Texas Water Conditions Report

Frio River in Concan. Photo taken in June, 2022. (Pilar Newberry)

June 2022

Water News:

According to the State Climatologist, the base flow conditions on the Frio River at Concan this spring and early summer are presently the worst on record, having gone to zero flow on June 20, 2022. In 2011, zero flow was not reached until July 12. In both the 1953 and 1956 droughts there were lower flows during the spring, but flow remained at a trickle in 1953 and only reached zero on August 5, 1956. Presumably much less groundwater use allowed water levels to remain more stable during those previous droughts.

See pages 3-5 of this report for a comparison of reservoir storage in 2011 and 2022.

RAINFALL

Little to no rain [yellow, orange, and red shading, Figure 1(a)] fell over most of the state this month. Rainfall accumulations ranged from 0 to 9.43 inches across the state. Some rainfall [light blue and dark blue shading, Figure 1(a)] was recorded in the northern and southern High Plains, northern and central Trans Pecos, areas of the Low Rolling Plains, northern and central Edwards Plateau, areas across North Central, northern and central South Central, small areas of northwestern, southern, and eastern Southern, northern and areas of central and southern East Texas, and the southern and western Upper Coast climate divisions.

Compared to historical data from 1991–2020, 0 to 50 percent of normal rainfall (orange shading, Figure 1(b)) was received in June across most of the state. Average rainfall [green shading, Figure 1(b)] was seen in in portions of northern and southern High Plains, portions of northern and central Low Rolling Plains, small areas of western and northeastern Edwards Plateau, western and northeastern North Central, northern East Texas, western Upper Coast, central South Central, southern and eastern Southern, and northern and central Trans Pacos climate divisions. In fact, the Trans Pecos received 200–600 percent of normal rainfall [light blue, dark blue, purple shading, Figure 1(b)] in the northern and central portions of the climate division.

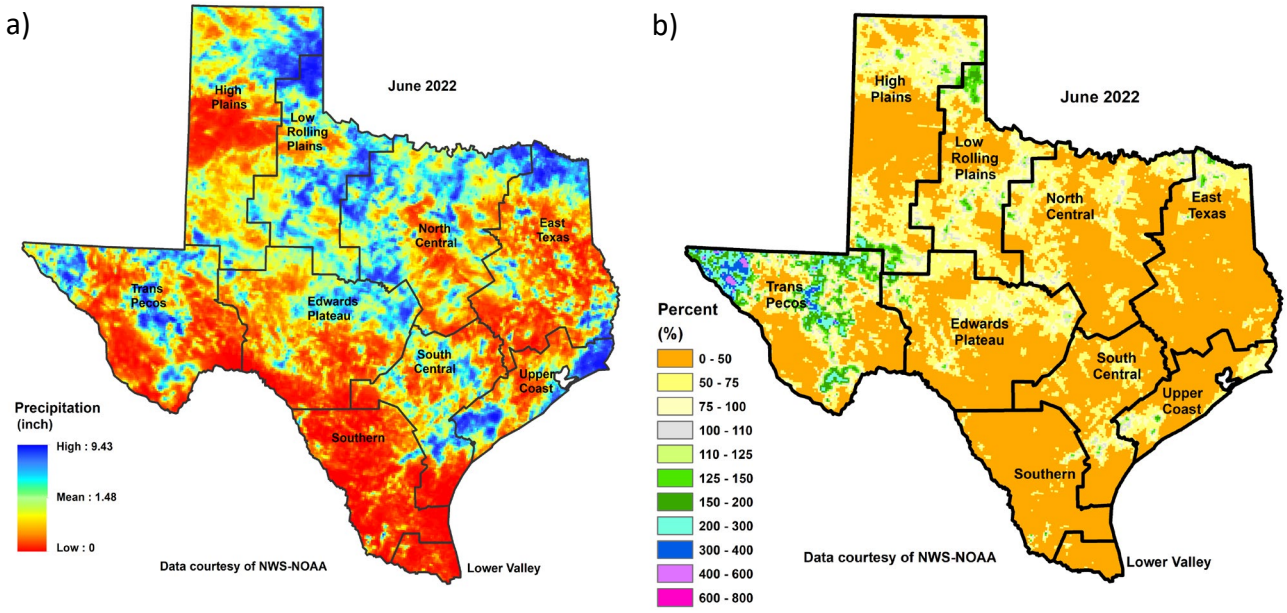


Figure 1: (a) Monthly accumulated rainfall and (b) Percent of normal rainfall

In June of 2022, the total regionally combined conservation storage was at or above normal (storage ≥70 percent full) in East Texas (91.9 percent full), North Central (91.0 percent full), and the Upper Coast (88.5 percent full) climate divisions (Figure 2(a)). Conservation storage for the Low Rolling Plains (60.1 percent full), and South Central (61.9 percent full) climate divisions were abnormally low (Figure 4(a)). The Edwards Plateau climate division had moderately low conservation storage (44.9 percent full, Figure 2(a)). The High Plains (26.3 percent full) and Southern (24.4 percent full) climate divisions had severely low conservation storage (Figure 2(a)). The Trans Pecos (16.6 percent full) climate division had extremely low conservation storage (Figure 2(a)).

Comparing June 2022 to June 2011, the current drought is impacting water supply storage in different areas of the state. Conservation storage was lower in 2011 than 2022 in the High Plains (-23.2 percent difference), Low Rolling Plains (-14.2 percent difference), Trans Pecos (-1.5 percent difference), North Central (-7 percent difference), South Central (-0.8 percent difference), and the Upper Coast (-20 percent difference) (Figure 2(b)).

The biggest difference in storage between June 2022 and June 2011 is evident in the Southern, Low Rolling Plains, and Upper Coast climate divisions. In June 2022, the conservation storage in the Edwards Plateau was 15 percent lower than in 2011, and 47.1 percent lower in the Southern climate division, going from normal-to-high reservoir storage in 2011 (Figure 2(b)) to severely low reservoir storage in 2022 (Figure 2(a)).

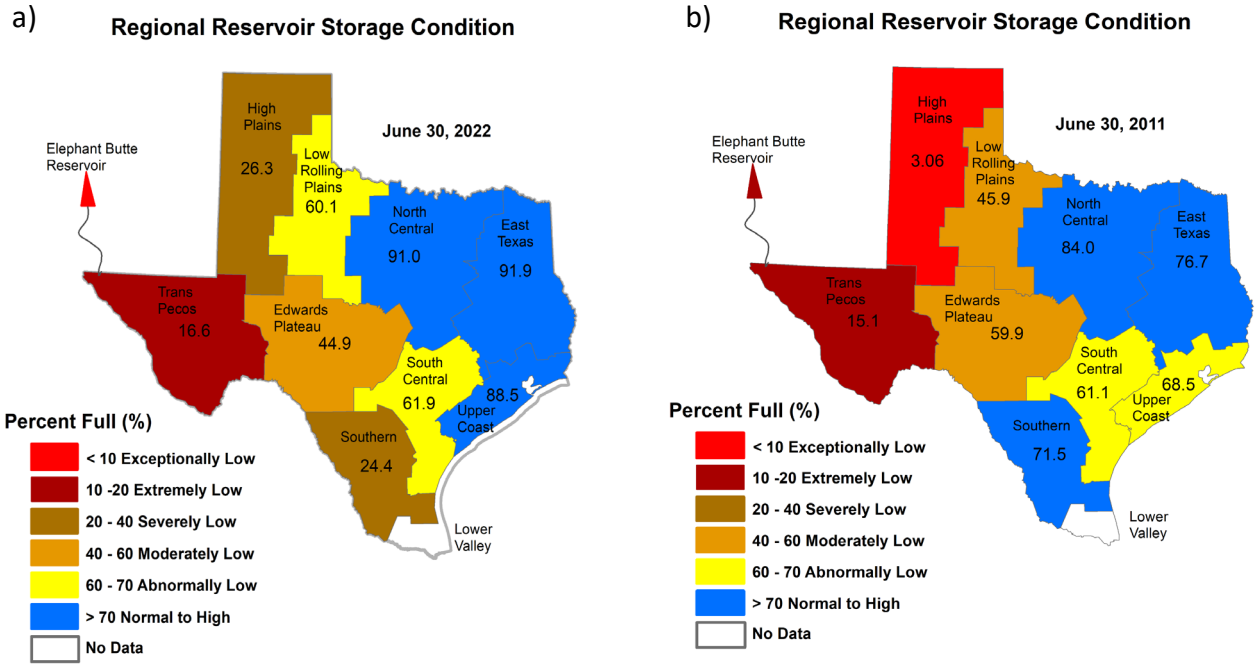


Figure 2: Reservoir Storage Index* by climate division a) 6/30/2022, and b) 6/30/2011

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

Combined conservation storage by river basin or sub-basin was normal to high (>70 percent full, Figure 3(a)) 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 Upper Red and Lower Colorado river basins had abnormally low conservation storage (60–70 percent full, Figure 3(a)). The Nueces river basin had moderately low conservation storage (40–60 percent full, Figure 3(a)). The Canadian, Upper Colorado, and Lower Rio Grande river basins had severely low conservation storage (20–40 percent full, Figure 3(a)), and the San Antonio and Upper/Mid Rio Grande river basins had extremely low conservation storage (10–20 percent full, Figure 3(a)).

