Texas Water Conditions Report

Hamilton Pool, Planetware.com

August 2022

Water News:

The rain that was received at the end of August contributed to some improvements across the state, but reservoirs were still showing the impacts of drought. See page 3 for more details.

RAINFALL

Some rainfall [light blue and dark blue shading, Figure 1(a)] was recorded across the state in all climate divisions, with accumulations reaching 18.82 inches.

Little to no rain [yellow, orange, and red shading, Figure 1(a)] was seen in the northern and southern High Plains, areas of the Low Rolling Plains, Trans Pecos, Edwards Plateau, North Central, northern South Central, western Southern, portions of the Lower Valley, and central and northern East Texas this month.

Compared to historical data from 1991–2020, much of the state received above average rainfall [green shading, Figure 1(b)]. Areas of central and southern High Plains, Low Rolling Plains, Trans Pecos, Edwards Plateau, Southern, South Central, North Central, East Texas, and the Upper Coast climate divisions received 200–400 percent of normal rainfall [light blue, dark blue shading, Figure 1(b)]. Portions of Trans Pecos, southern and eastern Edwards Plateau, eastern North Central, northern East Texas, central Upper Coast, southern South Central, northern Lower Valley, and much of the Southern climate divisions received 400–800 percent of normal rainfall [(light pink and dark pink shading, Figure 1 (b)].

Below normal rainfall [(yellow and orange shading, Figure 1(b)] was recorded in areas of the northern and portions of the southern High Plains, southwestern Trans Pecos, northern Edwards Plateau, parts of northern South Central, North Central, and the southern end of the Lower Valley climate divisions.

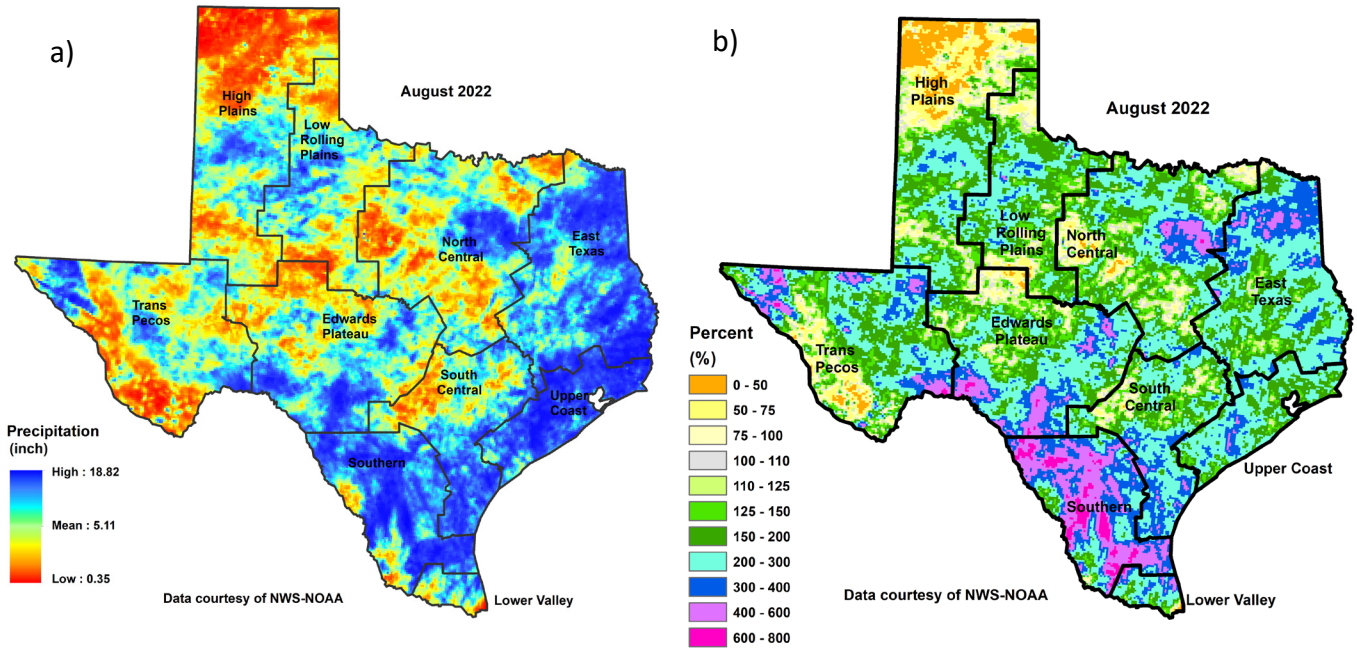
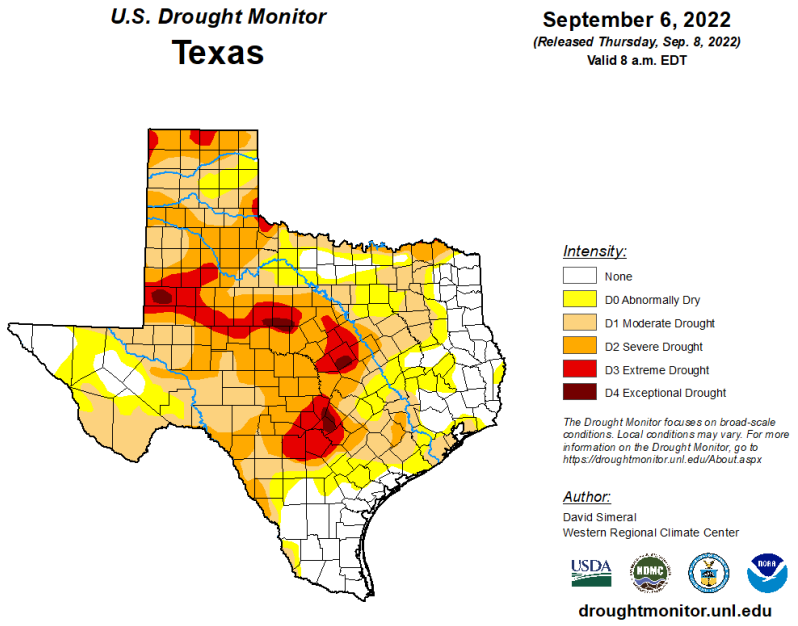


Figure 1: (a) Monthly accumulated rainfall and (b) Percent of normal rainfall

DROUGHT

79.4% of the state was in drought leading into September, that is an improvement of 19.8% from August 2 (**Figure 2**).



Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
2022-09-06	20.57	79.43	62.32	33.57	9.26	0.90

Figure 2. The extent of drought in Texas according to the U.S. Drought Monitor map as of Sept 6, 2022.

RESERVOIR STORAGE

The much-needed rain that was received at the end of August contributed to some improvements across the state, but reservoirs were still showing the impacts of drought. Out of 119 monitored reservoirs in the state, 7 reservoirs held 100 percent of conservation storage capacity (Figure 3). Additionally, 23 were at or above 90 percent full. Eight reservoirs remained below 30 percent full: E.V. Spence (19.7 percent full), O. C. Fisher (3.7 percent full), J.B. Thomas (28.0 percent full), Falcon (12.2 percent full), Greenbelt (13.6 percent full), Mackenzie (6.6 percent full, Medina Lake (8.0 percent full), Palo Duro Reservoir (0.5 percent full), and the White River Lake (13.8 percent full). Elephant Butte Reservoir (New Mexico) was 4.8 percent full (**Figure 3**).

