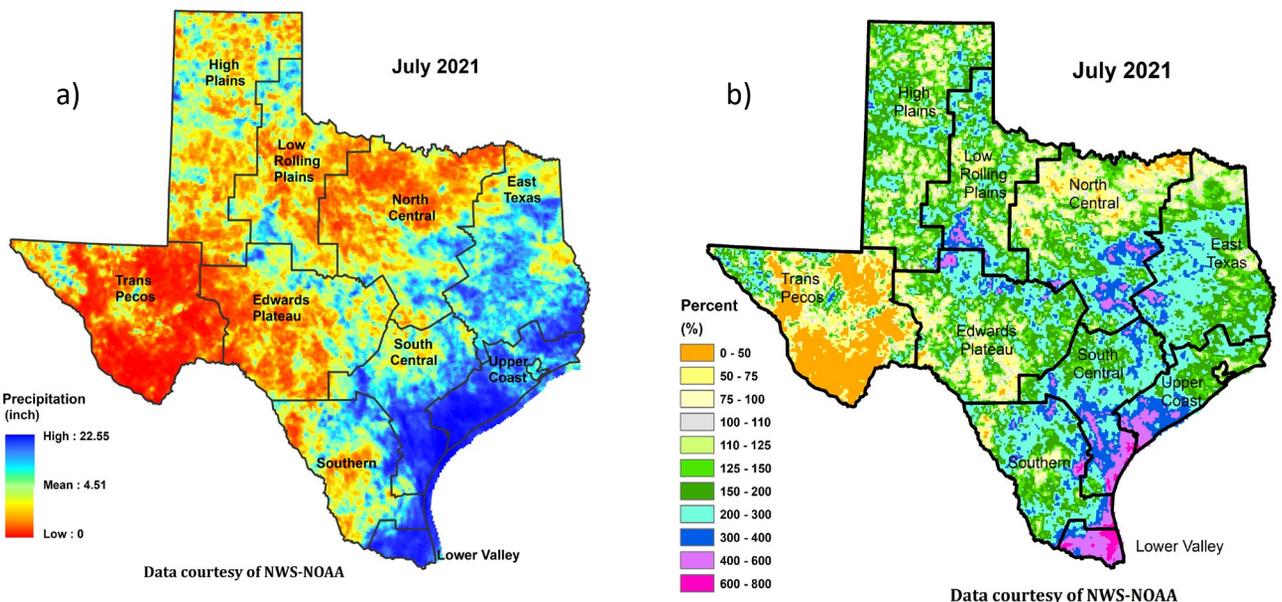


Figure 1: (a) Monthly accumulated rainfall and (b) Percent of normal rainfall

RESERVOIR STORAGE

At the end of July 2021, total conservation storage* in 118 of the state’s major water supply reservoirs was 26.7 million acre-feet or 85 percent of total conservation storage capacity (Figure 2). This is approximately 0.68 million acre-feet more than a month ago and approximately 1.2 million acre-feet more than at the end of July 2020.

Statewide monitored major water supply reservoir conservation storage

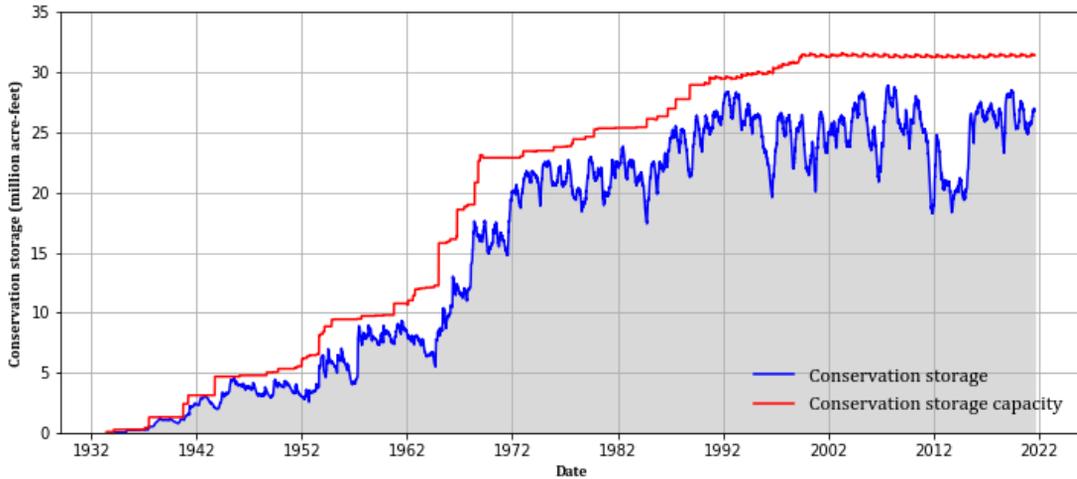


Figure 2: Statewide reservoir conservation storage

Out of 118 reservoirs in the state, 47 reservoirs held 100 percent of conservation storage capacity (Figure 3). Additionally, 42 were at or above 90 percent full. Seven reservoirs, E.V. Spence (28 percent full), Greenbelt (19 percent full), Mackenzie (9 percent full), O. C. Fisher (5 percent full), Palo Duro Reservoir (2 percent full), Falcon (26 percent full), and White River (26 percent full) remained below 30 percent full. Elephant Butte Reservoir (located in New Mexico) was 6 percent full.

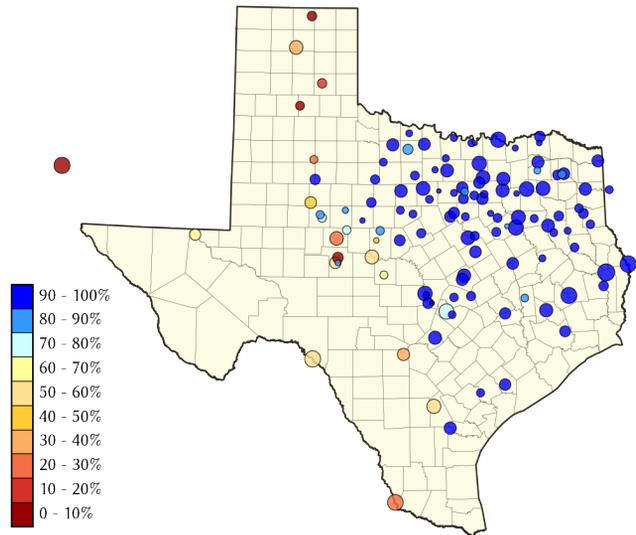


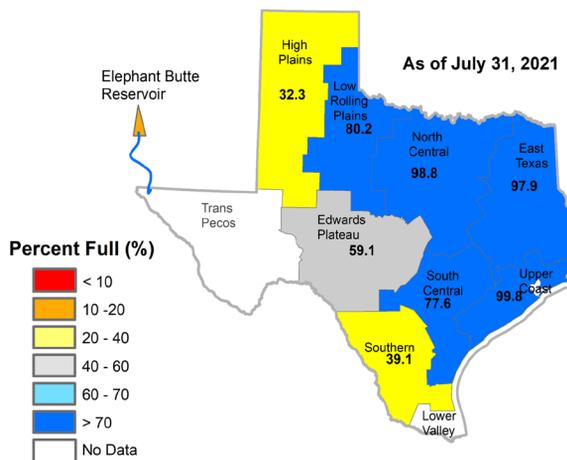
Figure 3: Reservoir conservation storage at end-July expressed as percent full (%)

