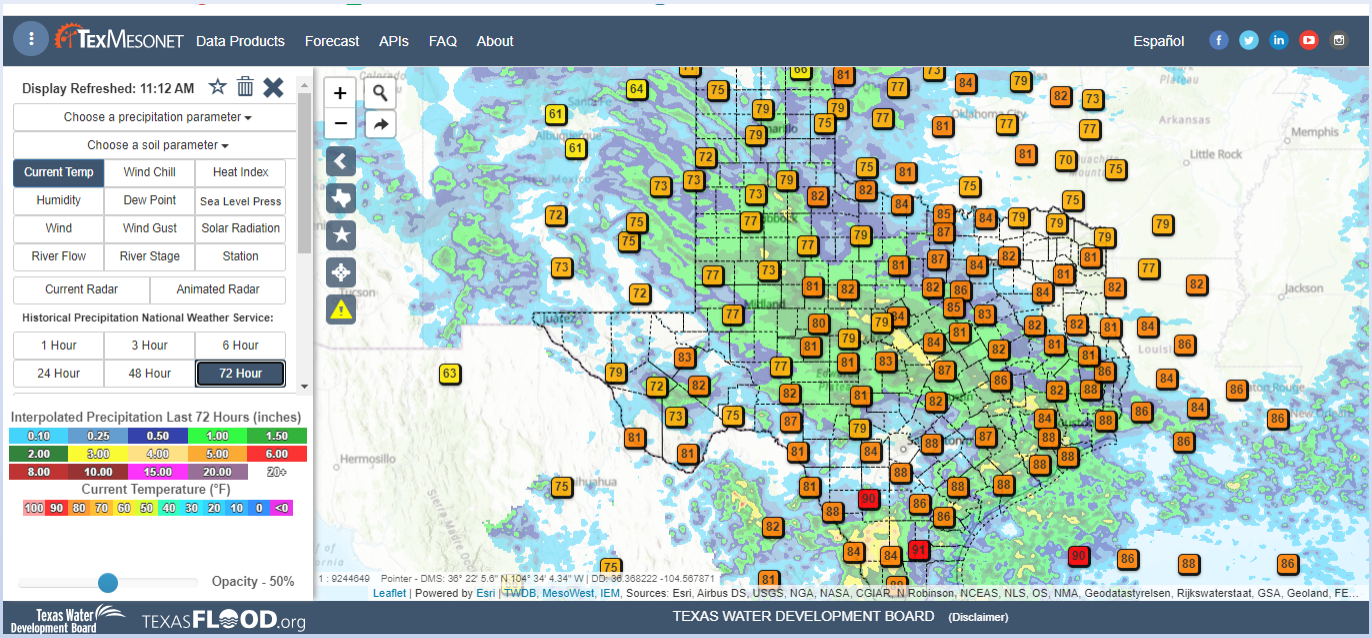
Texas Water Conditions Report

August 2023



Water News:

The Texas Water Development Board's TexMesonet team installed their 100th station at the Edwards Aquifer Authority (EAA) Field Research Park in San Antonio. These stations provide on-the-ground weather data that supports improved weather models and forecasts that contribute to improved public safety, agricultural productivity, and scientific research. For more information visit: https://texaswaternewsroom.org/videos/texmesonet_data_collection_network_expands_coverage_through_100th_twdb_weather_station.html and https://www.texmesonet.org/.

RAINFALL

In August, much of the state received below average amounts of rainfall [yellow, orange, and red shading, Figure 1(a)]. Above average rainfall [light and dark blue shading, Figure 1(a)] was seen in the High Plains, Trans Pecos, Edwards Plateau, Southern, northern Lower Valley, southern and northwestern South Central, portions of northern Low Rolling Plains, areas of southern North Central, and central East Texas climate divisions.

Compared to historical data from 1991–2020, much of the state received 0–75 percent of normal rainfall [yellow, orange shading, Figure 1(b)]. 125–200 percent of normal rainfall [green shading, Figure 1(b)] was received in areas of the Trans Pecos, southern Edwards Plateau, Southern, northern Lower Valley, southern South Central, small areas of southern North Central, and northern Low Rolling Plains climate divisions. 200–400 percent of normal rainfall [light to dark blue shading, Figure 1(b)] was received in northern and southeastern Trans Pecos, northern Southern, and southern South Central climate divisions.