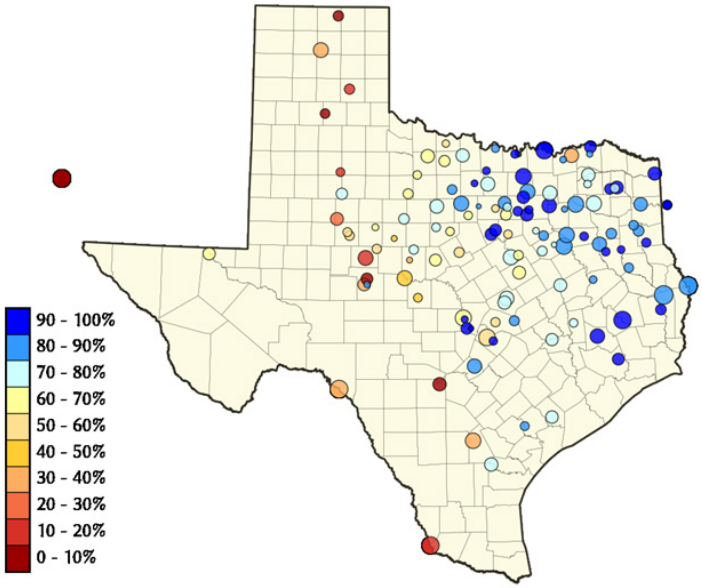


Figure 3. Reservoir conservation storage at end-August expressed as percent full (%)

Reservoir conservation storage by climate division was at or above normal (storage ≥70 percent full) in Figure 4(a)) for East Texas (87.7 percent full), North Central (84.3 percent full), and the Upper Coast (86.7 percent full) climate divisions. Conservation storage for the Low Rolling Plains (53.7 percent full), Edwards Plateau (41.9 percent full), and South Central (54.6 percent full) climate divisions was moderately low (Figure 4(a)). The High Plains (26.5 percent full) and Southern (24.8 percent full) climate divisions had severely low conservation storage (Figure 4(a)). The Trans Pecos (13.6 percent full) climate division had extremely low conservation storage (Figure 4(a)).

Combined conservation storage by river basin or sub-basin was normal to high (>70 percent full, Figure 4(b)) in the Lower Red, Sulphur, Cypress, Upper and Lower Sabine, Upper and Lower Trinity, Upper and Lower Brazos, Neches, San Jacinto, Guadalupe, and Lavaca river basins. The Lower Colorado, Upper Red and Nueces river basins had moderately low conservation storage (40–60 percent full, Figure 4(b)). The Canadian, Upper Colorado, and Lower Rio Grande river basins had severely low conservation storage (20–40 percent full, Figure 4(b)). The Upper/Mid Rio Grande river basin had extremely low conservation storage (10–20 percent full, Figure 4(b)) and the San Antonio river basin had exceptionally low conservation storage (< 10 percent full, Figure 4(b)).

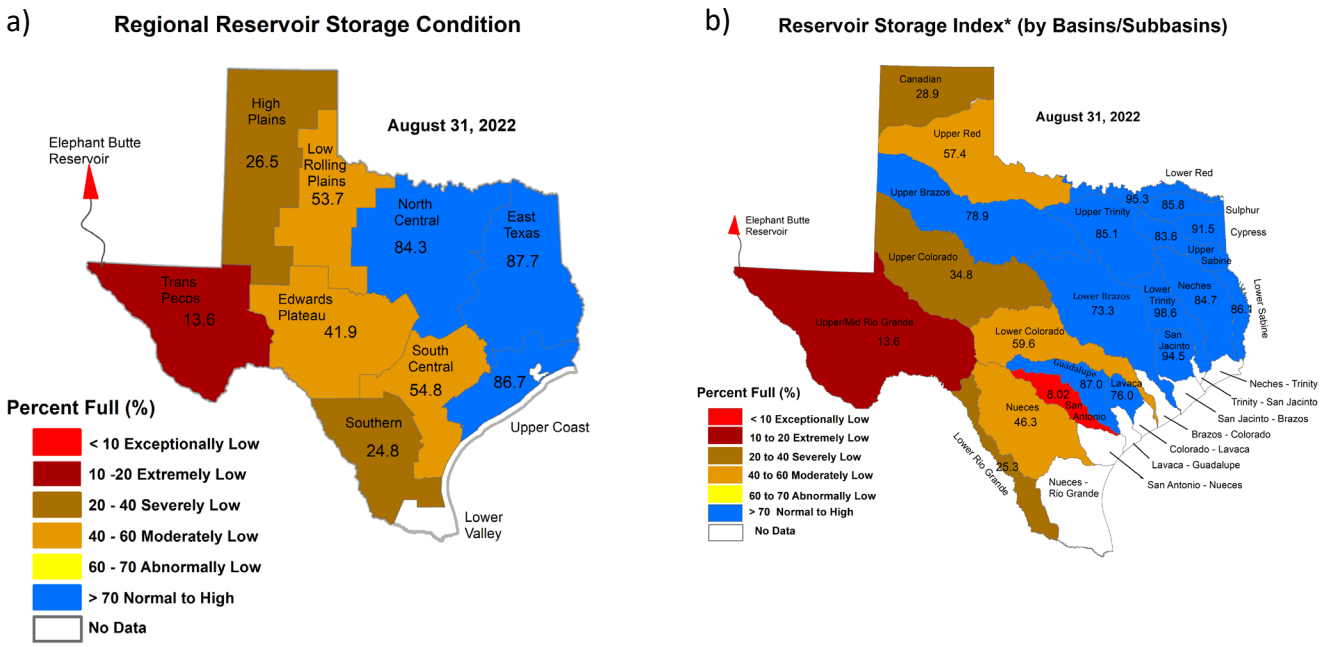


Figure 4: (a) Reservoir Storage Index* by climate, and (b) Reservoir Storage Index* by basin/sub-basin.