Compared to June 2011, June 2022 reservoir storage was higher in the Canadian, Upper and Lower Red, Upper and Lower Brazos, Upper and Lower Trinity, Sulphur, Cypress, Upper and Lower Sabine, Neches, San Jacinto, Lavaca, Upper and Lower Colorado, and Upper/Mid Rio Grande river basins (blue shading, Figure 3(b)). Differences ranged from 1.1 percent to 27.1 percent.

In 2022, reservoir storage was lower in the Guadalupe, San Antonio, Nueces, and Lower Rio Grande river basins, ranging from 7.9 percent to 58 percent lower (tan shading, Figure 3(b)).

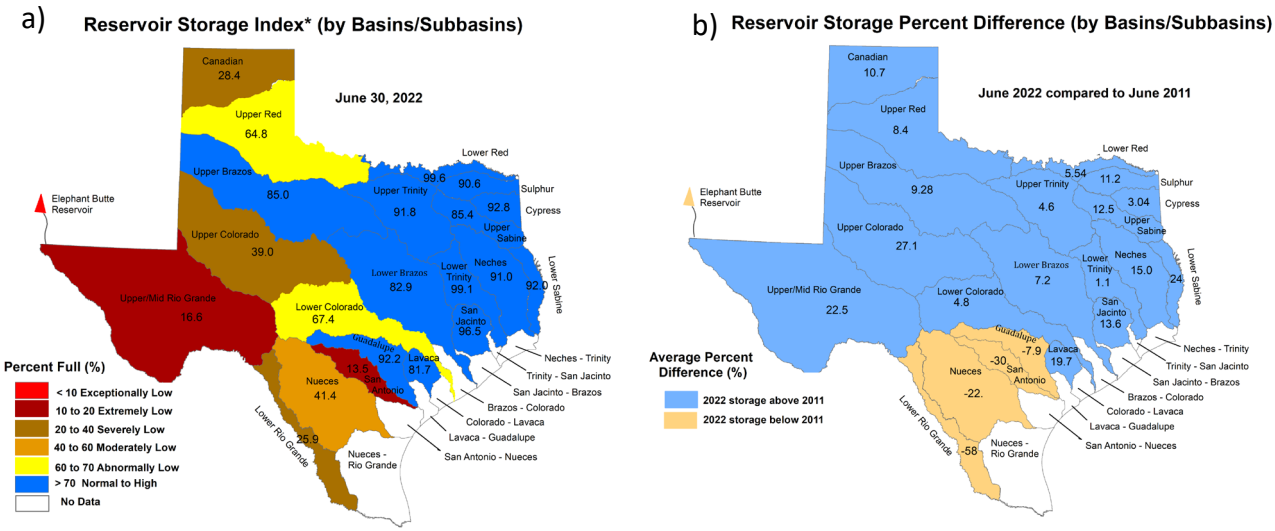


Figure 3: Reservoir Storage Index* by river basin/sub-basin a) 6/30/2022, and b) average percent difference in reservoir storage in 2022 compared to 2011.

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

RESERVOIR STORAGE

June 2022 began with water supply storage more than two percent lower than normal for the time of year. By the end of June, it fell to about ten percent lower than normal.
In 2011, water supply began the year closer to normal, but fell farther and faster than in 2022. By the end of June, storage was about one and a half percent less than this year (Figure 4(a), (https://texaswaternewsroomorg/videos/water_and_weather_for_june_2022.html).

At the end of June 2022, total conservation storage in 123 of the state's major water supply reservoirs was 24.0 million acre-feet or 73.6 percent of total conservation storage capacity (Figure 4(b)). This is approximately 0.11 million-acre-feet less than a month ago and approximately 3.0 million acre-feet less than at the end of June 2021 (Figure 4(b)). In the coming months, additional storage declines are expected. Since 2011, the Bois d'Arc reservoir was built adding 367,609-acre feet to the storage capacity.

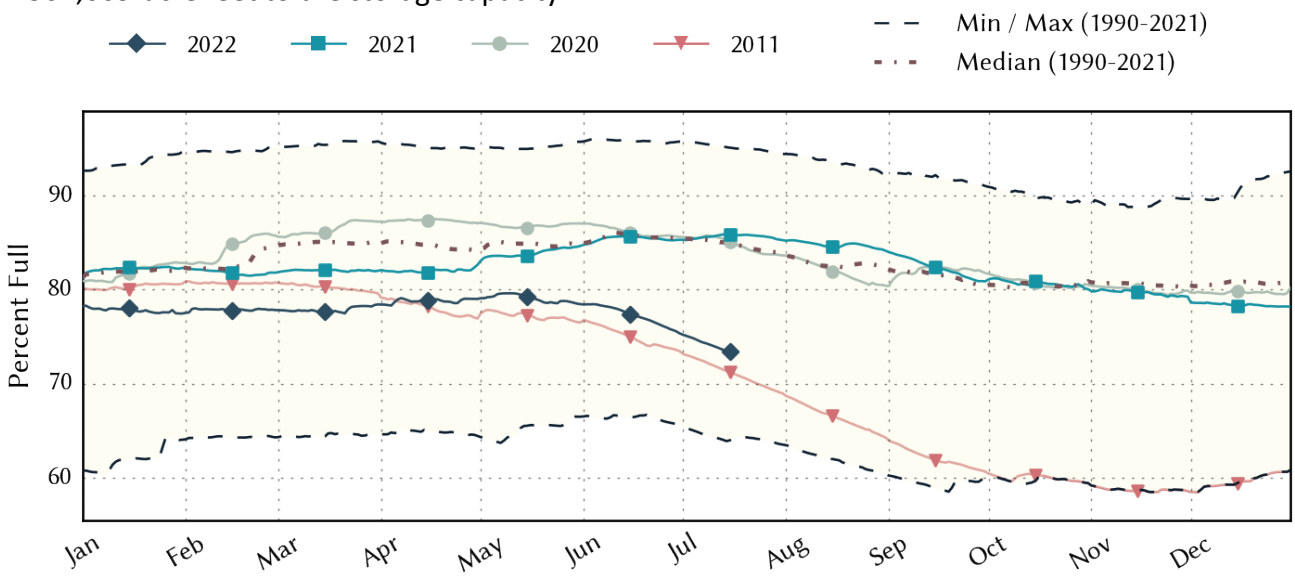


Figure 4(a): Statewide conservation storage comparison of 2020, 2021, 2022, and 2011.