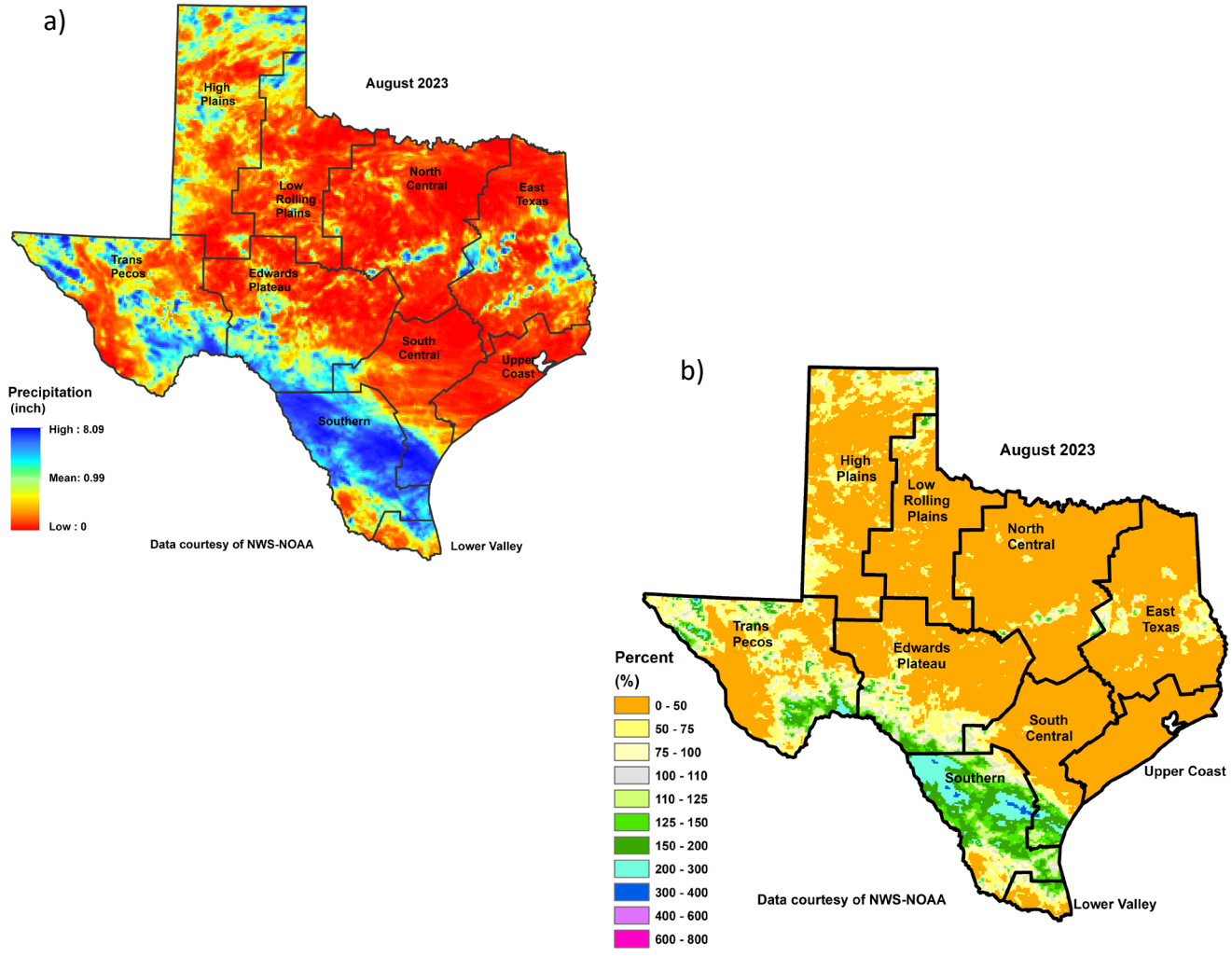


Figure 1: (a) Monthly accumulated rainfall, and (b) Percent of normal rainfall

DROUGHT

At the end of August, 98.45% of the state was in the D0 (abnormally dry) through D4 (exceptional drought) categories (**Figure 2**). That is an increase of 19.65 % from the end of July.