*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 ≥ 70 percent full) in the North Central (98.8 percent full), East Texas (97.9 percent full), Low Rolling Plains (80.2 percent full), South Central (77.6 percent full), Low Rolling Plains (80.2), and Upper Coast (99.8 percent full) climate divisions (Figure 4). The Edwards Plateau climate division had moderately low conservation storage (59.1 percent full). The High Plains (32.3 percent full) and Southern (39.1 percent full) climate divisions had severely low storage (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. The Nueces river basin had abnormally low conservation storage (60–70 percent full, Figure 5). Conservation storage in the Upper Colorado river basins was moderately low (40–60 percent full, Figure 5), and the Canadian and San Antonio river basins had severely low conservation storage (20–40 percent full, Figure 5).

Regional Reservoir Storage Condition



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 7/31/2021

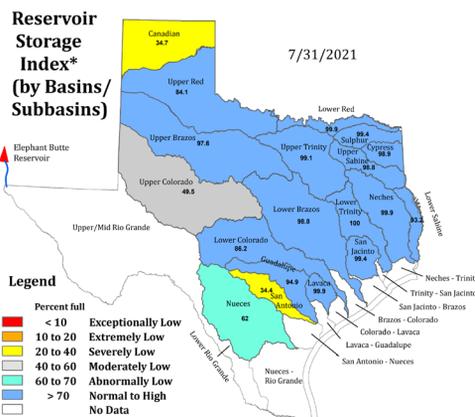


Figure 5: Reservoir Storage Index* by river basin/sub-basin at 7/31/2021

*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-July 2021		Storage change from end-Jun 2021		Storage change from end-Jul 2020	
	(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)**	(%)
Abilene, Lake	7,900	7,739	98	451	6	1,016	13
Alan Henry Reservoir	96,207	96,207	100	0	0	2,382	2
*Amistad Reservoir (Texas & Mexico)	3,275,532	1,123,163	34	49,337	2	-10,274	0
*Amistad Reservoir (Texas)	1,840,849	963,637	52	13,621	1	-86,172	-5
Amon G Carter, Lake	19,266	19,266	100	0	0	0	0
Aquilla Lake	43,243	43,243	100	798	2	370	1
Arlington, Lake	40,157	38,227	95	-304	0	1,754	4
Arrowhead, Lake	230,359	222,602	97	-4,291	-2	-1,140	0
Athens, Lake	29,503	29,503	100	0	0	0	0
*Austin, Lake	23,972	22,834	95	-108	0	169	1
B A Steinhagen Lake	69,186	65,265	94	-3,921	-6	-496	0
Bardwell Lake	46,122	46,122	100	0	0	62	0
Belton Lake	435,225	435,225	100	0	0	17,404	4
Benbrook Lake	85,648	80,901	94	-4,747	-6	2,375	3
Bob Sandlin, Lake	192,417	191,795	100	-622	0	798	0
Bonham, Lake	11,027	10,119	92	-667	-6	31	0
Brady Creek Reservoir	28,808	18,130	63	-133	0	-5,053	-18
Bridgeport, Lake	366,236	356,384	97	-9,852	-3	-6,596	-2
*Brownwood, Lake	130,868	127,297	97	-2,217	-2	17,361	13
Buchanan, Lake	816,904	794,848	97	7,094	1	6,880	1
Caddo, Lake	29,898	29,898	100	no data		no data	
Canyon Lake	378,781	357,914	94	5,135	1	-2,866	0
Cedar Creek Reservoir in Trinity	644,686	642,397	100	3,585	1	17,774	3
Champion Creek Reservoir	41,580	31,595	76	5,753	14	5,873	14
Cherokee, Lake	40,094	40,094	100	0	0	0	0
Choke Canyon Reservoir	662,820	332,021	50	9,376	1	67,451	10
*Cisco, Lake	29,003	27,743	96	-848	-3	3,613	12
Coleman, Lake	38,075	33,559	88	-626	-2	-2,012	-5
Colorado City, Lake	31,040	31,040	100	0	0	9,685	31
*Coleto Creek Reservoir	30,758	25,510	83	11,253	37	13,821	45
Conroe, Lake	410,988	407,923	99	-574	0	13,820	3
Corpus Christi, Lake	256,062	237,376	93	29,930	12	72,527	28
Crook, Lake	9,195	8,664	94	-364	-4	-249	-3
Cypress Springs, Lake	66,756	66,400	99	-356	0	803	1
E. V. Spence Reservoir	517,272	147,161	28	23,046	4	21,870	4
Eagle Mountain Lake	179,880	169,540	94	-8,878	-5	-6,316	-4
Elephant Butte Reservoir (Texas)	852,491	54,472	6	-5,801	-1	-3,320	-2
Elephant Butte Reservoir (Total Storage)	1,960,900	125,297	6	-14,224	-1	-7,685	-4
*Falcon Reservoir (Texas & Mexico)	2,646,817	498,002	19	48,753	2	-21,075	0
*Falcon Reservoir (Texas)	1,551,007	396,731	26	11,267	1	-12,837	0
Fork Reservoir, Lake	605,061	589,607	97	-12,014	-2	6,695	1
Fort Phantom Hill, Lake	70,030	70,030	100	0	0	5,558	8
Georgetown, Lake	36,823	33,024	90	-231	0	9,048	25
Gibbons Creek Reservoir	25,721	20,944	81	-2,844	-11	-1,869	-7
Graham, Lake	45,288	44,549	98	-739	-2	782	2
Granbury, Lake	132,949	131,403	99	970	1	1,774	1