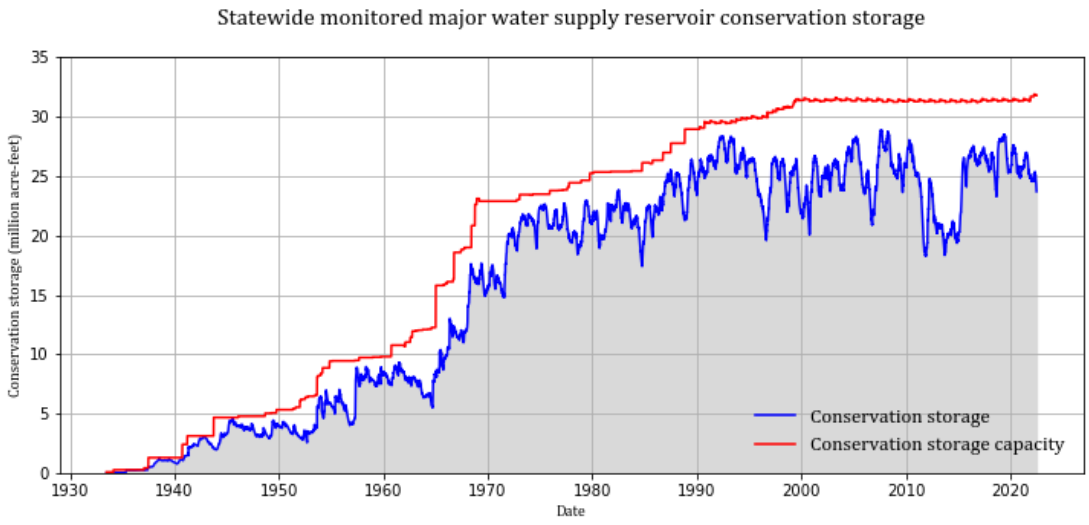


Figure 4(b) : Statewide reservoir conservation storage

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of lake or reservoir	Storage capacity	Storage at end-June 2022		Storage change from end-May 2022		Storage change from end-Jun 2021	
	(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)**	(%)
Abilene, Lake	7,900	4,216	53.4	-413	-5.2	-3,072	-38.9
Alan Henry Reservoir	96,207	77,058	80.1	-1,513	-1.6	-19,149	-19.9
*Amistad Reservoir (Texas & Mexico)	3,275,532	819,147	25.0	-37,008	-1.1	-254,679	-7.8
*Amistad Reservoir (Texas)	1,840,849	656,117	35.6	-46,815	-2.5	-293,899	-16.0
Amon G Carter, Lake	19,266	19,266	100.0	0	0.0	0	0.0
Aquilla Lake	43,243	33,509	77.5	-2,388	-5.5	-8,936	-20.7
Arlington, Lake	40,157	34,736	86.5	-1,512	-3.8	-3,795	-9.5
Arrowhead, Lake	230,359	182,621	79.3	-6,541	-2.8	-44,272	-19.2
Athens, Lake	29,503	28,735	97.4	-768	-2.6	-768	-2.6
*Austin, Lake	23,972	22,926	95.6	-155	0.0	-16	0.0
B A Steinhagen Lake	69,186	66,257	95.8	1,091	1.6	-2,929	-4.2
Bardwell Lake	46,122	42,754	92.7	-2,431	-5.3	-3,368	-7.3
Belton Lake	435,225	370,298	85.1	-13,281	-3.1	-64,927	-14.9
Benbrook Lake	85,648	73,092	85.3	-299	0.0	-12,556	-14.7
Bob Sandlin, Lake	192,417	185,631	96.5	-2,806	-1.5	-6,786	-3.5
Bois d'Arc Lake	367,609	146,602	39.9	-1,048	0.0	no data	
Bonham, Lake	11,027	10,424	94.5	-603	-5.5	-362	-3.3
Brady Creek Reservoir	28,808	14,094	48.9	-587	-2.0	-4,169	-14.5
Bridgeport, Lake	366,236	325,181	88.8	-8,408	-2.3	-41,055	-11.2
*Brownwood, Lake	130,868	102,790	78.5	-5,195	-4.0	-26,724	-20.4
Buchanan, Lake	816,904	623,856	76.4	-72,796	-8.9	-163,898	-20.1
Caddo, Lake	29,898	29,898	100.0	0	0.0	0	0.0
Canyon Lake	378,781	351,365	92.8	-9,175	-2.4	-1,414	0.0
Cedar Creek Reservoir in Trinity	644,686	561,625	87.1	-30,567	-4.7	-77,187	-12.0
Champion Creek Reservoir	41,580	26,312	63.3	-624	-1.5	450	1.1
Cherokee, Lake	40,094	38,084	95.0	-2,010	-5.0	-2,010	-5.0
Choke Canyon Reservoir	662,820	243,318	36.7	-11,622	-1.8	-79,327	-12.0
*Cisco, Lake	29,003	23,314	80.4	-358	-1.2	-5,277	-18.2
Coleman, Lake	38,075	31,749	83.4	-1,121	-2.9	-2,436	-6.4
Colorado City, Lake	31,040	26,547	85.5	615	2.0	-4,493	-14.5
*Coleto Creek Reservoir	30,758	19,471	63.3	-697	-2.3	5,194	16.9
Conroe, Lake	410,988	396,357	96.4	-12,905	-3.1	-12,140	-3.0
Corpus Christi, Lake	256,062	137,112	53.5	-16,130	-6.3	-70,334	-27.5
Crook, Lake	9,195	8,841	96.2	-218	-2.4	-187	-2.0
Cypress Springs, Lake	66,756	60,836	91.1	-1,090	-1.6	-5,920	-8.9
E. V. Spence Reservoir	517,272	112,226	21.7	-3,982	0.0	-11,948	-2.3
Eagle Mountain Lake	179,880	157,000	87.3	-5,160	-2.9	-21,503	-12.0
Elephant Butte Reservoir (Texas)	852,491	66,996	7.9	-42,825	-5.0	6,723	0.8
Elephant Butte Reservoir (Total Storage)	1,960,900	155,084	7.9	-99,132	-5.1	15,563	0.8
*Falcon Reservoir (Texas & Mexico)	2,646,817	369,411	14.0	-107,071	-4.0	-79,838	-3.0
*Falcon Reservoir (Texas)	1,551,007	223,666	14.4	-98,770	-6.4	-161,798	-10.4
Fork Reservoir, Lake	605,061	453,765	75.0	-13,325	-2.2	-147,856	-24.4
Fort Phantom Hill, Lake	70,030	54,643	78.0	-2,547	-3.6	-15,387	-22.0
Georgetown, Lake	36,823	24,433	66.4	-2,104	-5.7	-8,822	-24.0
Gibbons Creek Reservoir	25,721	21,454	83.4	-1,336	-5.2	-2,334	-9.1
Graham, Lake	45,288	41,559	91.8	-546	-1.2	-3,729	-8.2
Granbury, Lake	132,949	123,251	92.7	-6,458	-4.9	-7,182	-5.4

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS							
Name of lake or reservoir	Storage capacity	Storage at end-June 2022		Storage change from end-May 2022		Storage change from end-Jun 2021	
	(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)**	(%)
Continued							
Granger Lake	51,822	49,121	94.8	-2,701	-5.2	-2,701	-5.2
Grapevine Lake	163,064	163,064	100.0	0	0.0	0	0.0
Greenbelt Lake	59,968	8,583	14.3	-583	0.0	-2,408	-4.0
*Halbert, Lake	6,033	5,073	84.1	-201	-3.3	-157	-2.6
Hords Creek Lake	8,109	2,889	35.6	-142	-1.8	-1,137	-14.0
Houston County Lake	17,113	16,434	96.0	-666	-3.9	-679	-4.0
Houston, Lake	130,147	126,009	96.8	-4,138	-3.2	-4,138	-3.2
Hubbard Creek Reservoir	313,298	247,135	78.9	-6,654	-2.1	-65,849	-21.0
Hubert H Moss Lake	24,058	23,414	97.3	-611	-2.5	-644	-2.7
Inks, Lake	13,962	12,937	92.7	30	0.2	67	0.5
J. B. Thomas, Lake	199,931	62,798	31.4	-3,074	-1.5	-8,971	-4.5
Jacksonville, Lake	25,670	25,048	97.6	-622	-2.4	-622	-2.4
Jim Chapman Lake (Cooper)	260,332	217,768	83.7	-9,324	-3.6	-42,564	-16.3
Joe Pool Lake	175,800	162,588	92.5	2,561	1.5	-13,212	-7.5
Kemp, Lake	245,307	177,925	72.5	-5,086	-2.1	-67,382	-27.5
Kickapoo, Lake	86,345	61,487	71.2	-289	0.0	-16,484	-19.1
Lavon Lake	406,388	393,291	96.8	-13,097	-3.2	-13,097	-3.2
Leon, Lake	27,762	20,384	73.4	-923	-3.3	-6,942	-25.0
Lewisville Lake	563,228	563,228	100.0	0	0.0	0	0.0
Limestone, Lake	203,780	187,223	91.9	-10,887	-5.3	-16,557	-8.1
*Livingston, Lake	1,741,867	1,727,131	99.2	-14,736	0.0	-14,736	0.0
*Lost Creek Reservoir	11,950	11,346	94.9	-222	-1.9	-536	-4.5
Lyndon B Johnson, Lake	115,249	111,248	96.5	184	0.2	1,221	1.1
Mackenzie Reservoir	46,450	3,153	6.8	-108	0.0	-841	-1.8
Marble Falls, Lake	6,901	6,841	99.1	-28	0.0	0	0.0
Martin, Lake	75,726	70,577	93.2	-4,015	-5.3	-3,671	-4.8
Medina Lake	254,823	34,599	13.6	-7,423	-2.9	-52,079	-20.4
Meredith, Lake	500,000	159,591	31.9	-3,193	0.0	-20,889	-4.2
Millers Creek Reservoir	26,768	20,987	78.4	538	2.0	-5,781	-21.6
*Mineral Wells, Lake	5,273	5,138	97.4	-135	-2.6	-135	-2.6
Monticello, Lake	34,740	28,286	81.4	-576	-1.7	-1,379	-4.0
Mountain Creek, Lake	22,850	22,850	100.0	0	0.0	0	0.0
Murvaul, Lake	38,285	35,844	93.6	-2,064	-5.4	-2,441	-6.4
Nacogdoches, Lake	39,522	36,391	92.1	-1,645	-4.2	-2,371	-6.0
Nasworthy	9,615	8,257	85.9	49	0.5	-459	-5.5
Navarro Mills Lake	49,827	45,356	91.0	-861	-1.7	-4,471	-9.0
New Terrell City Lake	8,583	7,417	86.4	-485	-5.7	-1,166	-13.6
Nocona, Lake (Farmers Crk)	21,444	18,494	86.2	-468	-2.2	-2,950	-13.8
North Fork Buffalo Creek Reservoir	15,400	9,663	62.7	-539	-3.5	-5,737	-37.3
O' the Pines, Lake	268,566	245,437	91.4	-11,157	-4.2	-23,129	-8.6
O. C. Fisher Lake	115,742	5,203	4.5	-498	0.0	-972	0.0
*O. H. Ivie Reservoir	554,340	259,711	46.9	-10,853	-2.0	-65,477	-11.8
Oak Creek Reservoir	39,210	23,194	59.2	-722	-1.8	-6,152	-15.7