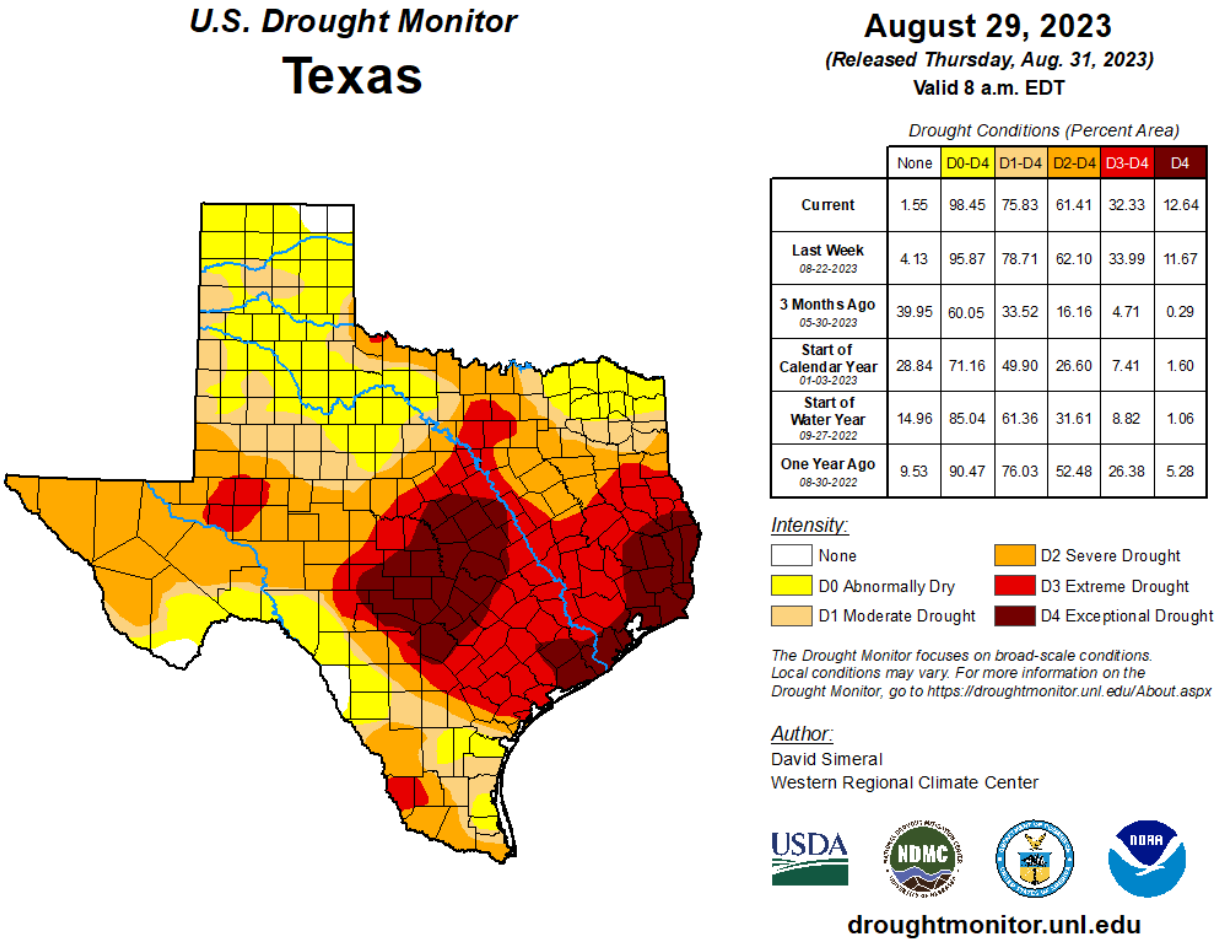


Figure 2. The percentage of drought in Texas according to the U.S. Drought Monitor map as of August 29, 2023.