*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 2022		Storage change from end-Jul 2022		Storage change from end-Aug 2021	
	(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)**	(%)
Abilene, Lake	7,900	3,449	43.7	-323	-4.1	-3,903	-49.4
Alan Henry Reservoir	96,207	74,255	77.2	-157	0.0	-19,981	-20.8
*Amistad Reservoir (Texas & Mexico)	3,275,532	904,699	27.6	149,392	4.6	-251,220	-7.7
*Amistad Reservoir (Texas)	1,840,849	671,169	36.5	78,107	4.2	-305,468	-16.6
Amon G Carter, Lake	19,266	17,708	91.9	-251	-1.3	-1,558	-8.1
Aquilla Lake	43,243	29,409	68.0	-558	-0.2	-13,372	-30.9
Arlington, Lake	40,157	40,157	100.0	8,556	21.3	3,365	8.4
Arrowhead, Lake	230,359	167,999	72.9	-4,508	-2.0	-49,936	-21.7
Athens, Lake	29,503	27,601	93.6	190	0.6	-1,902	-6.4
*Austin, Lake	23,972	22,803	95.1	46	0.2	-123	0.0
B A Steinhagen Lake	69,186	65,364	94.5	394	0.6	-397	0.0
Bardwell Lake	46,122	40,822	88.5	1,869	4.1	-5,300	-11.5
Belton Lake	435,225	336,642	77.3	-13,380	-3.1	-97,007	-22.3
Benbrook Lake	85,648	57,801	67.5	-4,216	-4.9	-15,823	-18.5
Bob Sandlin, Lake	192,417	182,758	95.0	3,282	1.7	-4,361	-2.3
Bois d'Arc Lake	367,609	139,335	37.9	-1,179	0.0	no data	
Bonham, Lake	11,027	9,304	84.4	-49	0.0	-186	-1.7
Brady Creek Reservoir	28,808	12,864	44.7	-331	-1.1	-5,007	-17.4
Bridgeport, Lake	366,236	289,374	79.0	-14,440	-3.9	-76,862	-21.0
*Brownwood, Lake	130,868	88,496	67.6	-5,018	-3.8	-42,372	-32.4
Buchanan, Lake	816,904	533,818	65.3	-21,874	-2.7	-246,654	-30.2
Caddo, Lake	29,898	29,898	100.0	1,937	6.5	29,898	0
Canyon Lake	378,781	329,511	87.0	-10,228	-2.7	-28,086	-7.4
Cedar Creek Reservoir in Trinity	644,686	541,912	84.1	20,772	3.2	-97,551	-15.1
Champion Creek Reservoir	41,580	24,922	59.9	-518	-1.2	-6,322	-15.2
Cherokee, Lake	40,094	34,942	87.2	65	0.2	-5,152	-12.8
Choke Canyon Reservoir	662,820	228,298	34.4	135	0.0	-93,848	-14.2
*Cisco, Lake	29,003	21,800	75.2	-631	-2.2	-5,318	-18.3
Coleman, Lake	38,075	29,609	77.8	-853	-2.2	-8,466	-22.2
Colorado City, Lake	31,040	27,255	87.8	2,242	7.2	-3,691	-11.9
*Coleto Creek Reservoir	30,758	17,824	57.9	-661	-2.1	-7,030	-22.9
Conroe, Lake	410,988	381,288	92.8	-3,136	0.0	-10,569	-2.6
Corpus Christi, Lake	256,062	197,877	77.3	80,401	31.4	-34,342	-13.4
Crook, Lake	9,195	7,758	84.4	-384	-4.2	-639	-6.9
Cypress Springs, Lake	66,756	60,650	90.9	2,214	3.3	-4,498	-6.7
E. V. Spence Reservoir	517,272	101,938	19.7	-4,313	0.0	-41,358	-8.0
Eagle Mountain Lake	179,880	148,512	82.6	4,629	2.6	-29,306	-16.3
Elephant Butte Reservoir (Texas)	852,491	40,625	4.8	4,552	0.5	-4,423	0.0
Elephant Butte Reservoir (Total Storage)	1,960,900	94,039	4.8	10,538	0.5	-10,238	0.0
*Falcon Reservoir (Texas & Mexico)	2,646,817	357,024	13.5	55,879	2.1	-125,195	-4.7
*Falcon Reservoir (Texas)	1,551,007	188,497	12.2	29,821	1.9	-178,647	-11.5
Fork Reservoir, Lake	605,061	469,595	77.6	34,016	5.6	-108,972	-18.0
Fort Phantom Hill, Lake	70,030	49,065	70.1	-1,853	-2.6	-20,965	-29.9
Georgetown, Lake	36,823	20,474	55.6	-1,098	-3.0	-8,195	-22.3
Gibbons Creek Reservoir	25,721	19,316	75.1	-408	-1.6	-797	-3.1
Graham, Lake	45,288	38,173	84.3	-1,258	-2.8	-4,579	-10.1
Granbury, Lake	132,949	119,735	90.1	2,252	1.7	-12,317	-9.3

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS							
Name of lake or reservoir	Storage capacity	Storage at end-August 2022		Storage change from end-Jul 2022		Storage change from end-Aug 2021	
	(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)**	(%)
Continued							
Granger Lake	51,822	44,582	86.0	-374	0.0	-7,240	-14.0
Grapevine Lake	163,064	161,880	99.3	5,481	3.4	-1,184	0.0
Greenbelt Lake	59,968	8,134	13.6	-257	0.0	-3,136	-5.2
*Halbert, Lake	6,033	4,619	76.6	-73	-1.2	-557	-9.2
Hords Creek Lake	8,109	2,666	32.9	-45	0.0	-1,155	-14.2
Houston County Lake	17,113	15,102	88.2	-307	-1.8	-1,998	-11.7
Houston, Lake	130,147	130,147	100.0	6,016	4.6	0	0.0
Hubbard Creek Reservoir	313,298	229,282	73.2	-8,024	-2.6	-79,176	-25.3
Hubert H Moss Lake	24,058	22,153	92.1	-469	-1.9	-1,293	-5.4
Inks, Lake	13,962	12,832	91.9	-120	0.0	-188	-1.3
J. B. Thomas, Lake	199,931	56,026	28.0	-2,331	-1.2	-36,402	-18.2
Jacksonville, Lake	25,670	23,830	92.8	-470	-1.8	-1,805	-7.0
Jim Chapman Lake (Cooper)	260,332	193,060	74.2	-6,920	-2.7	-57,617	-22.1
Joe Pool Lake	175,800	166,476	94.7	11,710	6.7	-9,324	-5.3
Kemp, Lake	245,307	149,758	61.0	-5,101	-2.1	-95,549	-39.0
Kickapoo, Lake	86,345	55,749	64.6	-1,598	-1.9	-18,622	-21.6
Lavon Lake	406,388	320,154	78.8	-24,353	-6.0	-61,776	-15.2
Leon, Lake	27,762	18,390	66.2	-597	-2.2	-8,214	-29.6
Lewisville Lake	563,228	481,567	85.5	-30,494	-5.4	-81,661	-14.5
Limestone, Lake	203,780	156,826	77.0	-10,219	-5.0	-42,141	-20.7
*Livingston, Lake	1,741,867	1,720,581	98.8	101,888	5.8	-21,286	-1.2
*Lost Creek Reservoir	11,950	10,963	91.7	-100	0.0	-953	-8.0
Lyndon B Johnson, Lake	115,249	111,494	96.7	246	0.2	491	0.4
Mackenzie Reservoir	46,450	3,081	6.6	52	0.1	-805	-1.7
Marble Falls, Lake	6,901	6,847	99.2	43	0.6	-22	0.0
Martin, Lake	75,726	64,360	85.0	-1,455	-1.9	-8,815	-11.6
Medina Lake	254,823	20,472	8.0	-6,601	-2.6	-61,611	-24.2
Meredith, Lake	500,000	161,917	32.4	7,400	1.5	-28,102	-5.6
Millers Creek Reservoir	26,768	18,708	69.9	-859	-3.2	-8,060	-30.1
*Mineral Wells, Lake	5,273	4,485	85.1	-227	-4.3	-788	-14.9
Monticello, Lake	34,740	27,736	79.8	640	1.8	-881	-2.5
Mountain Creek, Lake	22,850	22,850	100.0	859	3.8	0	0.0
Murvaul, Lake	38,285	38,285	100.0	2,842	7.4	0	0.0
Nacogdoches, Lake	39,522	33,951	85.9	-550	-1.4	-3,980	-10.1
Nasworthy	9,615	8,282	86.1	37	0.4	197	2.0
Navarro Mills Lake	49,827	38,972	78.2	-1,815	-3.6	-10,151	-20.4
New Terrell City Lake	8,583	7,129	83.1	338	3.9	-1,351	-15.7
Nocona, Lake (Farmers Crk)	21,444	17,474	81.5	85	0.4	-3,344	-15.6
North Fork Buffalo Creek Reservoir	15,400	8,186	53.2	-370	-2.4	-6,162	-40.0
O' the Pines, Lake	268,566	241,539	89.9	12,181	4.5	-27,027	-10.1
O. C. Fisher Lake	115,742	4,245	3.7	-385	0.0	-3,925	-3.4
*O. H. Ivie Reservoir	554,340	236,872	42.7	-9,868	-1.8	-88,719	-16.0
Oak Creek Reservoir	39,210	20,962	53.5	-1,014	-2.6	-9,284	-23.7