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS							
Name of lake or reservoir	Storage capacity	Storage at end-June 2022		Storage change from end-May 2022		Storage change from end-Jun 2021	
	(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)**	(%)
Continued							
Palestine, Lake	367,303	349,997	95.3	-14,769	-4.0	-17,306	-4.7
Palo Duro Reservoir	61,066	276	0.5	1	0.0	-364	0.0
Palo Pinto, Lake	26,766	21,537	80.5	-1,695	-6.3	-5,229	-19.5
Pat Cleburne, Lake	26,008	16,887	64.9	-1,238	-4.8	-9,121	-35.1
*Pat Mayse Lake	113,683	113,289	99.7	-394	0.0	-394	0.0
Possum Kingdom Lake	538,139	507,148	94.2	3,411	0.6	-27,774	-5.2
Proctor Lake	54,762	36,775	67.2	-3,956	-7.2	-17,987	-32.8
Ray Hubbard, Lake	439,559	427,390	97.2	-11,125	-2.5	-11,542	-2.6
Ray Roberts, Lake	788,167	786,183	99.7	-1,984	0.0	-1,984	0.0
Red Bluff Reservoir	151,110	100,444	66.5	-4,063	-2.7	19,305	12.8
Richland-Chambers Reservoir	1,087,839	962,036	88.4	-26,951	-2.5	-125,803	-11.6
Sam Rayburn Reservoir	2,857,077	2,574,323	90.1	-165,444	-5.8	-282,754	-9.9
Somerville Lake	150,293	135,204	90.0	-12,510	-8.3	-15,089	-10.0
Squaw Creek, Lake	151,250	151,250	100.0	474	0.3	0	0.0
Stamford, Lake	51,570	39,125	75.9	-209	0.0	-12,445	-24.1
Stillhouse Hollow Lake	227,771	192,793	84.6	-6,947	-3.0	-34,978	-15.4
Striker, Lake	16,934	16,133	95.3	-801	-4.7	-801	-4.7
Sweetwater, Lake	12,267	8,634	70.4	-383	-3.1	-1,559	-12.7
*Sulphur Springs, Lake	17,747	12,613	71.1	-821	-4.6	-4,277	-24.1
Tawakoni, Lake	871,685	795,508	91.3	-25,779	-3.0	-76,177	-8.7
Texana, Lake	159,566	130,405	81.7	-8,858	-5.6	-27,418	-17.2
Texoma, Lake (Texas & Oklahoma)	2,487,601	2,632,990	100.0	134,625	5.4	-37,234	-1.5
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	4,119,760	92.1	-215,715	-4.8	-269,568	-6.0
Toledo Bend Reservoir (Texas)	2,236,450	2,057,830	92.0	-107,858	-4.8	-134,784	-6.0
Travis, Lake	1,113,348	638,220	57.3	-38,533	-3.5	-217,356	-19.5
Twin Buttes Reservoir	182,454	74,429	40.8	-8,410	-4.6	-18,295	-10.0
Tyler, Lake	72,073	68,646	95.2	-3,097	-4.3	-3,427	-4.8
Waco, Lake	189,418	137,883	72.8	-7,842	-4.1	-51,535	-27.2
Waxahachie, Lake	10,780	8,907	82.6	-337	-3.1	-1,873	-17.4
Weatherford, Lake	17,812	11,964	67.2	-1,274	-7.2	-5,512	-30.9
White River Lake	29,880	4,674	15.6	-354	-1.2	-2,945	-9.9
Whitney, Lake	553,344	454,426	82.1	-39,364	-7.1	-93,927	-17.0
Worth, Lake	24,419	17,675	72.4	-447	-1.8	-5,079	-20.8
Wright Patman Lake	231,496	231,496	100.0	-61,144	-26.4	0	0.0
STATEWIDE TOTAL							
STATEWIDE TOTAL	**32,628,849**	**24,004,999**	**73.6**	**-1,097,488**	**-3.4**	**-2,995,197**	**-9.2**

*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, central, and some southeastern areas of Texas this month. Below normal streamflow (10–24th percentile, orange shading, Figure 5) was recorded in the Canadian, Upper Red, Upper and Lower Brazos, Upper and Lower Colorado, Upper and Lower Trinity, Upper and Lower Sabine, Cypress, Sulphur, Neches, Neches-Trinity, San Jacinto, San Jacinto-Brazos, Brazos-Colorado, Lavaca, Guadalupe, San Antonio, Lavaca-Guadalupe, San Antonio-Nueces, and Nueces river basins.

Much below normal stream flow (< 10th percentile, dark red shading, Figure 5) was seen in the Canadian, Upper Red, Upper and Lower Brazos, Upper Trinity, Neches, San Jacinto-Brazos, Upper and Lower Colorado, Trinity-San Jacinto, Brazos-Colorado, Colorado-Lavaca, Lavaca, Guadalupe, San Antonio, Nueces, Nueces-Rio Grande, and Pecos river basins. Record low stream flow (bright red shading in Figure 5) was seen in the Pecos, Neches, Nueces-Rio Grande, and Lower Colorado river basins.