RESERVOIR STORAGE

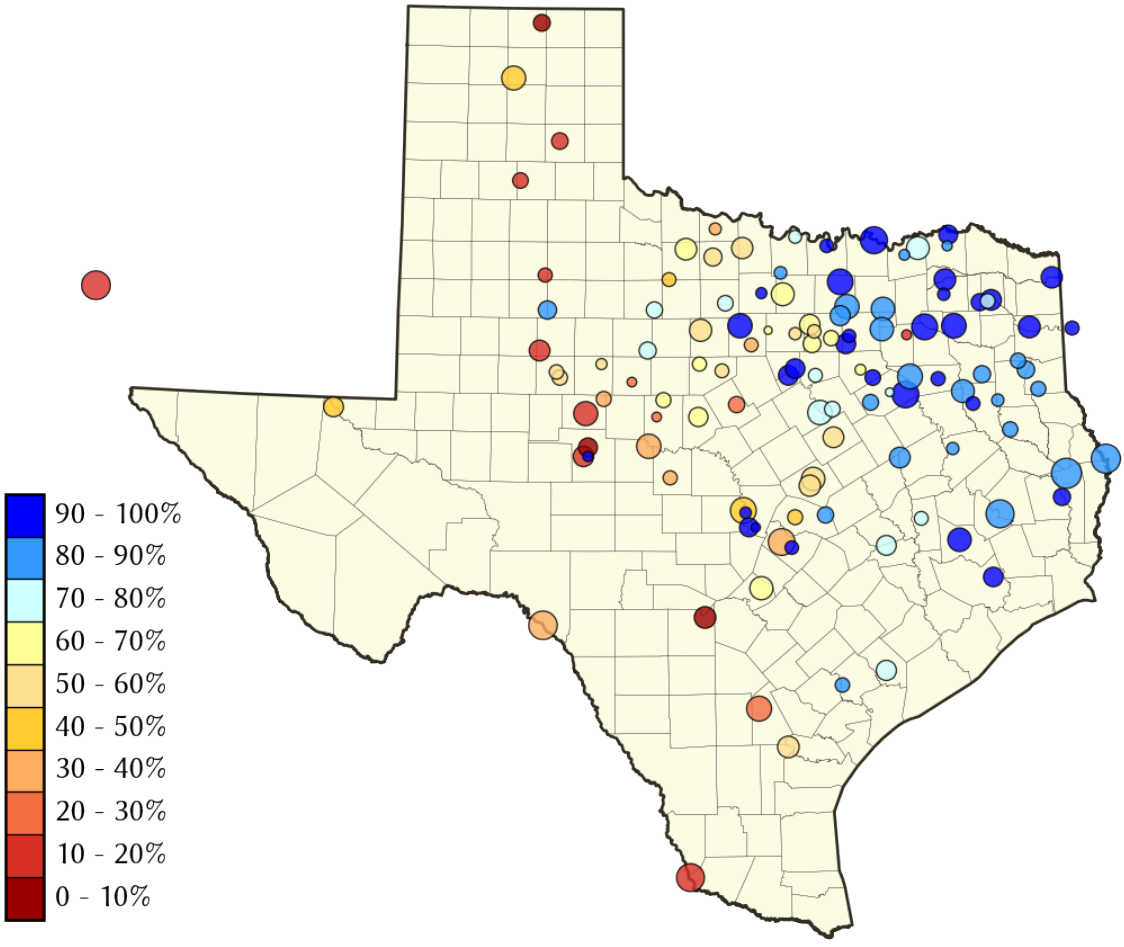


Figure 3. Reservoir conservation storage at end-August expressed as percent full (%)

Out of 119 reservoirs in the state, only 3 reservoirs held 100 percent conservation storage capacity (Figure 3). Forty five reservoirs were at or above 90 percent full. Fifteen reservoirs remained below 30 percent full: Abilene (20.7 percent full), Choke canyon (27.9 percent full), Hords Creek (24.8 percent full), New Terrell City (19.1 percent full), Proctor (28.1 percent full), E.V. Spence (16.0 percent full), O.C. Fisher (2.3 percent full), J.B. Thomas (19.1 percent full), Falcon (10.4 percent full), Greenbelt (11.7 percent full), Mackenzie (10.1 percent full), Medina Lake (4.4 percent full), Palo Duro Reservoir (7.0 percent full), Twin Buttes (18.5 percent full), and the White River Lake (19.3 percent full). Elephant Butte Reservoir (New Mexico) was 19.5 percent full (Figure 3).

Reservoir conservation storage by climate division was at or above normal [storage ≥70 percent full, Figure 4(a)] for East Texas (87.4 percent full), North Central (80.9 percent full), and the Upper Coast (84.4 percent full) climate divisions. Conservation storage was moderately low (Figure 4(a)) for the Low Rolling Plains (52.2 percent full), and South Central (43.9 percent full) climate divisions. The High Plains (38.9 percent full), Edwards Plateau (35.8 percent full), and the Trans Pecos (23.7 percent full) climate divisions had severely low conservation storage (Figure 4(a)), and the Southern climate division (19.9 percent full) had extremely low conservation storage (Figure 4(a)).

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

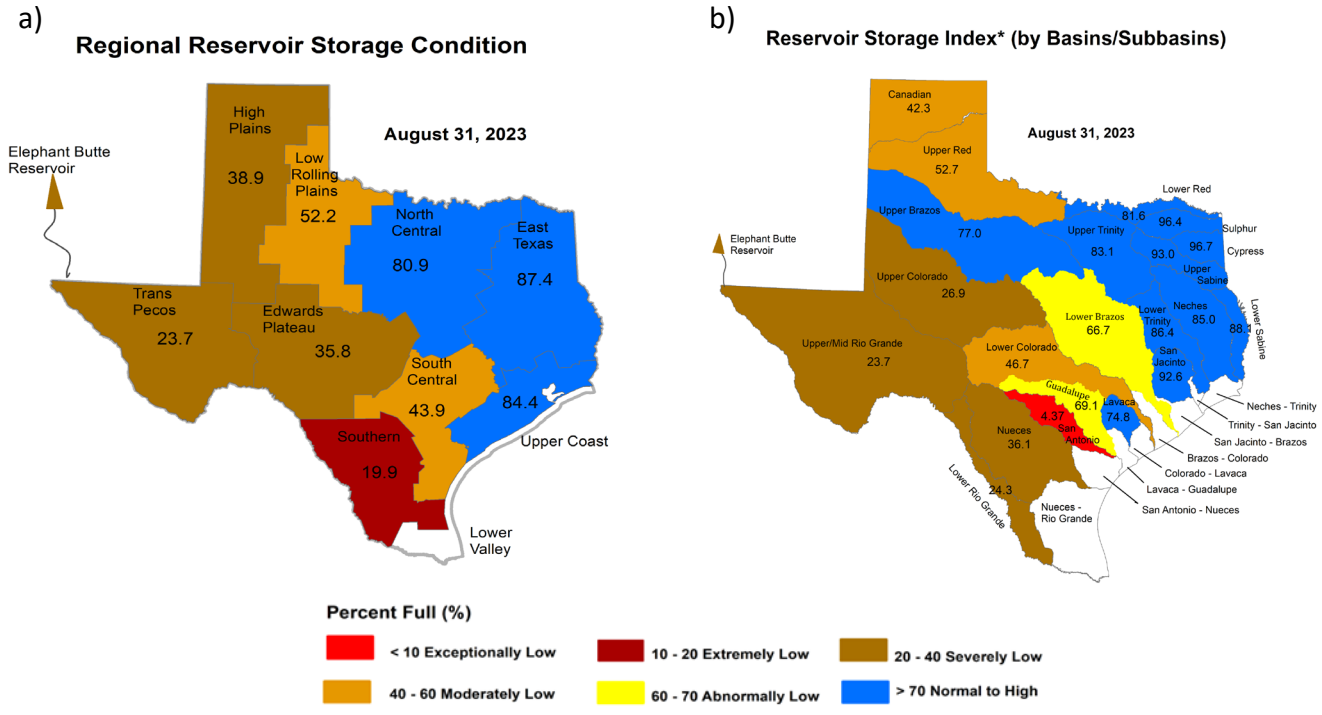


Figure 4: (a) Reservoir Storage Index* by climate division, and (b) Reservoir Storage Index* by basin/sub-basin.