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS							
Name of lake or reservoir	Storage capacity	Storage at end-August 2022		Storage change from end-Jul 2022		Storage change from end-Aug 2021	
	(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)**	(%)
Continued							
Palestine, Lake	367,303	325,433	88.6	-6,687	-1.8	-41,870	-11.4
Palo Duro Reservoir	61,066	276	0.5	1	0.0	-575	0.0
Palo Pinto, Lake	26,766	17,247	64.4	-1,790	-6.7	-9,302	-34.8
Pat Cleburne, Lake	26,008	14,888	57.2	-247	0.0	-9,632	-37.0
*Pat Mayse Lake	113,683	105,183	92.5	-2,254	-2.0	-5,863	-5.2
Possum Kingdom Lake	538,139	470,402	87.4	-10,652	-2.0	-67,737	-12.6
Proctor Lake	54,762	27,806	50.8	-3,667	-6.7	-26,956	-49.2
Ray Hubbard, Lake	439,559	401,645	91.4	3,972	0.9	-30,246	-6.9
Ray Roberts, Lake	788,167	749,911	95.1	-12,991	-1.6	-38,256	-4.9
Red Bluff Reservoir	151,110	96,015	63.5	618	0.4	-18,286	-12.1
Richland-Chambers Reservoir	1,087,839	915,325	84.1	-7,594	0.0	-152,904	-14.1
Sam Rayburn Reservoir	2,857,077	2,394,511	83.8	-51,296	-1.8	-403,106	-14.1
Somerville Lake	150,293	106,491	70.9	-17,829	-11.9	-43,802	-29.1
Squaw Creek, Lake	151,250	151,250	100.0	316	0.2	0	0.0
Stamford, Lake	51,570	35,455	68.8	-788	-1.5	-16,115	-31.2
Stillhouse Hollow Lake	227,771	178,284	78.3	-5,072	-2.2	-49,487	-21.7
Striker, Lake	16,934	15,473	91.4	187	1.1	-1,461	-8.6
Sweetwater, Lake	12,267	7,901	64.4	-272	-2.2	-2,693	-22.0
*Sulphur Springs, Lake	17,747	12,667	71.4	1,225	6.9	-1,242	-7.0
Tawakoni, Lake	871,685	757,405	86.9	1,369	0.2	-102,865	-11.8
Texana, Lake	159,566	121,306	76.0	974	0.6	-35,240	-22.1
Texoma, Lake (Texas & Oklahoma)	2,487,601	2,390,189	96.1	-54,963	-2.2	-74,327	-3.0
Texoma, Lake (Texas)	1,243,801	1,195,094	96.1	-27,482	-2.2	-37,164	-3.0
Toledo Bend Reservoir (Texas & Louisiana)	4,472,900	3,856,141	86.2	33,595	0.8	-79,770	-1.8
Toledo Bend Reservoir (Texas)	2,236,450	1,926,020	86.1	16,797	0.8	-39,886	-1.8
Travis, Lake	1,113,348	563,755	50.6	-29,212	-2.6	-278,355	-25.0
Twin Buttes Reservoir	182,454	58,540	32.1	-6,727	-3.7	-43,681	-23.9
Tyler, Lake	72,073	62,249	86.4	-2,162	-3.0	-9,824	-13.6
Waco, Lake	189,418	120,791	63.8	-6,598	-3.5	-68,627	-36.2
Waxahachie, Lake	10,780	8,468	78.6	187	1.7	-1,704	-15.8
Weatherford, Lake	17,812	10,470	58.8	96	0.5	-6,536	-36.7
White River Lake	29,880	4,128	13.8	12	0.0	-3,324	-11.1
Whitney, Lake	553,344	411,849	74.4	-2,070	0.0	-122,631	-22.2
Worth, Lake	24,419	19,574	80.2	2,940	12.0	-1,345	-5.5
Wright Patman Lake	231,496	231,496	100.0	0	0.0	0	0.0
STATEWIDE TOTAL							
STATEWIDE TOTAL	**32,628,849**	**22,540,534**	**69.1**	**52,539**	**0.2**	**-4,066,249**	**-12.5**

*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 the last month or last year, respectively.

STREAMFLOW CONDITIONS

Normal streamflow (25–75th percentile, green shading, Figure 5) was recorded in northern, eastern, and parts of southern and central Texas this month. Above normal (76–90th percentile, light blue shading, Figure 5) streamflow was seen in the Upper and Lower Brazos, Sulphur, Cypress, Upper and Lower Sabine, Neches, Upper Trinity, San Jacinto, San Jacinto-Brazos, Brazos-Colorado, San Antonio-Nueces, and Nueces-Rio Grande river basins. Much above normal (>90th percentile dark blue shading, Figure 5) streamflow was seen in the Upper Red (Running Water Draw and North Witchita sub-watersheds), Upper Trinity, Cypress, Colorado-Lavaca, and Nueces (Middle Nueces sub-watershed) river basins. Record high (black shading, Figure 5) streamflow was seen in the Upper Trinity (Cedar sub-watershed).

Below normal streamflow (10–24th percentile, orange shading, Figure 5) was recorded in the Upper Red (Upper North Fork Red, Elm Fork Red, Lower Salt Bend Fork Red, Broesbeck-Sandy, Witchita, and Blue-China watersheds) and Lower Red (Pecan Waterhole watershed), Lower Brazos, Upper and Lower Colorado, Guadalupe, San Antonio, Lavaca, Brazos-Colorado, and Pecos river basins. Much below normal stream flow (< 10th percentile, dark red shading, Figure 5) was seen in the Lower Red (downstream from Lake Texoma), Upper and Lower Brazos, Upper and Lower Colorado, Upper Guadalupe, Upper Nueces (Upper Frio sub-watershed), and Pecos river basins.

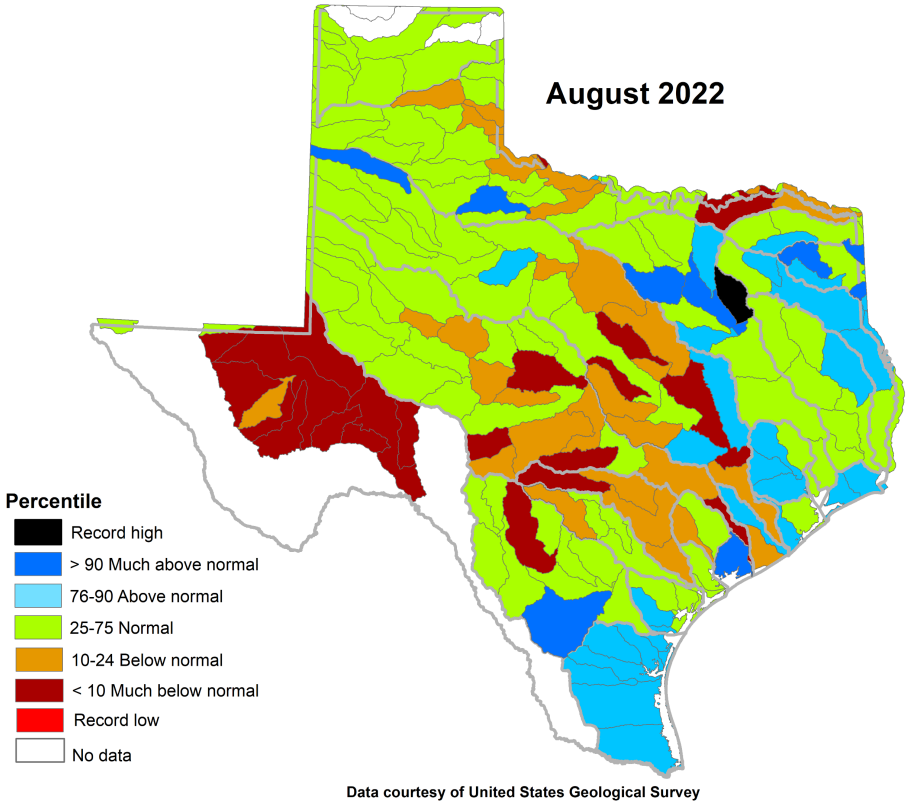


Figure 5: Runoff percentiles by the U.S. Geological Survey's Hydrologic Unit Code

SOIL MOISTURE

At the end of August 2022, root zone soil moisture was below average [< 0.3 cubic meters of water per bulk cubic meter soil (m^3/m^3), Figure 6(a)] across most of the state. Average soil moisture [0.3 cubic meters of water per bulk cubic meter soil (m^3/m^3), Figure 6(a)] was seen in the eastern North Central, northern and western east Texas, central Edwards Plateau, southern and northeastern South Central, northern and southeastern Southern, and the Upper Coast climate divisions. Low soil moisture [< 0.15 cubic meters of water per bulk cubic meter soil (m^3/m^3), Figure 6(a)] was seen across all climate divisions, particularly in the High Plains, Trans Pecos, Low Rolling Plains, Southern, South Central, Lower Valley, and East Texas climate divisions.