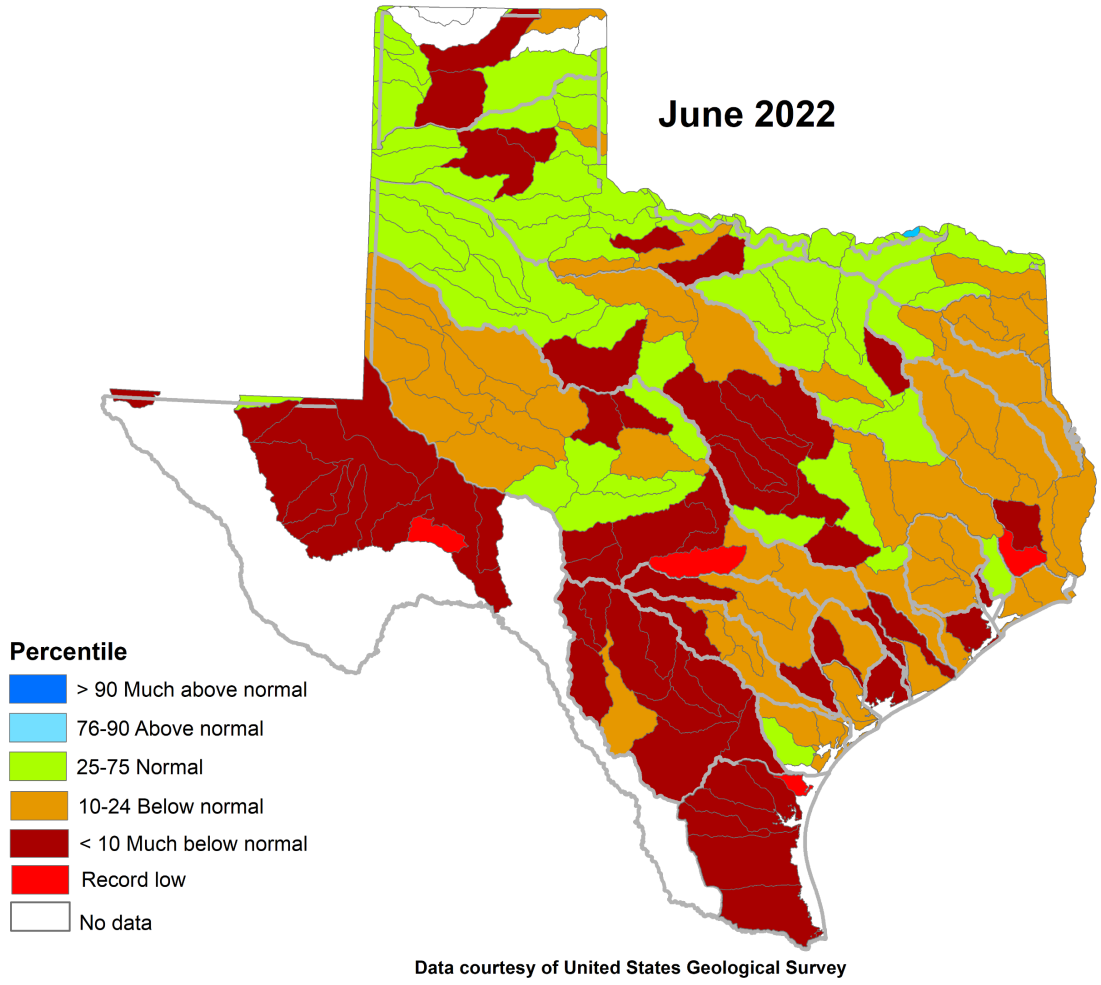


Figure 5: Runoff percentiles by the U.S. Geological Survey's Hydrologic Unit Code

SOIL MOISTURE

At the end of June 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. Low soil moisture [< 0.15 cubic meters of water per bulk cubic meter soil (m^3/m^3)] was seen in portions of all climate divisions, particularly in the High Plains, Trans Pecos, Low Rolling Plains, Southern, South Central, Lower Valley, and East Texas climate divisions.

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 northeastern High Plains, eastern North Central, small areas in northern and southern South Central, southeastern Southern, and portions of the Upper Coast climate divisions.

Compared to conditions at the end of May 2022, soil moisture content increased [blue shading in Figure 6(b)] with a maximum of 0.08 m^3/m^3, in northwestern High Plains, northwestern Trans Pecos, portions of the Edwards Plateau, southern North Central, central South Central, northeastern Southern, and portions of the Upper Coast climate divisions.

Soil moisture content decreased [red shading in Figure 6(b)] in the High Plains, northeastern Trans Pecos, northern and central Edwards Plateau, northeastern South Central, much of North Central, areas of Southern, East Texas, Lower Valley, and eastern portions of the Upper Coast climate divisions.

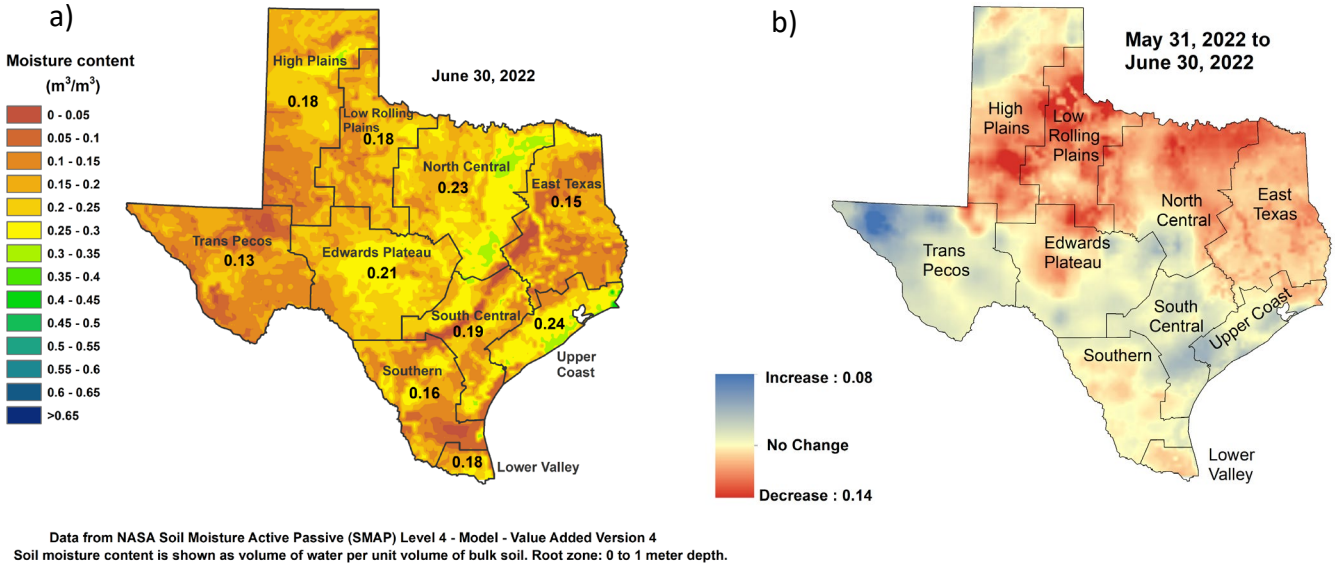
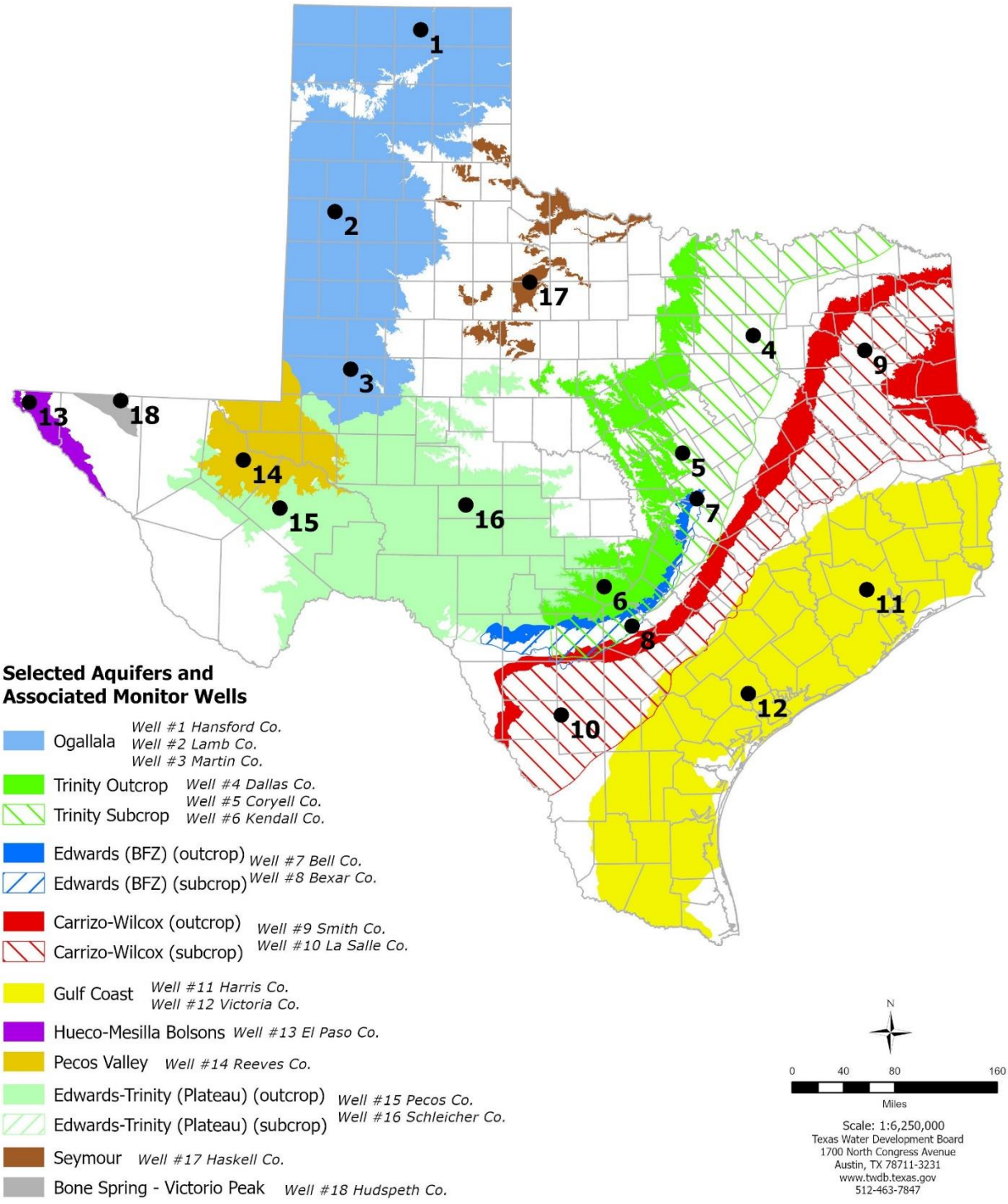