*Reservoir Storage Index is defined as the percent full of conservation storage capacity. Percent full is calculated as the combined conservation storage of all reservoirs in a climate region or a basin/subbasin, excluding dead pool storage.

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS							
Name of lake or reservoir	Storage capacity	Storage at end-August 2023		Storage change from end-Jul 2023		Storage change from end-Aug 2022	
	(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)**	(%)
Abilene, Lake	7,900	1,635	20.7	-310	-3.9	-1,807	-22.9
Alan Henry Reservoir	96,207	84,421	87.7	-2,750	-2.9	10,211	10.6
*Amistad Reservoir (Texas & Mexico)	3,275,532	1,059,414	32.3	7,807	0.2	149,319	4.6
*Amistad Reservoir (Texas)	1,840,849	665,627	36.2	-4,812	0.0	18,692	1.0
Amon G Carter, Lake	19,266	16,733	86.9	-1240	-7.4	-975	-5.1
Aquilla Lake	43,243	33,277	77.0	-4,445	-10.3	4,448	10.3
Arlington, Lake	40,157	27,965	69.6	-1,202	-3.0	-12,192	-30.4
Arrowhead, Lake	230,359	133,954	58.2	-10,462	-4.5	-34,166	-14.8
Athens, Lake	29,503	26,848	91.0	-1,618	-5.5	-753	-2.6
*Austin, Lake	23,972	23,019	96.0	47	0.2	216	0.9
B A Steinhagen Lake	69,186	68,677	99.3	10,651	15.4	3,313	4.8
Bardwell Lake	43,856	40,093	91.4	-3,402	-7.8	1,862	4.2
Belton Lake	432,631	252,388	58.3	-16,321	-3.8	-80,440	-18.6
Benbrook Lake	85,648	56,475	65.9	-18,930	-22.1	-1,354	-1.6
Bob Sandlin, Lake	192,417	183,192	95.2	-6,655	-3.5	434	0.2
Bois d'Arc Lake	367,609	280,382	76.3	-15,014	-4.1	141,047	38.4
Bonham, Lake	11,027	9,668	87.7	-1,024	-9.3	373	3.4
Brady Creek Reservoir	28,808	10,719	37.2	-870	-3.0	-2,145	-7.4
Bridgeport, Lake	372,183	234,673	63.1	-25,083	-6.7	-58,139	-15.6
*Brownwood, Lake	130,868	84,118	64.3	-7,411	-5.7	-4,378	-3.3
Buchanan, Lake	822,207	395,743	48.1	-51,186	-6.2	-138,182	-16.8
Caddo, Lake	29,898	29,898	100.0	0	0.0	0	0.0
Canyon Lake	378,781	257,976	68.1	-12,791	-3.4	-71,535	-18.9
Cedar Creek Reservoir in Trinity	644,686	550,526	85.4	-37,025	-5.7	8,614	1.3
Champion Creek Reservoir	41,580	21,781	52.4	-867	-2.1	-3,122	-7.5
Cherokee, Lake	40,094	33,813	84.3	-4,096	-10.2	-1,096	-2.7
Choke Canyon Reservoir	662,820	185,089	27.9	-9,543	-1.4	-43,209	-6.5
*Cisco, Lake	29,003	18,669	64.4	-876	-3.0	-3,131	-10.8
Coleman, Lake	38,075	25,101	65.9	-1,325	-3.5	-4,508	-11.8
Colorado City, Lake	31,040	25,564	82.4	-2,716	-8.8	-1,691	-5.4
*Coleto Creek Reservoir	30,758	15,401	50.1	-908	-3.0	-2,400	-7.8
Conroe, Lake	417,577	382,455	91.6	-17,631	-4.2	-4,365	-1.0
Corpus Christi, Lake	256,062	147,057	57.4	-15,050	-5.9	-51,534	-20.1
Crook, Lake	9,195	8,233	89.5	-732	-8.0	485	5.3
Cypress Springs, Lake	66,756	63,781	95.5	-2,523	-3.8	3,131	4.7
E. V. Spence Reservoir	517,272	83,002	16.0	-4,104	0.0	-18,936	-3.7
Eagle Mountain Lake	179,880	120,799	67.2	-10,066	-5.6	-27,553	-15.3
Elephant Butte Reservoir (Texas)	852,491	166,068	19.5	-31,659	-3.7	125,443	14.7
Elephant Butte Reservoir (Total Storage)	1,960,900	384,416	19.6	-73,284	-3.7	290,377	14.8
*Falcon Reservoir (Texas & Mexico)	2,646,817	404,946	15.3	-45,204	-1.7	47,602	1.8
*Falcon Reservoir (Texas)	1,551,007	160,621	10.4	-38,917	-2.5	-27,042	-1.7
Fork Reservoir, Lake	605,061	558,679	92.3	-28,861	-4.8	89,084	14.7
Fort Phantom Hill, Lake	70,030	49,801	71.1	-3,326	-4.7	766	1.1
Georgetown, Lake	38,005	18,813	49.5	-2,594	-6.8	-2,539	-6.7
Gibbons Creek Reservoir	25,721	19,767	76.9	-1,754	-6.8	451	1.8
Graham, Lake	45,288	33,843	74.7	-2,736	-6.0	-4,330	-9.6
Granbury, Lake	132,949	124,258	93.5	-5,532	-4.2	4,523	3.4