Compared to conditions at the end of July 2022, soil moisture content increased [blue shading in Figure 6(b)] with a maximum of 0.53 m^3/m^3, in central High Plains, Low Rolling Plains, central Trans Pecos, Edwards Plateau, North Central, northern Southern, areas of South Central, southeastern Lower Valley, portions of East Texas, and the Upper Coast climate divisions. Soil moisture content decreased [red shading in Figure 6(b)] in the High Plains, Trans Pecos, northern Edwards Plateau, western North Central, East Texas, Southern, Lower Valley, and southern and northern South Central climate divisions.

a)

b)

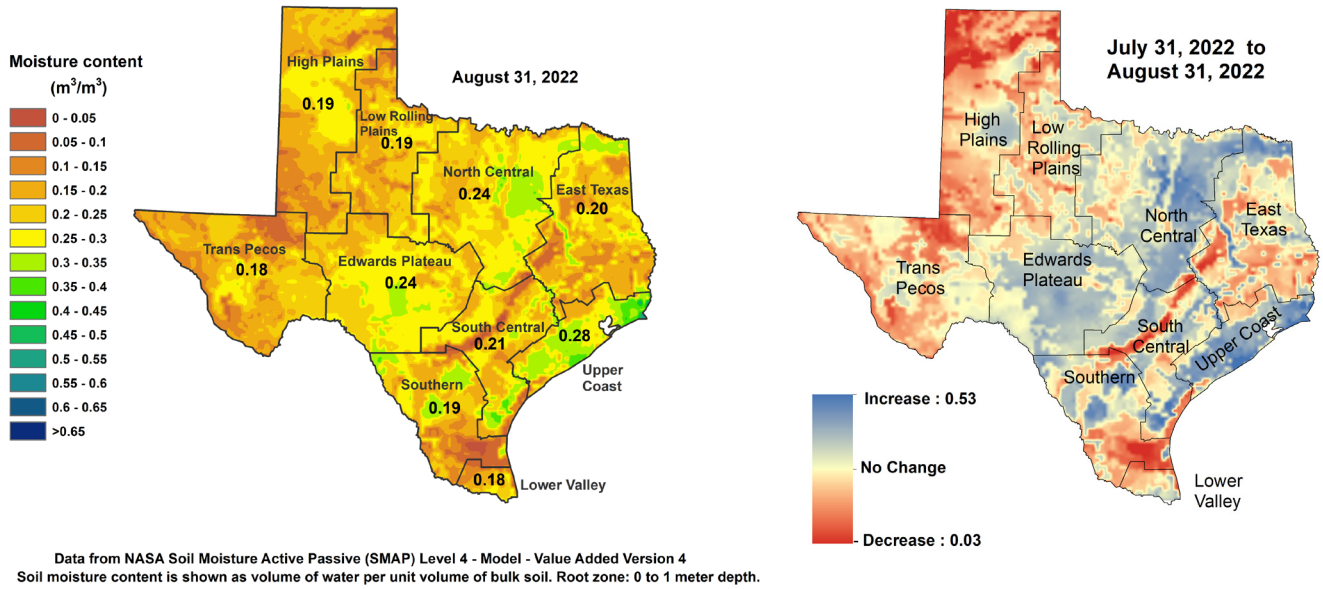
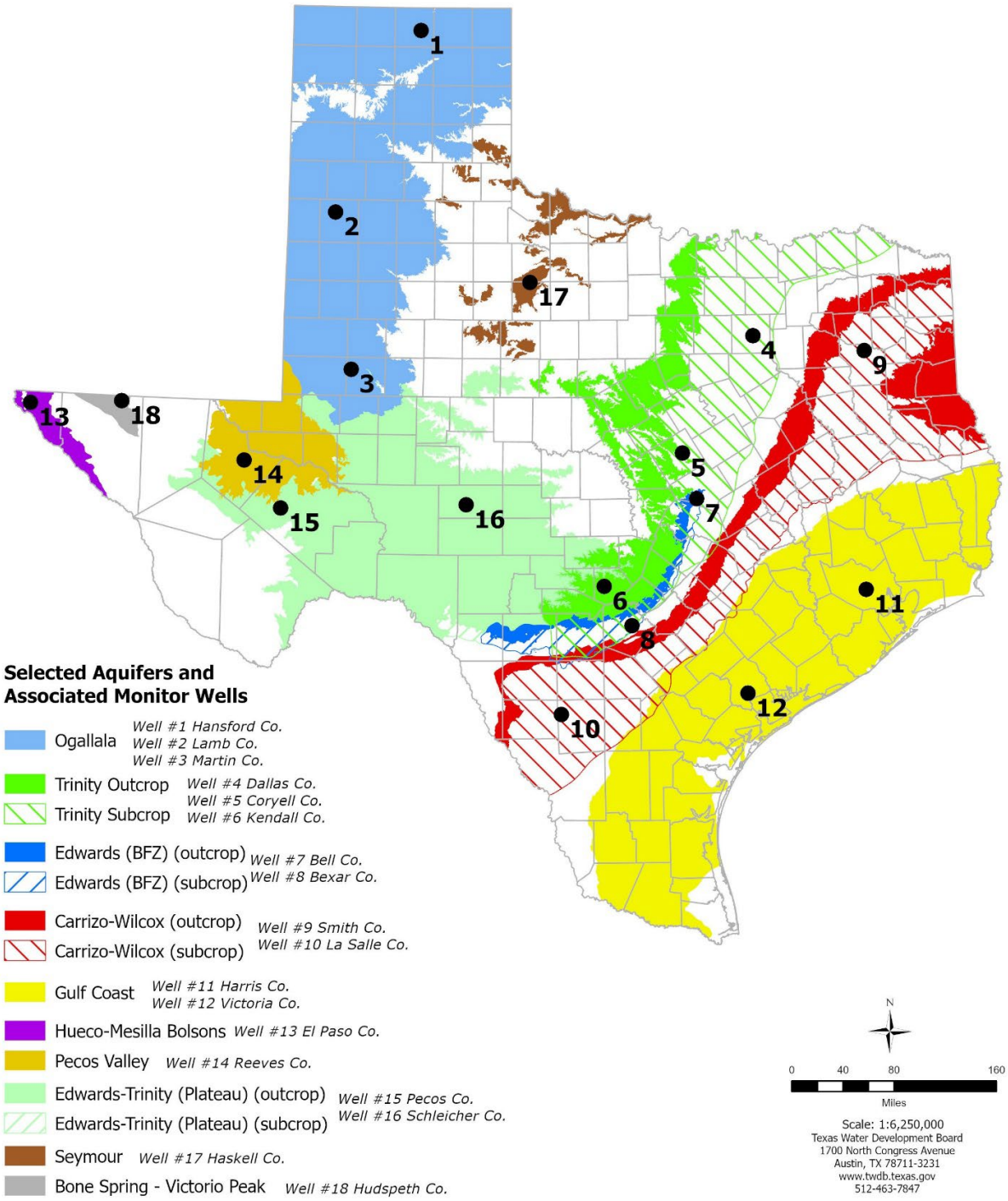


Figure 6: (a) Root zone soil moisture conditions in August 2022 and (b) the difference in root zone soil moisture between end-July 2022 and end-August 2022