Figure 6: (a) Root zone soil moisture conditions in June 2022 and (b) the difference in root zone soil moisture between end-May 2022 and end-June 2022



JUNE 2022 GROUNDWATER LEVELS IN MONITORING WELLS

Water-level measurements were available for 17 key monitoring wells in the state. The recorder in one well (#15 on map) was offline during the reporting period. Water levels rose in three monitoring wells since the beginning of June, ranging from an increase of 0.05 feet in the El Paso County Hueco-Mesilla Bolsons Aquifer well (#13 on map) to 0.86 feet in the Bell County Edwards (Balcones Fault Zone) Aquifer well (#7 on map). Water levels declined in 14 monitoring wells, ranging from a decline of -0.04 feet in the Martin County Ogallala Aquifer well (#3 on map) to -17.74 feet in the Kendall County Trinity Aquifer well (#6 on map). The J-17 well (#8 on map) in San Antonio recorded a water level of 94.50 feet below land surface or 636.50 feet above mean sea level. Water levels are 3.50 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	June (depth to water, feet)	May (depth to water, feet)	Month Change	Year Change	Historical Change*	First Measured (year)
(1) Hansford 0354301	162.17	162.25	0.08	NA	-92.05	1951
(2) Lamb 1053602	152.91	152.83	-0.08	-0.84	-124.74	1951
(3) Martin 2739903	144.81	144.77	-0.04	-0.31	-39.92	1964
(4) Dallas 3319101	496.76	495.10	-1.66	-11.14	-274.76	1954
(5) Coryell 4035404	543.62	536.04	-7.58	-11.87	-251.62	1955**
(6) Kendall 6802609	216.17	198.43	-17.74	-69.96	-156.17	1975
(7) Bell 5804816	117.89	118.75	0.86	10.60	5.62	2008
(8) Bexar 6837203	94.50	86.60	-7.90	-24.70	-47.86	1932
(9) Smith 3430907	439.49	438.64	-0.85	-3.26	-139.49	1977**
(10) La Salle 7738103	518.13	510.16	-7.97	-31.28	-265.06	2003
(11) Harris 6514409	184.12	182.51	-1.61	2.11	-48.62*	1947**
(12) Victoria 8017502	33.39	32.83	-0.56	-1.45	0.61	1958**
(13) El Paso 4913301	299.79	299.84	0.05	-0.97	-67.89	1964**
(14) Reeves 4644501	164.60	158.65	-5.95	NA	-72.51	1952
(15) Pecos 5216802	NA	NA	NA	NA	NA	1976
(16) Schleicher 5512134	315.45	314.27	-1.18	-12.61	-13.55	2003
(17) Haskell 2135748	46.87	46.25	-0.62	NA	-3.87	2002
(18) Hudspeth 4807516	153.84	152.98	-0.86	0.87	-49.92	1966

*** Change since the original measurement taken on the date indicated in the last column.**

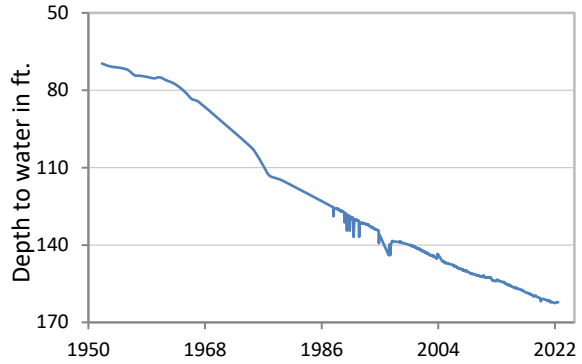
**** Measurement not shown on the hydrograph.**

NA (not available)

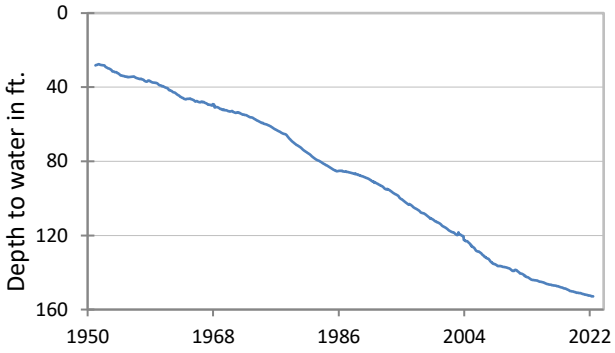
All data are provisional and subject to revision

JUNE 2022 MONITORING WELL HYDROGRAPHS

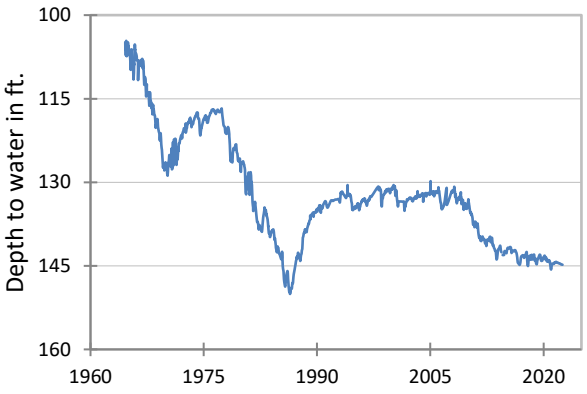
(1) State Well #03-54-301
Near Spearman, Hansford County
Ogallala Aquifer



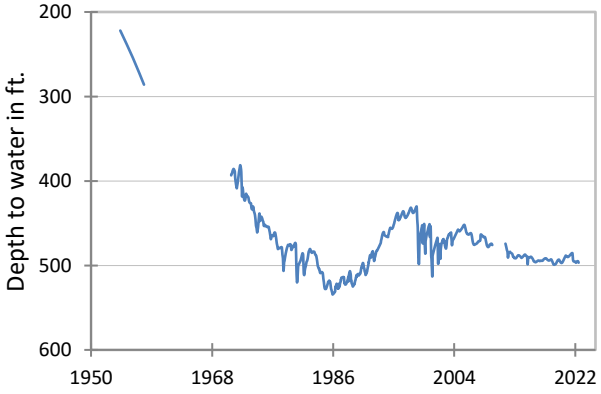
(2) State Well #10-53-602
Near Earth, Lamb County
Ogallala Aquifer



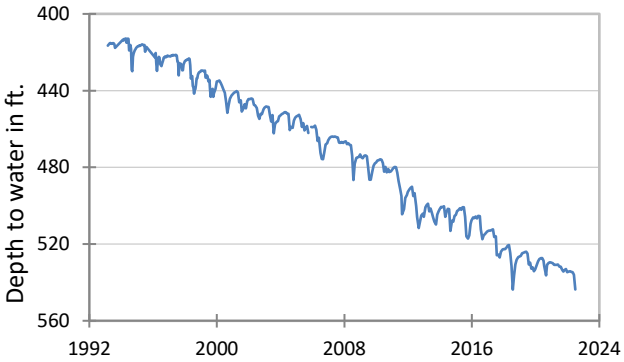
(3) State Well #27-39-903
Northwest Martin County
Ogallala Aquifer



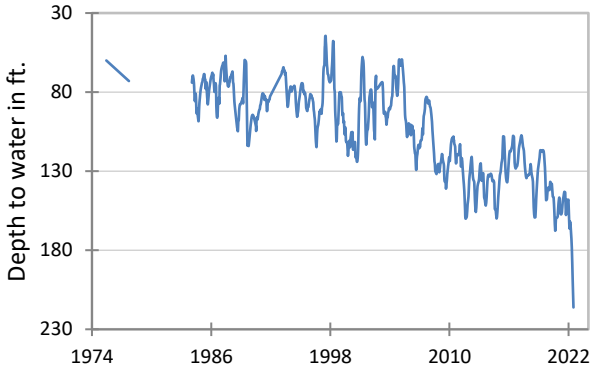
(4) State Well #33-19-101
Southeast Dallas, Dallas County
Twin Mountains Formation-Trinity Aquifer