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS							
Name of lake or reservoir	Storage capacity	Storage at end-August 2023		Storage change from end-Jul 2023		Storage change from end-Aug 2022	
	(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)**	(%)
Continued							
Granger Lake	51,822	42,076	81.2	-5,672	-10.9	-2,506	-4.8
Grapevine Lake	163,064	142,853	87.6	-6,979	-4.3	-19,027	-11.7
Greenbelt Lake	59,968	7,041	11.7	-419	0.0	-1,093	-1.8
*Halbert, Lake	6,033	4,578	75.9	-351	-5.8	-41	0.0
Hords Creek Lake	8,109	2,011	24.8	-170	-2.1	-655	-8.1
Houston County Lake	17,113	14,762	86.3	-1,206	-7.0	-340	-2.0
Houston, Lake	132,318	126,877	95.9	-3,958	-3.0	-5,441	-4.1
Hubbard Creek Reservoir	313,298	173,837	55.5	-9,985	-3.2	-55,445	-17.7
Hubert H Moss Lake	24,058	21,926	91.1	-895	-3.7	-227	0.0
Inks, Lake	13,729	13,139	95.7	165	1.2	173	1.3
J. B. Thomas, Lake	199,931	38,123	19.1	-2,994	-1.5	-17,831	-8.9
Jacksonville, Lake	25,670	23,752	92.5	-1,091	-4.3	-45	0.0
Jim Chapman Lake (Cooper)	260,332	243,307	93.5	-17,025	-6.5	50,247	19.3
Joe Pool Lake	149,629	139,591	93.3	-7,186	-4.8	-1,638	-1.1
Kemp, Lake	245,307	162,555	66.3	-21,650	-8.8	12,797	5.2
Kickapoo, Lake	86,345	47,316	54.8	-3,294	-3.8	-8,433	-9.8
Lavon Lake	409,757	333,737	81.4	-42,963	-10.5	11,672	2.8
Leon, Lake	27,762	14,684	52.9	-1,375	-5.0	-3,693	-13.3
Lewisville Lake	563,228	470,883	83.6	-49,462	-8.8	-10,684	-1.9
Limestone, Lake	203,780	173,911	85.3	-10,571	-5.2	17,627	8.7
*Livingston, Lake	1,603,504	1,386,459	86.5	-129,799	-8.1	-196,964	-12.3
*Lost Creek Reservoir	11,950	10,919	91.4	-342	-2.9	13	0.1
Lyndon B Johnson, Lake	112,778	110,853	98.3	-704	0.0	-640	0.0
Mackenzie Reservoir	46,450	4,672	10.1	-192	0.0	1,588	3.4
Marble Falls, Lake	7,597	7,227	95.1	0	0.0	-6	0.0
Martin, Lake	75,726	62,435	82.4	-5,878	-7.8	-1,880	-2.5
Medina Lake	254,823	11,137	4.4	-916	0.0	-9,324	-3.7
Meredith, Lake	500,000	233,580	46.7	-5,279	-1.1	71,530	14.3
Millers Creek Reservoir	26,768	12,943	48.4	-1,177	-4.4	-5,813	-21.7
*Mineral Wells, Lake	5,273	3,533	67.0	-298	-5.7	-952	-18.1
Monticello, Lake	34,740	27,753	79.9	-1,357	-3.9	17	0.0
Mountain Creek, Lake	22,850	22,062	96.6	-788	-3.4	-788	-3.4
Murvaul, Lake	38,285	32,652	85.3	-2,558	-6.7	-5,633	-14.7
Nacogdoches, Lake	39,522	34,127	86.3	-2,182	-5.5	176	0.4
Nasworthy	9,615	8,745	91.0	586	6.1	463	4.8
Navarro Mills Lake	49,827	42,674	85.6	-4,503	-9.0	3,702	7.4
New Terrell City Lake	8,583	1,637	19.1	-267	-3.1	-5,499	-64.1
Nocona, Lake (Farmers Crk)	21,444	15,741	73.4	-1,053	-4.9	-1,733	-8.1
North Fork Buffalo Creek Reservoir	15,400	4,989	32.4	-818	-5.3	-3,197	-20.8
O' the Pines, Lake	268,566	268,566	100.0	0	0.0	27,203	10.1
O. C. Fisher Lake	115,742	2,680	2.3	-424	0.0	-1,565	-1.4
*O. H. Ivie Reservoir	554,340	174,453	31.5	-13,083	-2.4	-62,206	-11.2
Oak Creek Reservoir	39,210	14,560	37.1	-1,094	-2.8	-6,360	-16.2