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of lake or reservoir	Storage capacity	Storage at end-July 2021		Storage change from end-Jun 2021		Storage change from end-Jul 2020		
	(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)**	(%)	
<i>Continued</i>								
Granger Lake	51,822	51,822	100	0	0	1,825	4	
Grapevine Lake	163,064	162,011	99	-1,053	0	-1,053	0	
Greenbelt Lake	59,968	11,580	19	589	1	6	0	
*Halbert, Lake	6,033	5,351	89	137	2	66	1	
Hords Creek Lake	8,109	3,920	48	-106	-1	-1,496	-18	
Houston County Lake	17,113	17,113	100	0	0	219	1	
Houston, Lake	130,147	130,147	100	0	0	11,556	9	
Hubbard Creek Reservoir	313,298	308,303	98	-4,681	-1	24,072	8	
Hubert H Moss Lake	24,058	23,810	99	-248	-1	0	0	
Inks, Lake	13,962	12,847	92	-23	0	-143	-1	
J. B. Thomas, Lake	199,931	95,846	48	24,077	12	55,572	28	
Jacksonville, Lake	25,670	25,670	100	0	0	128	0	
Jim Chapman Lake (Cooper)	260,332	259,442	100	-890	0	16,814	6	
Joe Pool Lake	175,800	175,800	100	0	0	1,993	1	
Kemp, Lake	245,307	245,307	100	0	0	18,453	8	
Kickapoo, Lake	86,345	76,267	88	-1,704	-2	-3,373	-4	
Lavon Lake	406,388	399,620	98	-6,768	-2	18,094	4	
Leon, Lake	27,762	26,774	96	-552	-2	2,398	9	
Lewisville Lake	563,228	563,228	100	0	0	11,551	2	
Limestone, Lake	203,780	203,780	100	0	0	5,058	2	
*Livingston, Lake	1,741,867	1,741,867	100	0	0	0	0	
*Lost Creek Reservoir	11,950	11,732	98	-146	-1	9	0	
Lyndon B Johnson, Lake	115,249	111,187	96	1,160	1	0	0	
Mackenzie Reservoir	46,450	3,992	9	-2	0	-672	-1	
Marble Falls, Lake	6,901	6,814	99	-27	0	-49	0	
Martin, Lake	75,726	74,346	98	98	0	685	1	
Medina Lake	254,823	87,621	34	943	0	-62,586	-25	
Meredith, Lake	500,000	193,575	39	13,165	3	-2,505	0	
Millers Creek Reservoir	26,768	26,768	100	0	0	110	0	
*Mineral Wells, Lake	5,273	5,111	97	-162	-3	9	0	
Monticello, Lake	34,740	29,413	85	-270	0	0	0	
Mountain Creek, Lake	22,850	22,850	100	0	0	0	0	
Murvaul, Lake	38,285	38,148	100	-137	0	-34	0	
Nacogdoches, Lake	39,522	38,419	97	-300	0	1,056	3	
Nasworthy	9,615	7,926	82	-790	-4	-343	-4	
Navarro Mills Lake	49,827	49,827	100	0	0	0	0	
New Terrell City Lake	8,583	8,583	100	0	0	232	3	
Nocona, Lake (Farmers Crk)	21,444	21,297	99	-147	0	-81	0	
North Fork Buffalo Creek Reservoir	15,400	15,111	98	-289	-2	349	2	
O' the Pines, Lake	268,566	268,566	100	0	0	0	0	
O. C. Fisher Lake	115,742	6,015	5	-160	0	-2,744	-2	
*O. H. Ivie Reservoir	554,340	323,311	58	-1,877	0	-45,321	-8	
Oak Creek Reservoir	39,210	30,937	79	1,591	4	-1,688	-4	

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Name of lake or reservoir	Storage capacity		Storage at end-July 2021		Storage change from end-Jun 2021		Storage change from end-Jul 2020	
	(acre-feet)		(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)**	(%)
<i>Continued</i>								
Palestine, Lake	367,303		367,303	100	0	0	1,845	1
Palo Duro Reservoir	61,066		991	2	351	1	-808	-1
Palo Pinto, Lake	26,766		26,224	98	-542	-2	2,717	10
Pat Cleburne, Lake	26,008		25,587	98	-421	-2	388	1
*Pat Mayse Lake	113,683		113,402	100	-281	0	2,468	2
Possum Kingdom Lake	538,139		538,139	100	3,217	1	14,183	3
Proctor Lake	54,762		54,762	100	0	0	11,857	22
Ray Hubbard, Lake	439,559		435,809	99	-3,123	0	10,251	2
Ray Roberts, Lake	788,167		788,167	100	0	0	3,965	1
Red Bluff Reservoir	151,110		no data		no data		no data	
Richland-Chambers Reservoir	1,087,839		1,087,839	100	0	0	0	0
Sam Rayburn Reservoir	2,857,077		2,857,077	100	0	0	168,039	6
Somerville Lake	150,293		150,293	100	0	0	8,852	6
Squaw Creek, Lake	151,250		151,250	100	0	0	0	0
Stamford, Lake	51,570		51,570	100	0	0	0	0
Stillhouse Hollow Lake	227,771		227,771	100	0	0	9,090	4
Striker, Lake	16,934		16,934	100	0	0	0	0
Sweetwater, Lake	12,267		10,812	88	619	5	-233	-2
*Sulphur Springs, Lake	17,747		15,439	87	-1,451	-8	-594	-3
Tawakoni, Lake	871,685		869,097	100	-2,588	0	16,859	2
Texana, Lake	159,566		159,474	100	1,651	1	-92	0
Texoma, Lake (Texas & Oklahoma)	2,487,601		2,844,956	100	174,732	7	285,863	11
Texoma, Lake (Texas)	1,243,801		1,243,801	100	0	0	0	0
Toledo Bend Reservoir (Texas & Louisiana)	4,472,900		4,171,194	93	-216,398	-5	-6,507	0
Toledo Bend Reservoir (Texas)	2,236,450		2,083,547	93	-108,199	-5	-3,253	0
Travis, Lake	1,113,348		859,011	77	3,435	0	3,902	0
Twin Buttes Reservoir	182,454		91,269	50	-1,455	0	-16,789	-9
Tyler, Lake	72,073		72,073	100	0	0	1,078	1
Waco, Lake	189,418		189,418	100	0	0	5,545	3
Waxahachie, Lake	10,780		10,524	98	-256	-2	834	8
Weatherford, Lake	17,812		16,996	95	-480	-3	275	2
White River Lake	29,880		7,885	26	266	1	2,810	9
Whitney, Lake	553,344		533,816	96	-14,537	-3	17,030	3
Worth, Lake	24,419		21,117	86	-1,637	-7	495	2
Wright Patman Lake	231,496		231,496	100	0	0	0	0
STATEWIDE TOTAL								
STATEWIDE TOTAL	31,257,639		26,675,414	85	684,726	2	1,190,869	4

*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 to much above normal streamflow in July 2021. Above normal streamflow (76–90th percentile, light blue shading in Figure 6) was seen in the Canadian, Upper and Lower Red, Sulphur, Cypress, Sabine, Neches, Trinity, Brazos, Colorado, Trinity-San Jacinto, San Jacinto, San Jacinto-Brazos, San Antonio, and Nueces river basins.