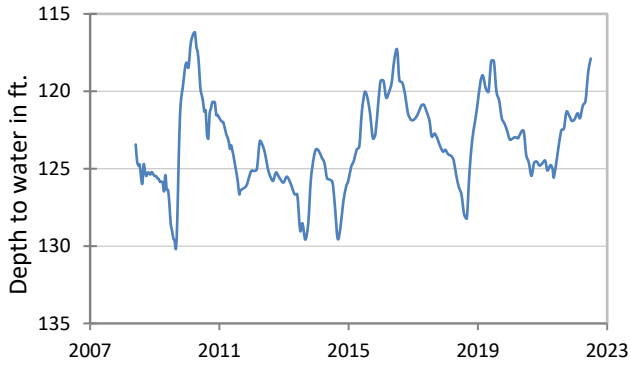
(5) State Well #40-35-404
Gatesville, Coryell County
Hosston Formation-Trinity Aquifer



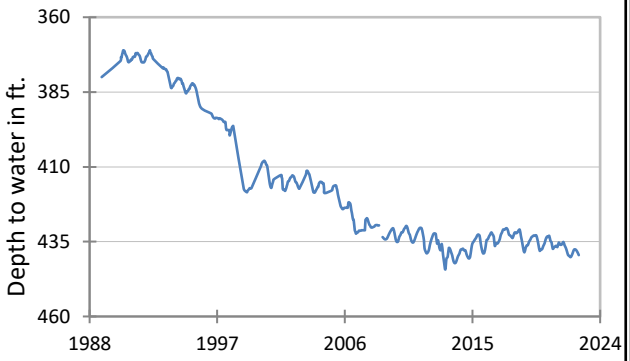
(6) State Well #68-02-609
Waring, Kendall County
Travis Peak Formation-Trinity Aquifer



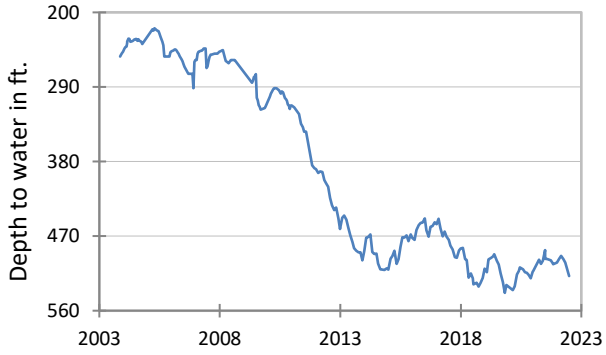
(7) State Well #58-04-816
Near Salado, Bell County
Edwards (Balcones Fault Zone) Aquifer



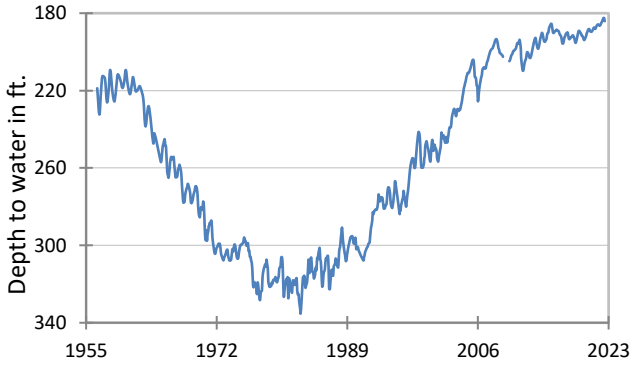
(9) State Well #34-30-907
Red Springs, Smith County
Carrizo-Wilcox Aquifer



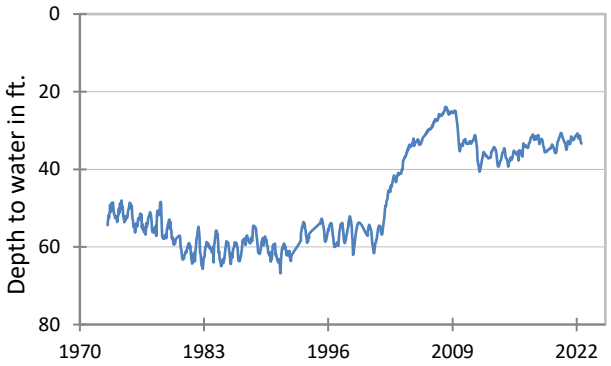
(10) State Well #77-38-103
Near Cotulla, La Salle County
Carrizo-Wilcox Aquifer



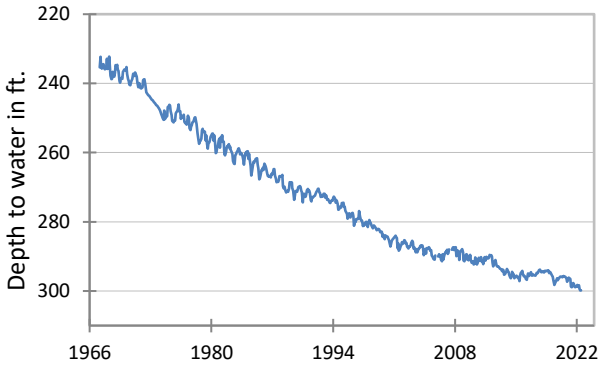
(11) State Well #65-14-409
North Houston, Harris County
Evangeline Formation-Gulf Coast Aquifer



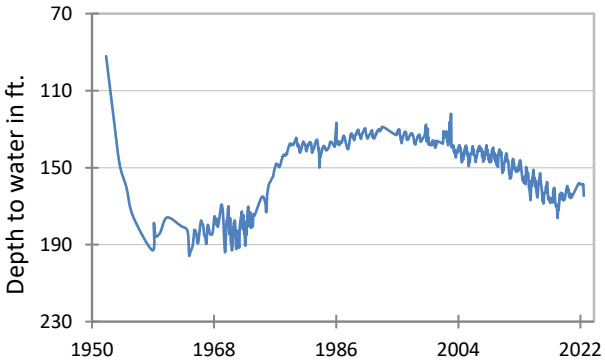
(12) State Well #80-17-502
Near Bloomington, Victoria County
Lissie Formation-Gulf Coast Aquifer



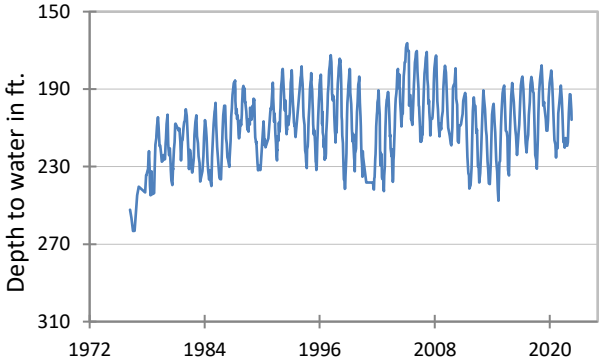
(13) State Well #49-13-301
El Paso, El Paso County
Hueco-Mesilla Bolsons Aquifer



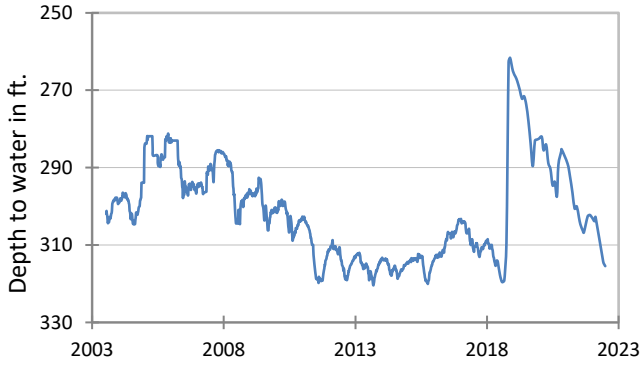
(14) State Well #46-44-501
Near Pecos, Reeves County
Pecos Valley Aquifer



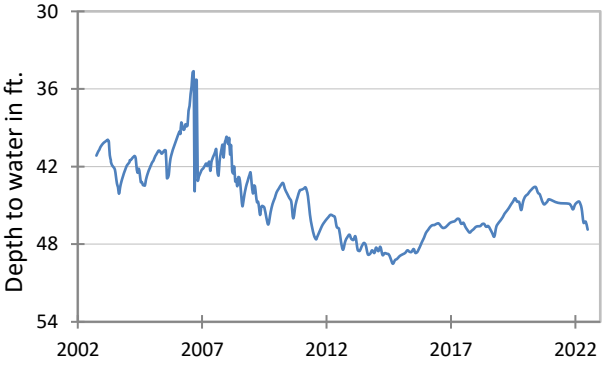
***(15) State Well #52-16-802**
Fort Stockton, Pecos County
Edwards-Trinity (Plateau) Aquifer