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	(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)**	(%)
Continued							
Palestine, Lake	367,303	326,506	88.9	-22,593	-6.2	1,502	0.4
Palo Duro Reservoir	61,066	4,281	7.0	-989	-1.6	4,037	6.6
Palo Pinto, Lake	26,766	9,377	35.0	-1,757	-6.6	-7,778	-29.1
Pat Cleburne, Lake	26,008	18,327	70.5	-1,807	-6.9	3,486	13.4
*Pat Mayse Lake	113,683	110,934	97.6	-2,749	-2.4	5,751	5.1
Possum Kingdom Lake	538,139	502,548	93.4	-25,986	-4.8	32,146	6.0
Proctor Lake	54,762	15,361	28.1	-3,410	-6.2	-12,316	-22.5
Ray Hubbard, Lake	439,559	375,652	85.5	-33,573	-7.6	-25,993	-5.9
Ray Roberts, Lake	788,167	746,340	94.7	-23,250	-2.9	-3,571	0.0
Red Bluff Reservoir	151,110	72,373	47.9	-2,076	-1.4	-23,642	-15.6
Richland-Chambers Reservoir	1,087,839	1,000,093	91.9	-38,638	-3.6	84,768	7.8
Sam Rayburn Reservoir	2,857,077	2,399,616	84.0	-160,975	-5.6	6,125	0.2
Somerville Lake	150,293	110,040	73.2	-24,208	-16.1	3,454	2.3
Squaw Creek, Lake	151,250	149,957	99.1	-977	0.0	-1,293	0.0
Stamford, Lake	51,570	39,964	77.5	-3,827	-7.4	4,509	8.7
Stillhouse Hollow Lake	229,796	136,708	59.5	-7,708	-3.4	-43,494	-18.9
Striker, Lake	16,934	13,921	82.2	-1,853	-10.9	-1,552	-9.2
Sweetwater, Lake	12,267	6,153	50.2	-364	-3.0	-1,748	-14.2
*Sulphur Springs, Lake	17,747	16,835	94.9	-912	-5.1	4,154	23.4
Tawakoni, Lake	871,685	829,499	95.2	-35,911	-4.1	72,094	8.3
Texana, Lake	158,975	119,037	74.9	-14,522	-9.1	1,355	0.9
Texoma, Lake (Texas & Oklahoma)	2,487,601	2,385,609	95.9	-97,809	-4.1	-4771	-0.2
Texoma, Lake (Texas)	1,243,801	1,192,585	95.9	-48,895	-4.1	-2,385	-0.2
Toledo Bend Reservoir (Texas & Louisiana)	4,472,900	3,946,178	88.2	-175,268	-3.9	90,037	2.0
Toledo Bend Reservoir (Texas)	2,236,450	1,971,039	88.1	-87,634	-3.9	45,019	2.0
Travis, Lake	1,098,044	424,140	38.6	-32,333	-2.9	-126,739	-11.5
Twin Buttes Reservoir	182,454	33,666	18.5	-5,478	-3.0	-24,874	-13.6
Tyler, Lake	72,073	63,454	88.0	-4,693	-6.5	1,205	1.7
Waco, Lake	189,418	113,177	59.7	-9,793	-5.2	-9,064	-4.8
Waxahachie, Lake	11,060	7,712	69.7	-1,329	-12.0	-992	-9.0
Weatherford, Lake	17,812	9,474	53.2	-254	-1.4	-996	-5.6
White River Lake	29,880	5,764	19.3	-588	-2.0	1,623	5.4
Whitney, Lake	564,808	415,009	73.5	-27,098	-4.8	-7,084	-1.3
Worth, Lake	24,419	14,613	59.8	-1,275	-5.2	-4,377	-17.9
Wright Patman Lake	231,496	231,496	100.0	0	0.0	0	0.0
STATEWIDE TOTAL							
STATEWIDE TOTAL	**31,236,081**	**20,715,024**	**66.3**	**-2,458,960**	**-7.9**	**-1,521,222**	**-4.9**

*Total volume below elevation of conservation pool top is used as the 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.

SOIL MOISTURE

At the end of August 2023, root zone soil moisture was low [yellow, orange, Figure 5(a)] across the state. Areas of more severe dryness [brown shading, Figure 5(a)] were in the northern and southern High Plains, southern and northeastern Trans Pecos, Low Rolling Plains, eastern Edwards Plateau, southern and northeastern Southern, South Central, western North Central, and East Texas climate divisions. Average soil moisture [green shading, Figure 5(a)] was seen in portions of the northern Southern, and southern South Central climate divisions.