Much above normal streamflow (> 90 percentile, dark blue shading in Figure 6) was seen in the Canadian, Red, Brazos, Upper Colorado, Lower Trinity, Neches, Neches-Trinity, San Jacinto, San Jacinto-Brazos, Brazos-Colorado, Lavaca, Colorado-Lavaca, Lavaca-Guadalupe, San Antonio-Nueces, Guadalupe, San Antonio, Nueces, and Nueces-Rio Grande river basins

Below normal streamflow (10–24th percentile, orange shading in Figure 6) was recorded in the Mid and Lower Colorado river basin. The Pecos river basin had much below normal streamflow (< 10th percentile, dark red shading in Figure 6).

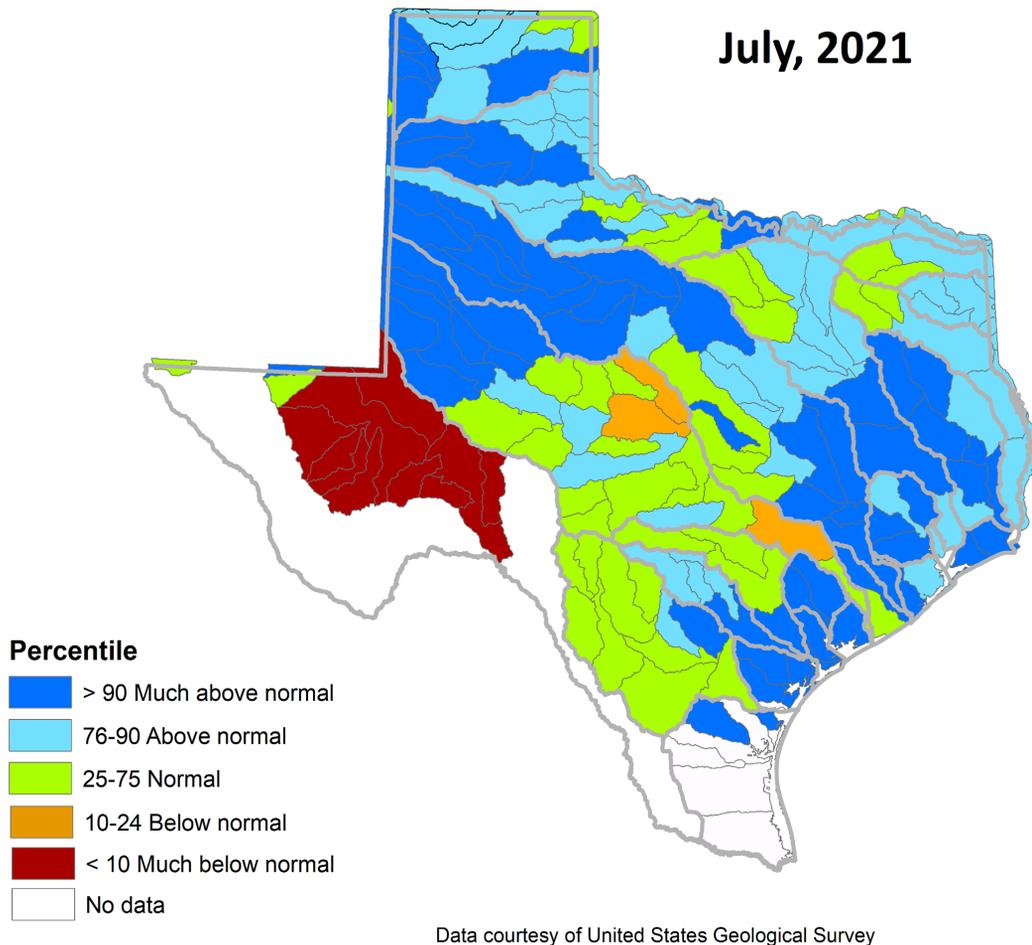


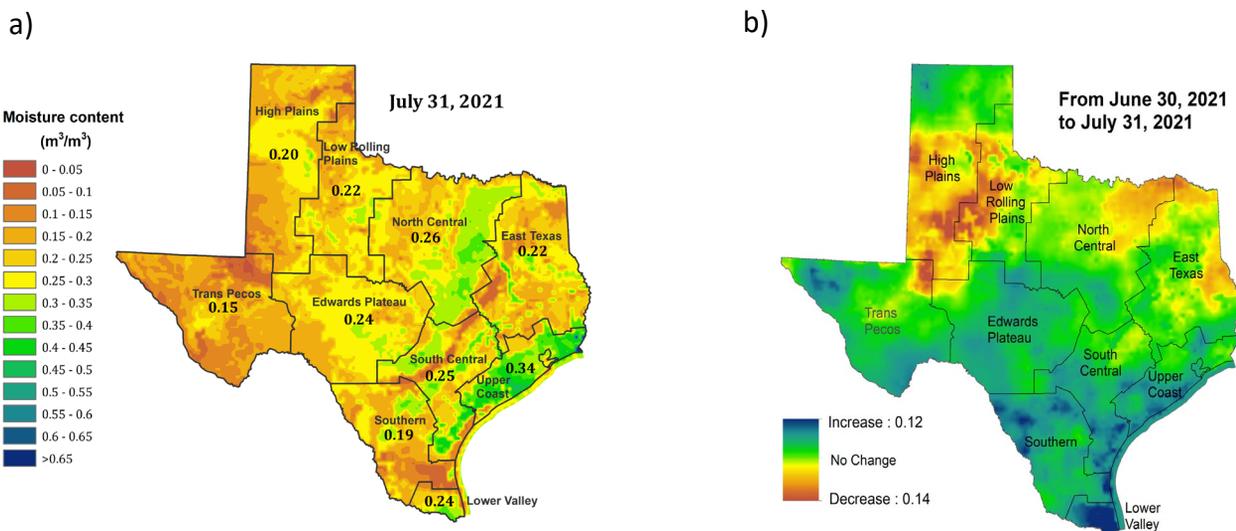
Figure 6: Runoff percentiles by the U.S. Geological Survey’s Hydrologic Unit Code

SOIL MOISTURE

Root zone soil moisture at the end of July 2021 [Figure 7(a)] was moderate [> 0.20 cubic meters of water per bulk cubic meter soil (m^3/m^3)] in much of the state. 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 the Trans Pecos, High Plains, Low Rolling Plains, eastern Edwards Plateau, Southern, portions of North Central, East Texas, southern South Central and 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 portions of eastern High Plains, central Low Rolling Plains, eastern Edwards Plateau, portions of Southern, Lower Valley, eastern North Central, portions of East Texas, portions of South Central, and much of the Upper Coast climate divisions [Figure 7(a)].