AUGUST 2022 GROUNDWATER LEVELS IN MONITORING WELLS

Water-level measurements were available for 15 key monitoring wells in the state. The recorders in three wells (#13, #15, and #18 on map) were offline during the reporting period. Water levels rose in two monitoring wells since the beginning of August, ranging from an increase of 0.42 feet in the Bell County Edwards (Balcones Fault Zone) well (#7 on map) to 2.30 feet in the Bexar County Edwards (Balcones Fault Zone) well (#8 on map). Water levels declined in 11 monitoring wells, ranging from a decline of -0.03 feet in the Lamb County Ogallala Aquifer well (#2 on map) to -8.28 feet in the Reeves County Pecos Valley Aquifer well (#14 on map). Water levels remained at 318.29 feet below land surface in the Schleicher County Edwards Trinity-Plateau Aquifer well (#16 on map). The J-17 well (#8 on map) in San Antonio recorded a water level of 96.10 feet below land surface or 634.90 feet above mean sea level. Water levels are 5.10 feet below the Stage 3 critical management level for the San Antonio portion of the Edwards (Balcones Fault Zone) Aquifer. Stage 3 water restrictions have been in effect since June 13, 2022.

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

Monitoring Well	August (depth to water, feet)	July (depth to water, feet)	Month Change	Year Change	Historical Change*	First Measured (year)
(1) Hansford 0354301	162.55	162.41	-0.14	NA	-92.43	1951
(2) Lamb 1053602	153.04	153.01	-0.03	-0.86	-124.87	1951
(3) Martin 2739903	145.31	144.92	-0.39	-1.02	-40.42	1964
(4) Dallas 3319101	502.14	499.96	-2.18	-8.73	-280.14	1954
(5) Coryell 4035404	547.52	NA	NA	-14.26	-255.52	1955**
(6) Kendall 6802609	222.35	219.41	-2.94	-78.86	-162.35	1975
(7) Bell 5804816	116.74	117.16	0.42	5.70	6.77	2008
(8) Bexar 6837203	96.10	98.40	2.30	-25.40	-49.46	1932
(9) Smith 3430907	443.11	442.05	-1.06	-4.86	-143.11	1977**
(10) La Salle 7738103	532.85	529.67	-3.18	-35.35	-279.78	2003
(11) Harris 6514409	190.27	187.29	-2.98	-4.49	-54.77	1947**
(12) Victoria 8017502	34.42	33.68	-0.74	-1.96	-0.42	1958**
(13) El Paso 4913301	NA	299.32	NA	NA	-67.42*	1964**
(14) Reeves 4644501	164.74	156.46	-8.28	-5.92	-72.65	1952
(15) Pecos 5216802	NA	220.15	NA	NA	26.73*	1976
(16) Schleicher 5512134	318.29	318.29	0.00	-11.93	-16.39	2003
(17) Haskell 2135748	47.21	46.94	-0.27	NA	-4.21	2002
(18) Hudspeth 4807516	NA	NA	NA	NA	-49.92*	1966

*** Change since the original measurement taken on the date indicated in the last column. The historical changes shown for recorder wells #13, #15, and #18 are based off the most recent water level records from July, July, and June 2022, respectively.**

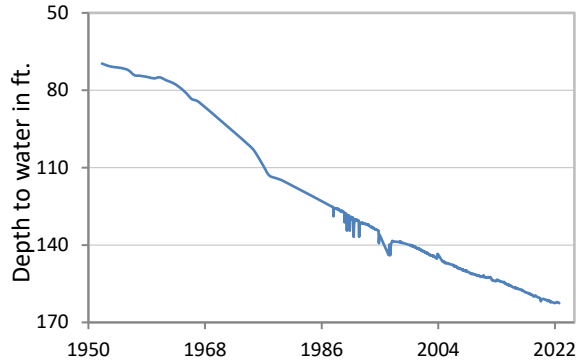
**** Measurement not shown on the hydrograph.**

NA (not available)

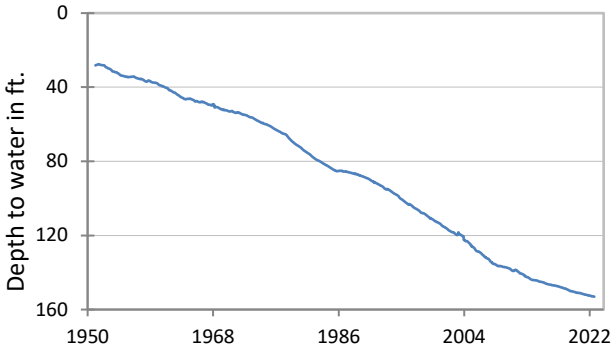
All data are provisional and subject to revision

AUGUST 2022 MONITORING WELL HYDROGRAPHS

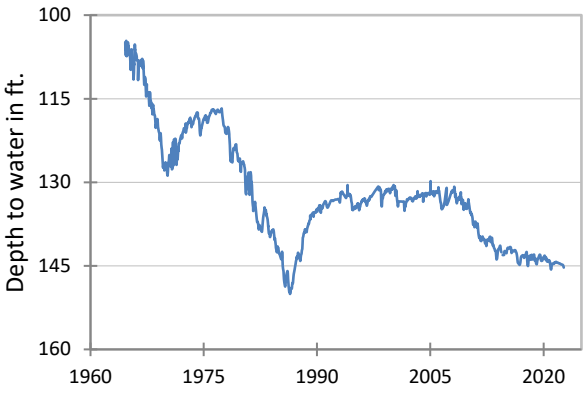
(1) State Well #03-54-301
Near Spearman, Hansford County
Ogallala Aquifer



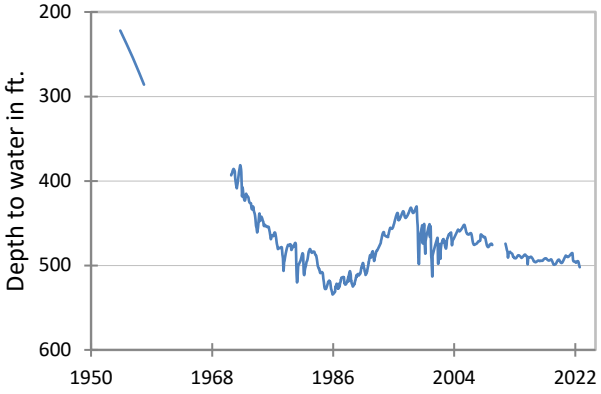
(2) State Well #10-53-602
Near Earth, Lamb County
Ogallala Aquifer



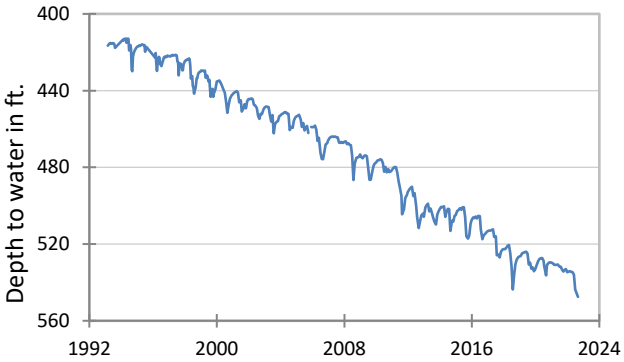
(3) State Well #27-39-903
Northwest Martin County
Ogallala Aquifer