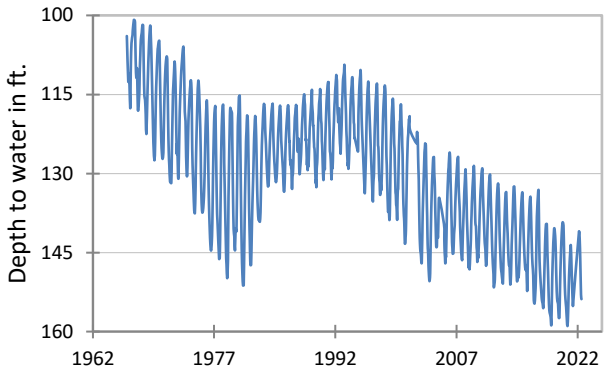
(16) State Well #55-12-134
Eldorado, Schleicher County
Edwards-Trinity (Plateau) Aquifer



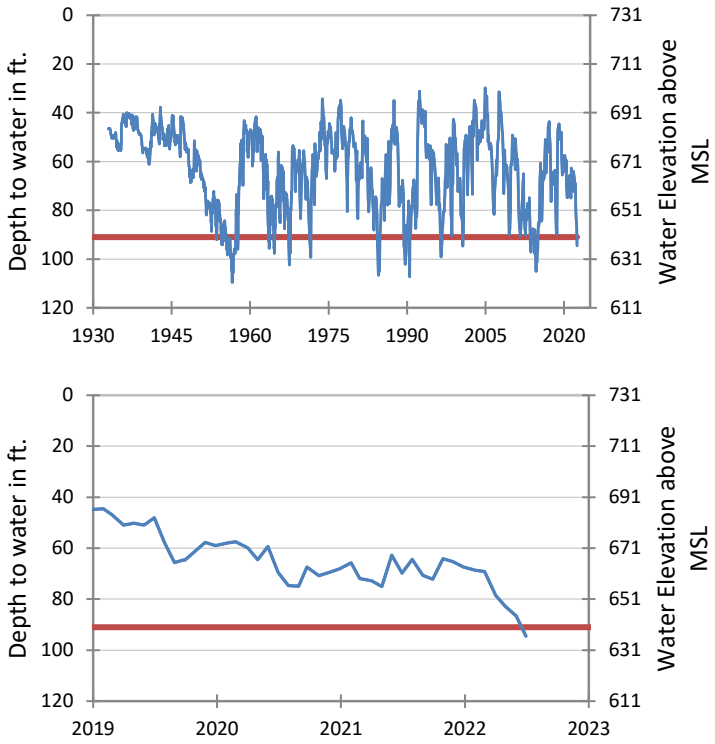
(17) State Well #21-35-748
Near O'Brien, Haskell County
Seymour Aquifer



(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

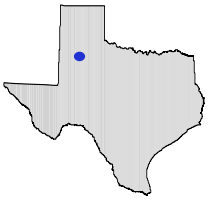


The late June water-level measurement in this Edwards (Balcones Fault Zone) Aquifer well, located at an elevation of 731 feet above mean sea level, was 94.50 feet below land surface, or 636.50 feet above mean sea level. This was 7.90 feet below last month's measurement, 24.70 feet below last year's measurement, and 47.86 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 June 2022, Stage 3 drought restrictions were in effect because the aquifer remained below the Stage 3 critical management level.

***Recorder well #15 was offline in June 2022 and did not record data.**

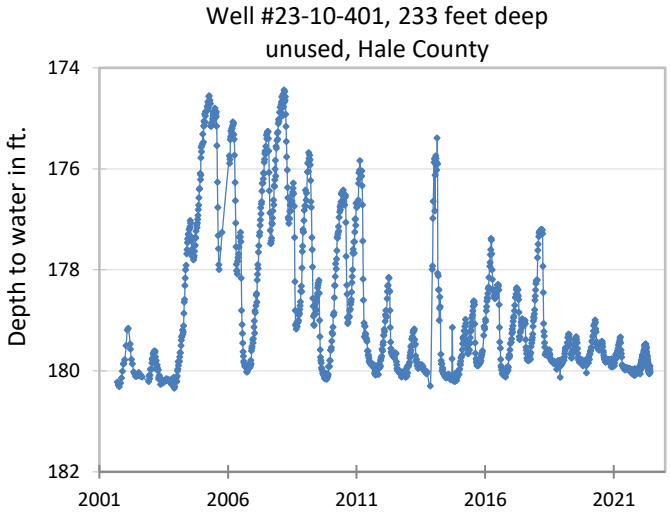
HYDROGRAPH OF THE MONTH



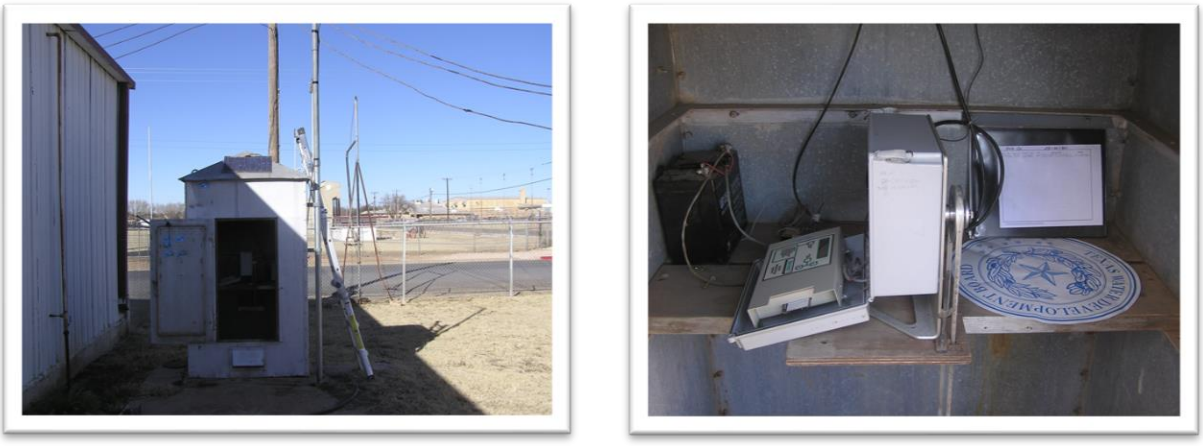
Each month this space features a new hydrograph (marked with the • symbol on the map) depicting different aquifers and their conditions in Texas.

Edwards-Trinity (High Plains) Aquifer

The Edwards-Trinity (High Plains) Aquifer is a minor aquifer that underlies about 9,000 square miles of the Ogallala Aquifer in western Texas and eastern New Mexico. Water-bearing units include the Antlers Formation (sandstone; Trinity Group) and the overlying Comanche Peak and Edwards formations (limestone). Regional groundwater flow in the aquifer is to the southeast, but locally flow is determined by the presence of Ogallala-filled paleochannels incised into the Cretaceous limestone. Recharge to the aquifer is primarily due to downward leakage from the younger Ogallala Aquifer. The greatest amount of recharge most likely occurs where low-permeability clay layers of the Duke Creek and Kiamichi formations, which lie between the Edwards-Trinity (High Plains) and Ogallala aquifers, are missing, thin, or relatively permeable. Groundwater typically contains more total dissolved solids than the overlying Ogallala Aquifer. Water quality is generally slightly saline, with total dissolved solids ranging from 1,000 to 2,000 milligrams per liter but can range from 400 to more than 3,000 milligrams per liter. Groundwater is poorest in quality, with total dissolved solids in excess of 20,000 milligrams per liter, where the aquifer is overlain by saline lakes or the gypsum-rich Tahoka and Double Lakes formations. Freshwater saturated thickness in the aquifer averages 126 feet.



The initial measurement of 180.22 feet below land surface was recorded by a USGS automatic water-level recorder in September 2001. In January 2006, the TWDB took over monitoring efforts with an automatic water-level recorder as well. 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 level that are likely attributed to nearby pumping for irrigation. In summer months, water levels typically reach 180 feet below land surface. In late winter months, the water level can recover 1.0 to 5.5 feet. In the last four years, the water level has only recovered 0.3 to 0.8 feet.



Far away (left), and close-up (right) images of well #23-10-401.