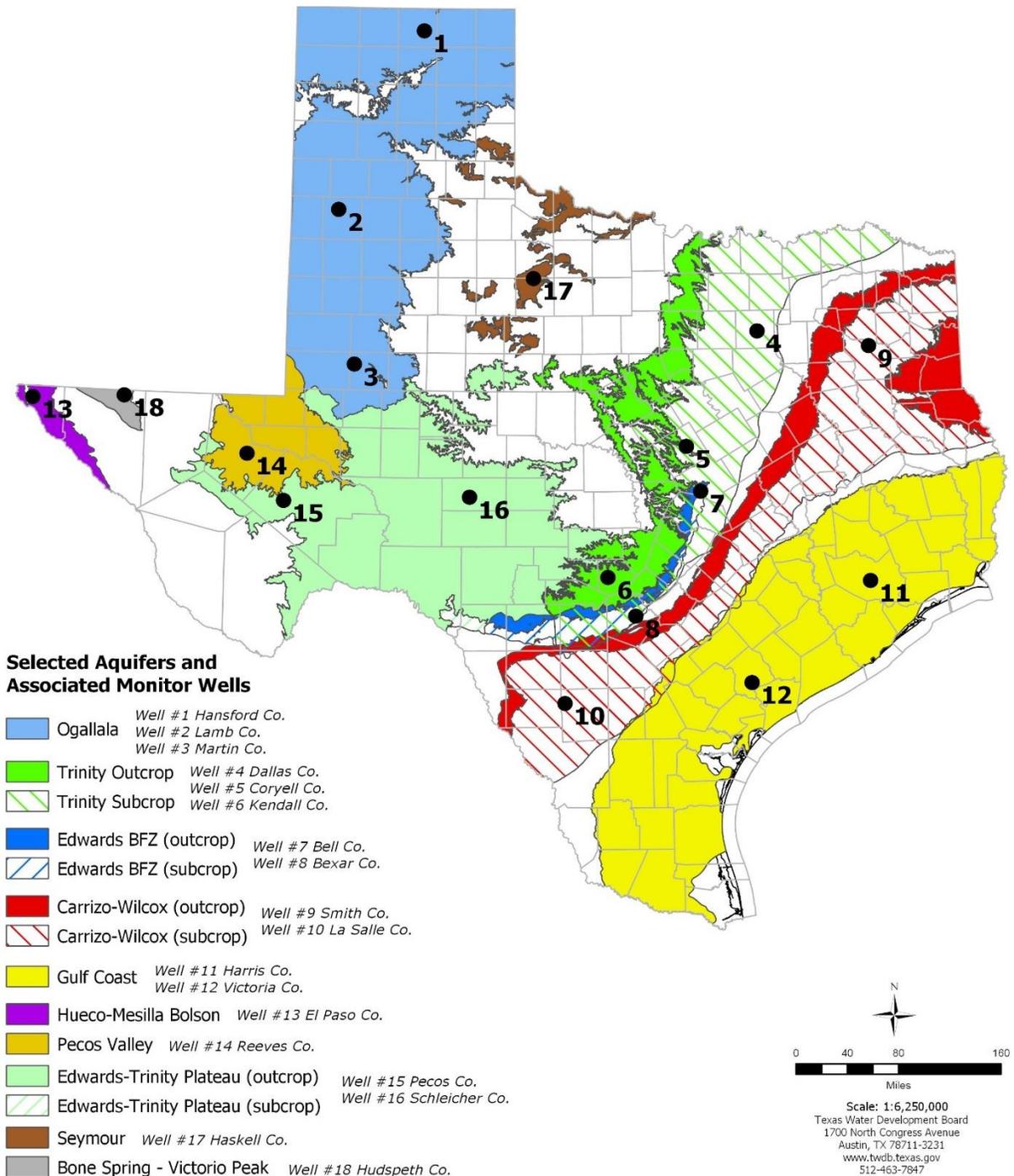
Compared to conditions at the end of June 2021, soil moisture content increased [green to blue shading in Figure 7(b)] in much of the Trans Pecos, northern High Plains, portions of Low Rolling Plains, Edwards Plateau, Southern, South Central, Lower Valley, North Central, East Texas, and Upper Coast climate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



July 2021 GROUNDWATER LEVELS IN MONITORING WELLS

Water-level measurements were available for 15 key monitoring wells in the state. Recorders in 3 wells (#1, #17, and #18 on map) were temporarily offline and scheduled for repair. Water levels rose in 8 monitoring wells since the beginning of July, ranging from an increase of 0.16 feet in the Martin County Ogallala Aquifer well (#3 on map) to 5.94 feet in the Bell County Edwards (Balcones Fault Zone) Aquifer well (#7 on map). Water levels declined in 6 monitoring wells, ranging from a decline of -0.02 feet in the Coryell County Trinity Aquifer well (#5 on map) to -10.39 feet in the La Salle County Carrizo-Wilcox Aquifer well (#10 on map). The J-17 well (#8 on map) in San Antonio recorded a water level of 64.40 feet below land surface or 666.60 feet above mean sea level. Water levels are 6.60 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	July (depth to water, feet)	June (depth to water, feet)	Month Change	Year Change	Historical Change*	First Measured (year)
(1) Hansford 0354301	NA	NA	NA	NA	NA	1951
(2) Lamb 1053602	152.10	152.07	-0.03	NA	-123.93	1951
(3) Martin 2739903	144.34	144.50	0.16	-0.39	-39.45	1964
(4) Dallas 3319101	485.45	485.62	0.17	2.87	-263.45	1954
(5) Coryell 4035404	531.77	531.75	-0.02	-0.40	-239.77	1955**
(6) Kendall 6802609	143.07	146.21	3.14	13.61	-83.07	1975
(7) Bell 5804816	122.55	128.49	5.94	2.06	0.96	2008
(8) Bexar 6837203	64.40	69.80	5.40	10.30	-17.76	1932
(9) Smith 3430907	437.02	436.23	-0.79	-1.73	-137.02	1977**
(10) La Salle 7738103	497.24	486.85	-10.39	12.99	-244.17	2003
(11) Harris 6514409	185.89	186.23	0.34	3.39	-50.39*	1947**
(12) Victoria 8017502	32.46	31.94	-0.52	-0.38	1.54	1958**
(13) El Paso 4913301	297.74	298.82	1.08	-1.94	-65.84	1964**
(14) Reeves 4644501	159.22	NA	NA	6.47	-67.13	1952
(15) Pecos 5216802	220.18	215.64	-4.54	-1.60	26.70	1976
(16) Schleicher 5512134	277.48	279.28	1.80	16.18	24.42	2003
(17) Haskell 2135748	NA	NA	NA	NA	-1.08	2002
(18) Hudspeth 4807516	NA	154.71	NA	NA	-50.79	1966