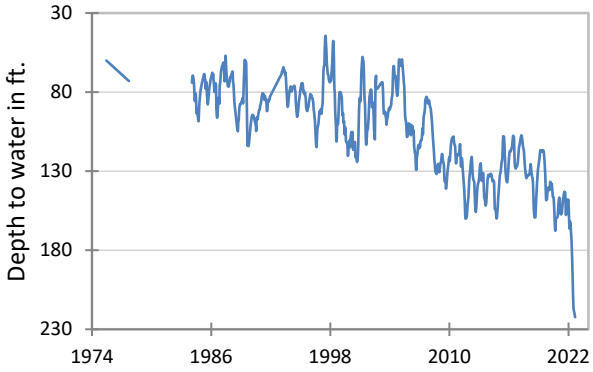
(4) State Well #33-19-101
Southeast Dallas, Dallas County
Twin Mountains Formation-Trinity Aquifer



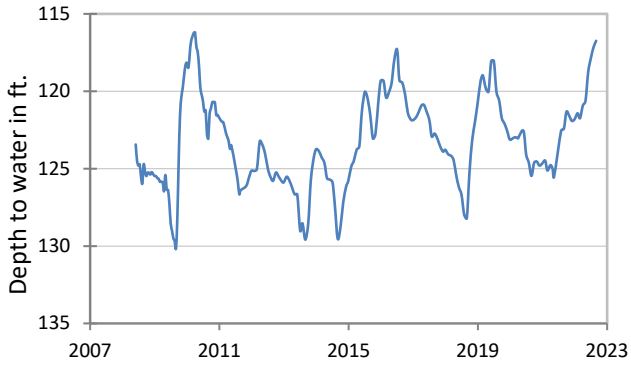
(5) State Well #40-35-404
Gatesville, Coryell County
Hosston Formation-Trinity Aquifer



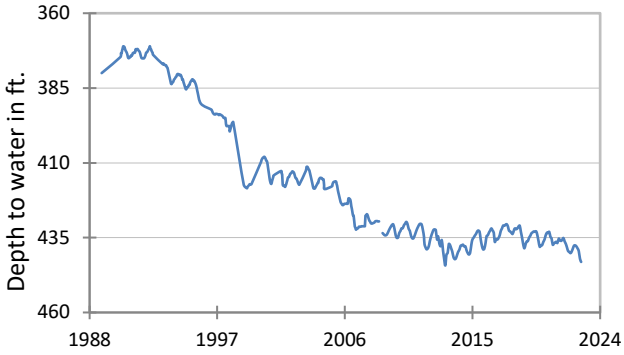
(6) State Well #68-02-609
Waring, Kendall County
Travis Peak Formation-Trinity Aquifer



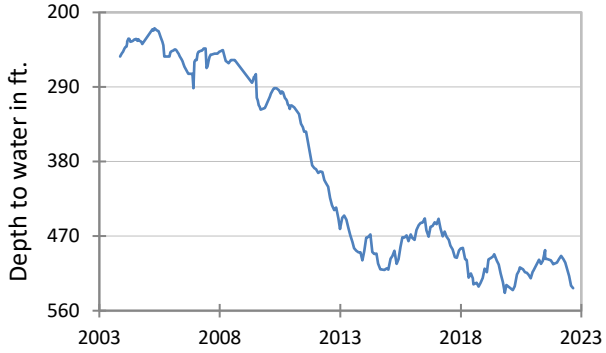
(7) State Well #58-04-816
Near Salado, Bell County
Edwards (Balcones Fault Zone) Aquifer



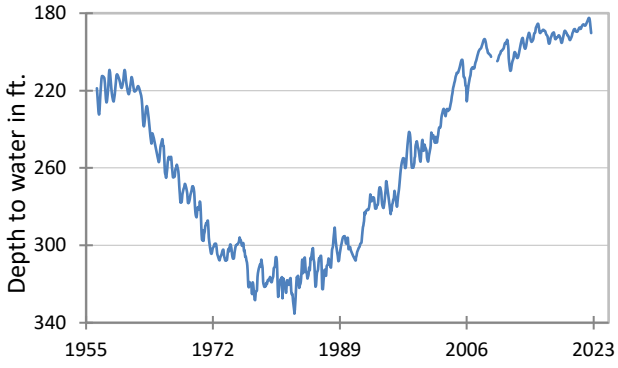
(9) State Well #34-30-907
Red Springs, Smith County
Carrizo-Wilcox Aquifer



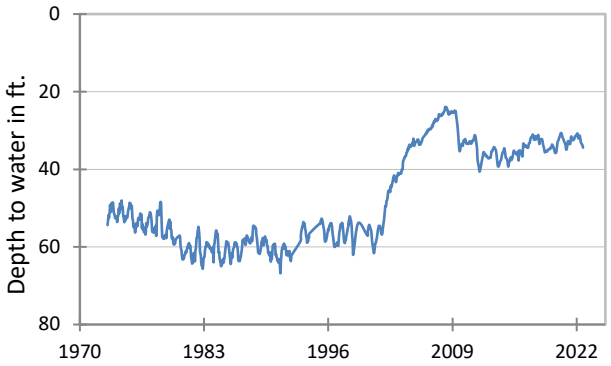
(10) State Well #77-38-103
Near Cotulla, La Salle County
Carrizo-Wilcox Aquifer



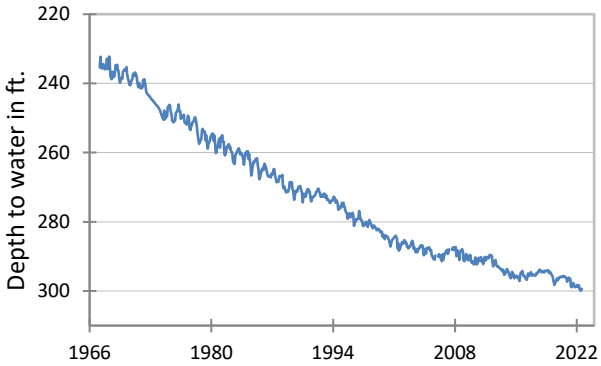
(11) State Well #65-14-409
North Houston, Harris County
Evangeline Formation-Gulf Coast Aquifer



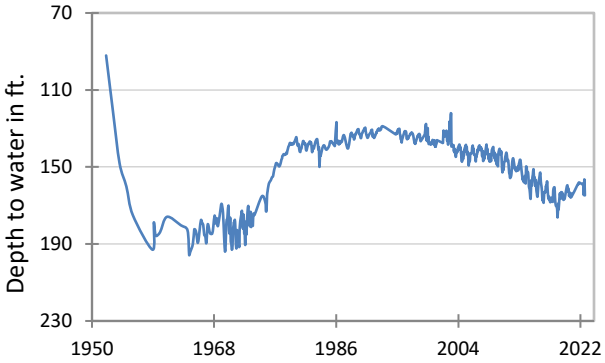
(12) State Well #80-17-502
Near Bloomington, Victoria County
Lissie Formation-Gulf Coast Aquifer



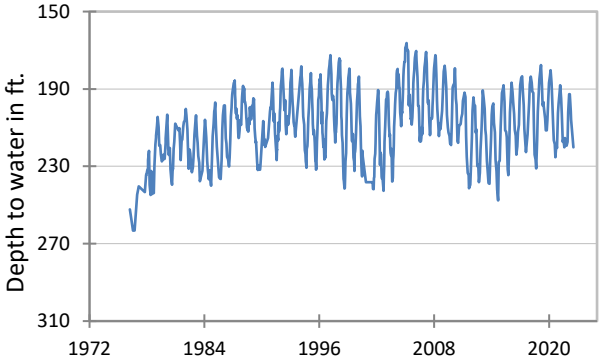
***(13) State Well #49-13-301**
El Paso, El Paso County
Hueco-Mesilla Bolsons Aquifer