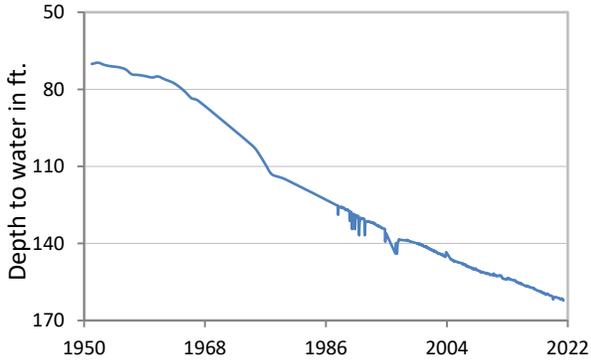
* Change since the original measurement taken on the date indicated in the last column. The historical changes shown for recorder wells #1, #17, and #18 are based off the most recent water level records from May, April, and June 2021, respectively.

** Measurement not shown on the hydrograph.

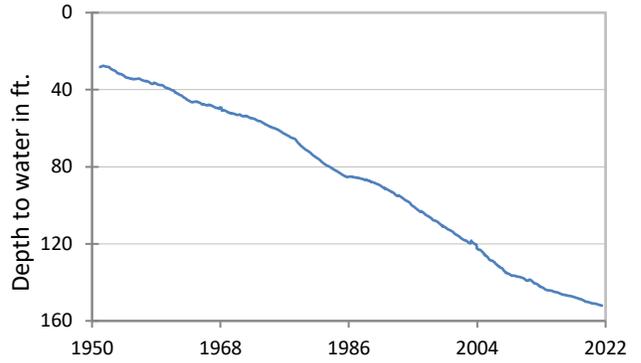
NA (not available)

July 2021 MONITORING WELL HYDROGRAPHS

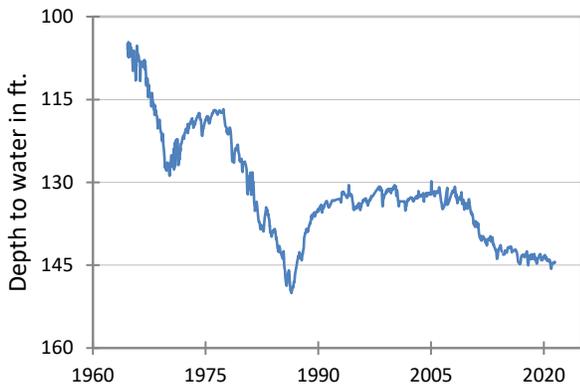
***(1) State Well #03-54-301
Near Spearman, Hansford County
Ogallala Aquifer**



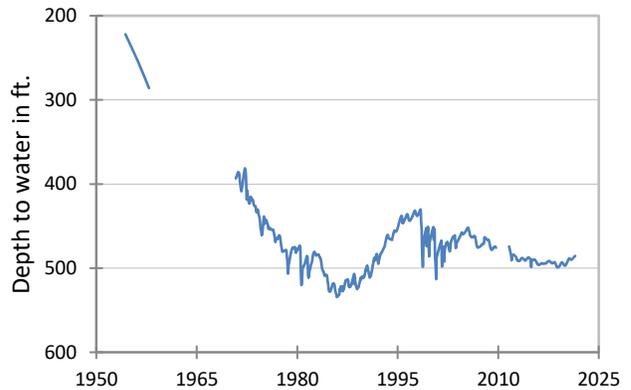
**(2) State Well #10-53-602
Near Earth, Lamb County
Ogallala Aquifer**



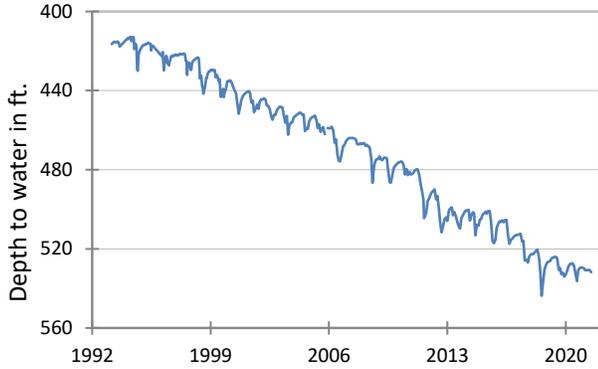
**(3) State Well #27-39-903
Northwest Martin County
Ogallala Aquifer**



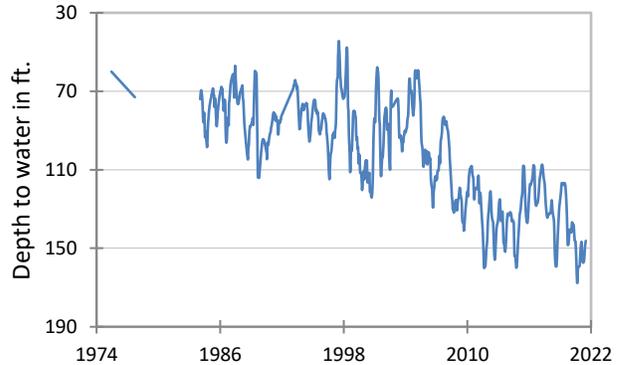
**(4) State Well #33-19-101
Southeast Dallas, Dallas County
Twin Mountains Formation-Trinity Aquifer**



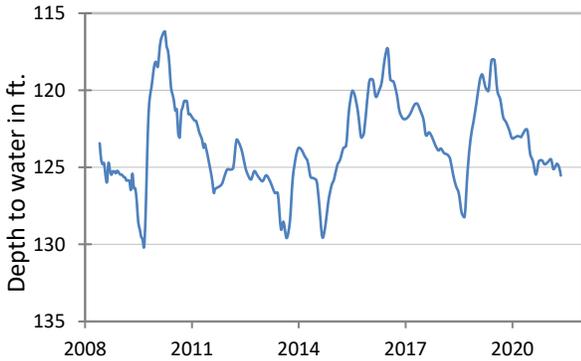
(5) State Well #40-35-404
Gatesville, Coryell County
Hosston Formation-Trinity Aquifer



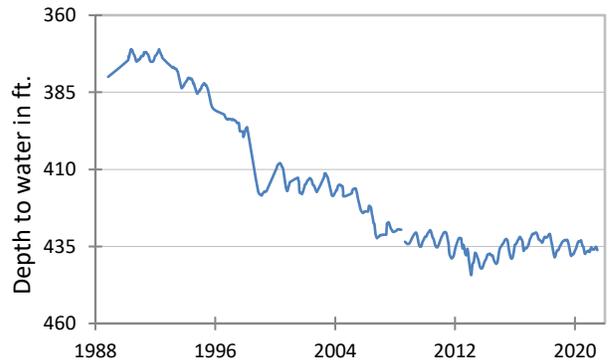
(6) State Well #68-02-609
Waring, Kendall County
Travis Peak Formation-Trinity Aquifer



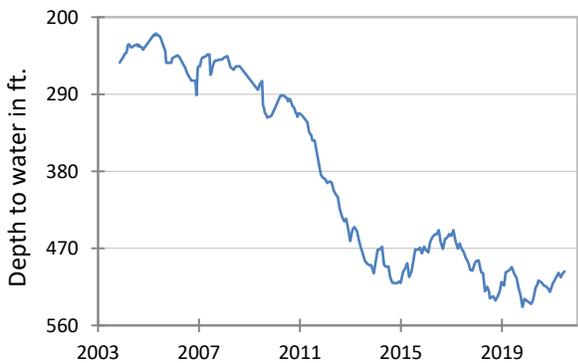
(7) State Well #58-04-816
Near Salado, Bell County
Edwards (Balcones Fault Zone) Aquifer



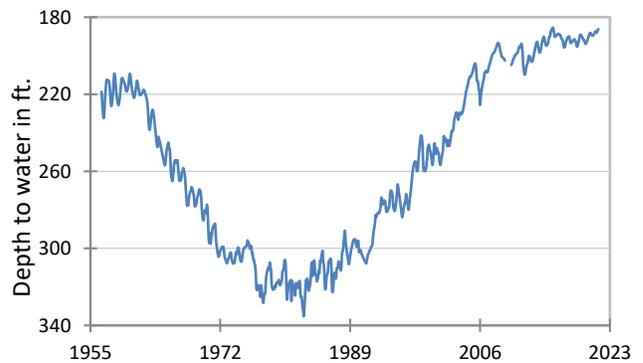
(9) State Well #34-30-907
Red Springs, Smith County
Carrizo-Wilcox Aquifer



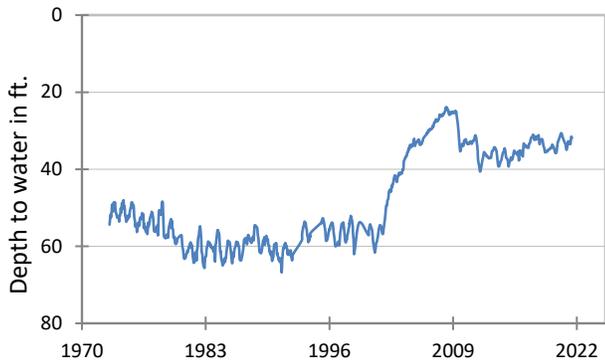
(10) State Well #77-38-103
Near Cotulla, La Salle County
Carrizo-Wilcox Aquifer



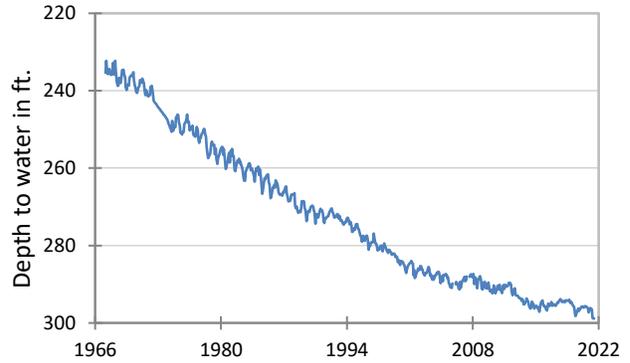
(11) State Well #65-14-409
North Houston, Harris County
Evangeline Formation-Gulf Coast Aquifer



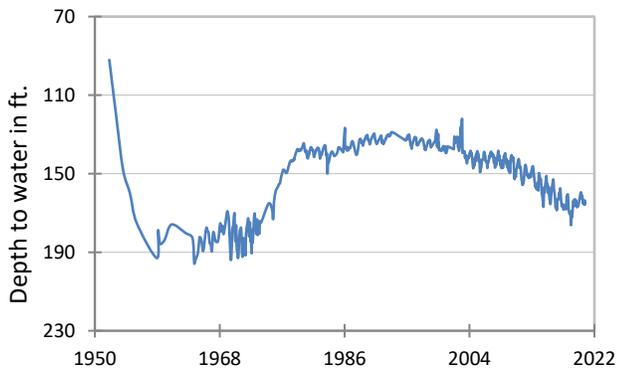
(12) State Well #80-17-502
Near Bloomington, Victoria County
Lissie Formation-Gulf Coast Aquifer



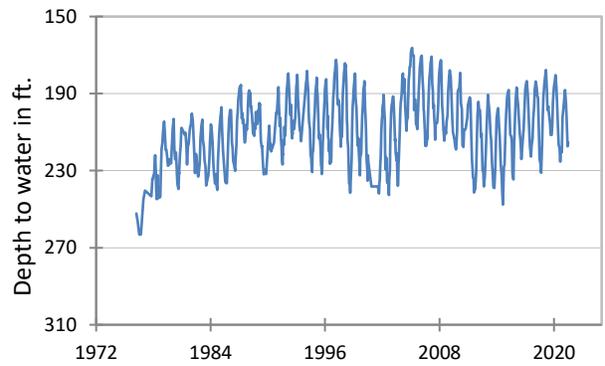
(13) State Well #49-13-301
El Paso, El Paso County
Hueco-Mesilla Bolsons Aquifer