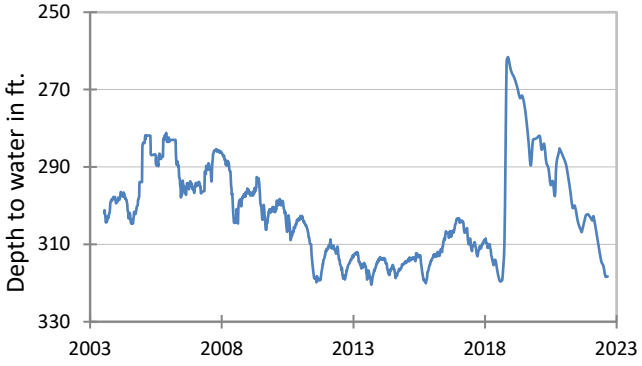
(14) State Well #46-44-501
Near Pecos, Reeves County
Pecos Valley Aquifer



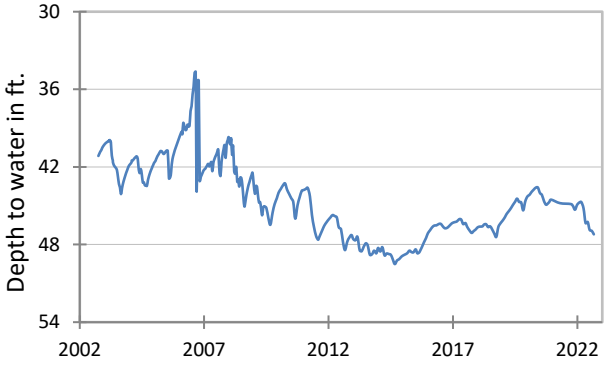
***(15) State Well #52-16-802**
Fort Stockton, Pecos County
Edwards-Trinity (Plateau) Aquifer



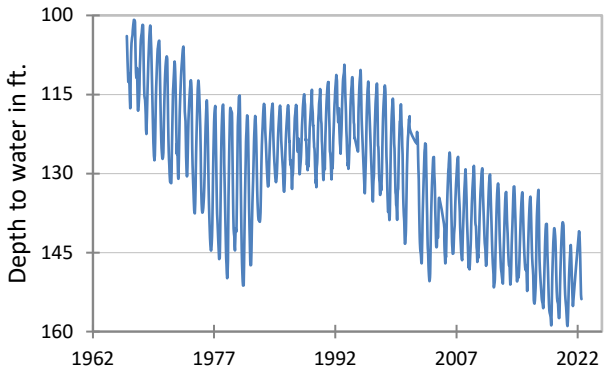
(16) State Well #55-12-134
Eldorado, Schleicher County
Edwards-Trinity (Plateau) Aquifer



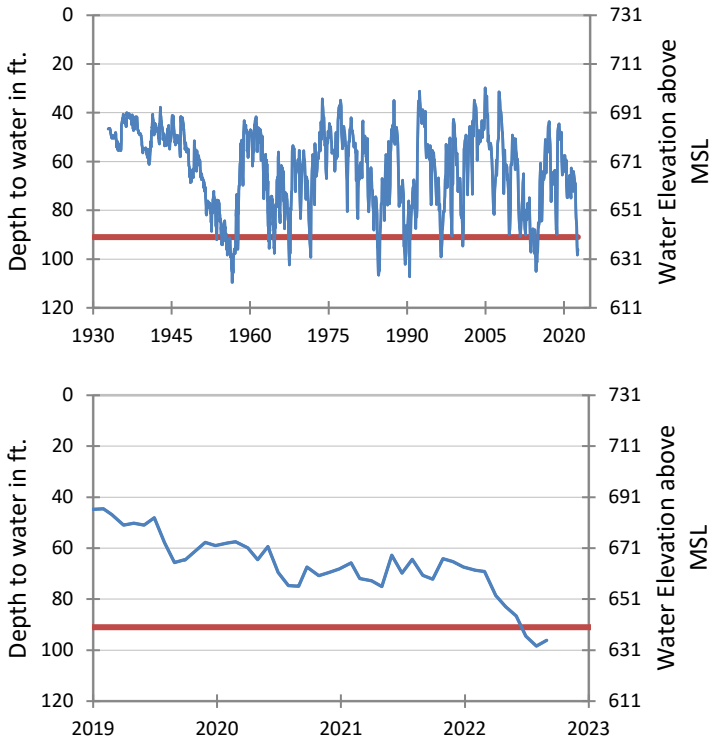
(17) State Well #21-35-748
Near O'Brien, Haskell County
Seymour Aquifer



***(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

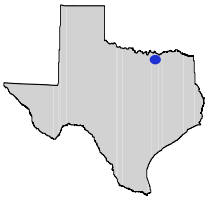


The late August water-level measurement in this Edwards (Balcones Fault Zone) Aquifer well, located at an elevation of 731 feet above mean sea level, was 96.10 feet below land surface, or 634.90 feet above mean sea level. This was 2.30 feet above last month's measurement, 25.40 feet below last year's measurement, and 49.46 feet below the initial measurement recorded in 1932.

Water levels below the red line indicate periods in which Edwards Aquifer Authority Stage 3 drought restrictions are in effect. In August 2022, Stage 3 drought restrictions were in effect because the aquifer remained below the Stage 3 critical management level.

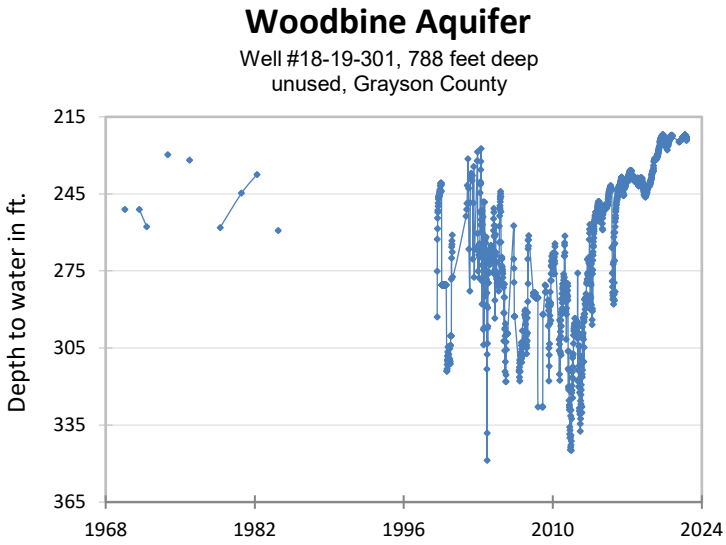
***Recorder wells #13, #15, and #18 were offline in August 2022 and did not record data.**

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 Woodbine Aquifer is a minor aquifer located in northeast Texas. The aquifer overlies the Trinity Aquifer and consists of sandstone interbedded with shale and clay that form three distinct water-bearing zones. The Woodbine Aquifer reaches 600 feet thickness in subsurface areas, and freshwater saturated thickness averages about 160 feet. Water quality and yield vary with the depth of the aquifer. The lower zones of the aquifer typically yield the most water, whereas the upper zone yields limited water that tends to be very high in iron. In general, water to a depth of 1,500 feet is fresh, containing less than 1,000 milligrams per liter of total dissolved solids. Water at depths below 1,500 feet is slightly to moderately saline, containing from 1,000 to 4,000 milligrams per liter of total dissolved solids. The aquifer provides water for municipal, industrial, domestic, livestock, and small irrigation supplies.



The initial measurement of 251 feet below land surface was recorded by a private firm or industry in October 1969. The TWDB took several measurements over the period of 1971 to 1985 and installed an automatic water-level recorder in February 1999. The recorder continues to take hourly measurements (available online) and daily measurements (in the groundwater database). The period of record reveals seasonal fluctuations in water levels which are most apparent from 1999 to 2013. After 2016, these fluctuations are no longer observed and water levels have since trended upwards, reaching historic highs of 222 feet below land surface. This may be a result of decreased pumping in the nearby area.

Far away (left), and close-up (right) images of well #18-19-301.