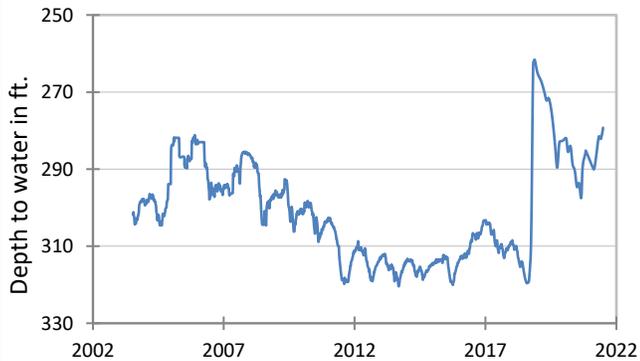
(14) State Well #46-44-501
Near Pecos, Reeves County
Pecos Valley Aquifer



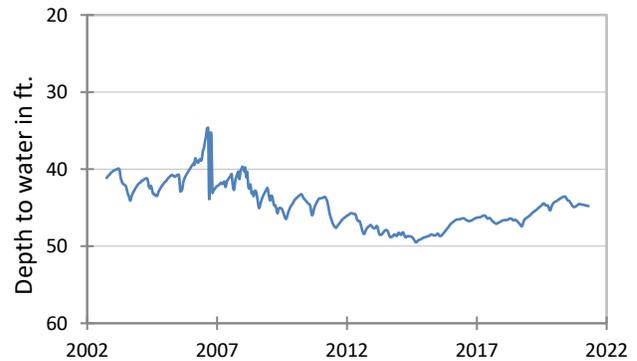
(15) State Well #52-16-802
Fort Stockton, Pecos County
Edwards-Trinity (Plateau) Aquifer



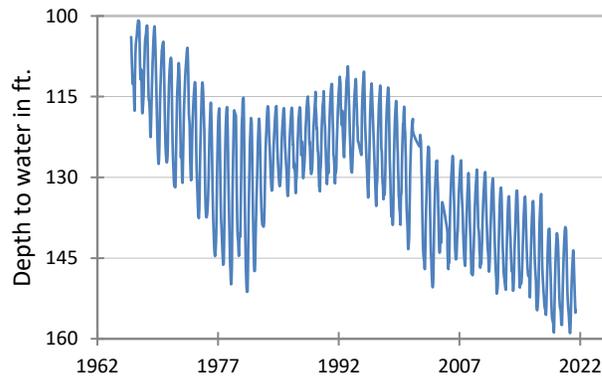
(16) State Well #55-12-134
Eldorado, Schleicher County
Edwards-Trinity (Plateau) Aquifer



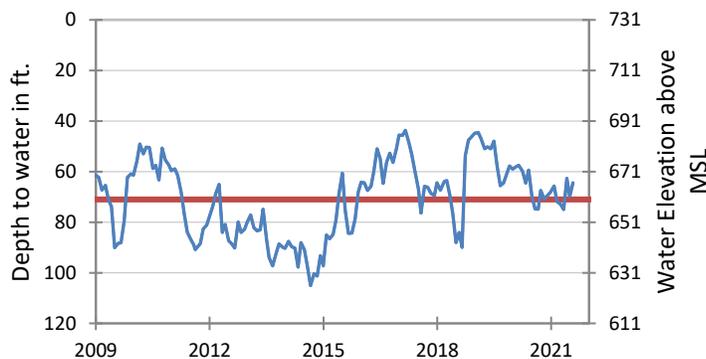
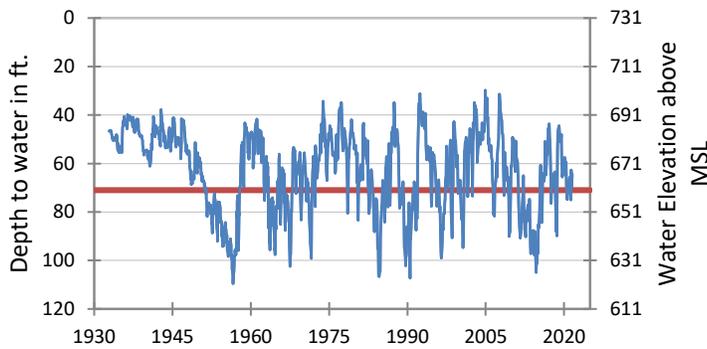
***(17) State Well #21-35-748**
Near O'Brien, Haskell County
Seymour Aquifer



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



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

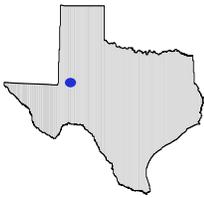


The late July water-level measurement in this Edwards (Balcones Fault Zone) Aquifer well, located at an elevation of 731 feet above mean sea level, was 64.40 feet below land surface, or 666.60 feet above mean sea level. This was 5.40 feet above last month's measurement, 10.30 feet above last year's measurement and 17.76 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 July 2021, Stage 1 drought restrictions were not in effect because the aquifer remained 6.60 feet above the Stage 1 critical management level.

*Recorder wells #1, #17, and #18 were temporarily offline in July 2021 and did not record data.

HYDROGRAPH OF THE MONTH

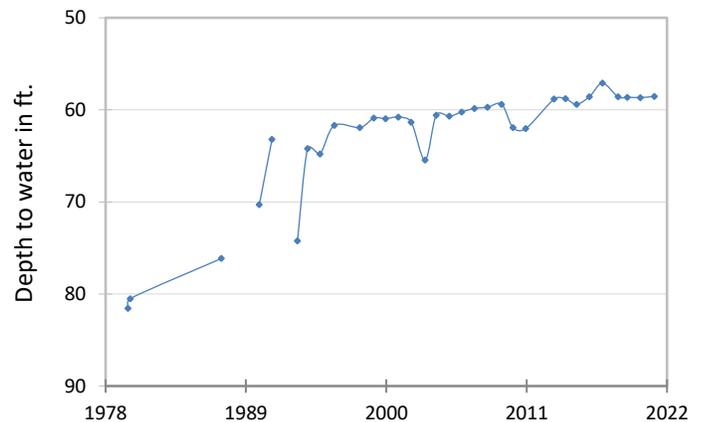


Each month this space features a new hydrograph (marked with the ● symbol on the map) depicting different aquifers and their conditions in Texas.

The 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 Aquifer

Well #27-51-902, 132 feet deep
unused, Andrews County



The initial measurement of 81.56 feet below land surface was recorded by the Texas Water Development Board in October of 1979. Since then, the TWDB has continued to take near-annual measurements in the unused well. The period of record reveals an overall increase in water level. From 1979 to 1995, the water level increased nearly 20 feet. A distinct decline in water level in 1993 may be the result of nearby pumping. From 1995 to present, water levels become steadier and gradually increase at a rate roughly equal to 0.12 ft/year.



Far away (left), and close-up (right) images of well #27-51-902.