Compared to conditions at the end of July 2023, soil moisture increased [blue shading in Figure 5(b)] in the Trans Pecos, southwestern Edwards Plateau, Southern, southern South Central and a small portion of western East Texas climate divisions. Soil moisture decreased [red shading in Figure 5(b)] most significantly in the northern High Plains, northeastern North Central, northern East Texas, and Upper Coast climate divisions.

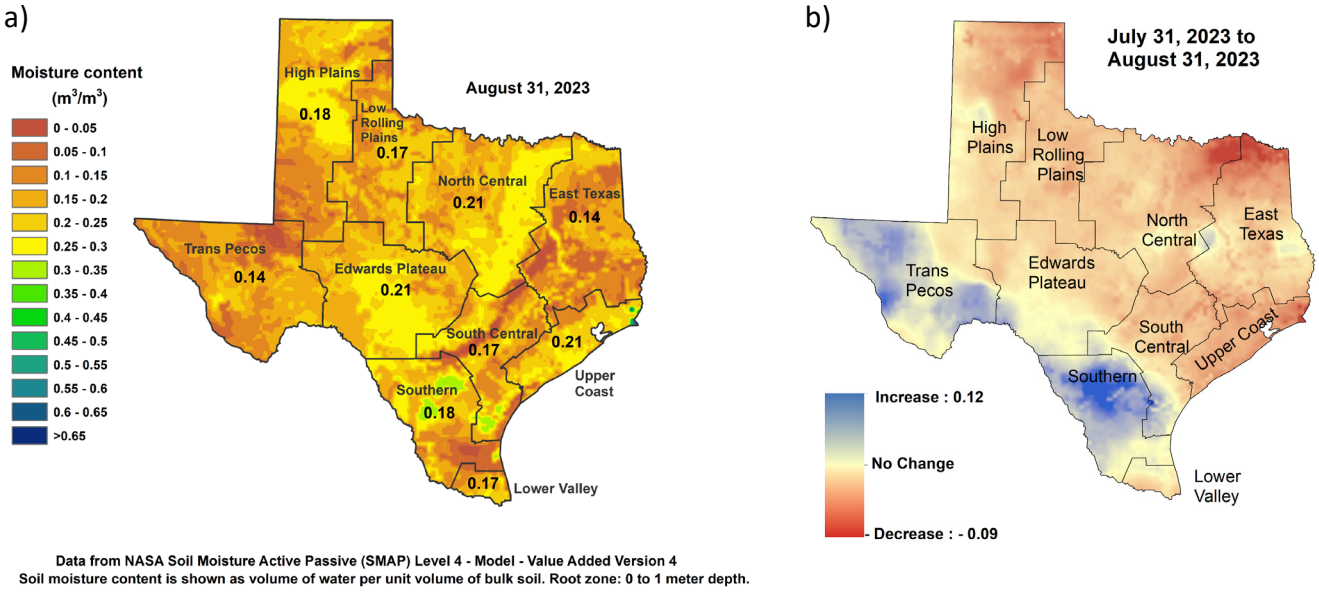


Figure 5: (a) Root zone soil moisture conditions in August 2023 and (b) the difference in root zone soil moisture between end-July 2023 and end-August 2023.

STREAMFLOW CONDITIONS

Normal streamflow (25–75th percentile, green shading, Figure 6) was recorded in parts of the Panhandle, Northern, Eastern, and Southern regions of Texas this month. Above normal streamflow (76–90th percentile, light blue shading, Figure 6) was seen in the Canadian (Lower Beaver watershed) and the Nueces-Rio Grande (South Corpus Christi Bay watershed) river basins.

Below normal streamflow (10–24th percentile, orange shading, Figure 6) was recorded in the Canadian, Upper Red, Lower Sabine, Neches, Neches-Trinity, San Jacinto, San Jacinto-Brazos (Austin Oyster watershed), Upper Trinity, Mid and Lower Brazos, Upper and Mid Colorado (Colorado Headwaters, South Concho, and San Saba watersheds), Lavaca, San Antonio, San Antonio-Nueces (Aransas watershed), Nueces (Nueces Headwaters, Hondo, and Atacosa watersheds), Nueces-Rio Grande (San Fernando watershed) river basins.

Much below normal stream flow (< 10th percentile, dark red shading, Figure 6) was seen in Upper and Lower Red, Lower Sabine, Neches, Lower Trinity, San Jacinto (West Fork watershed), San Jacinto-Brazos (West Galveston Bay watershed), Trinity-San Jacinto, Upper and Lower Brazos, Upper and Lower Colorado, Brazos-Colorado, Lavaca (Navidad watershed), Colorado-Lavaca, Lavaca-Guadalupe, Guadalupe, San Antonio-Nueces (Aransas Bay and Mission watersheds), Nueces (Upper Frio watershed), and Pecos river basins.

Record lows (bright red shading, Figure 6) were recorded in the Upper Red (Lower Prairie Dog Fork Red, North Witchita, Southern Beaver water sheds), and Neches (Pine Island Bayou watershed) river basins.

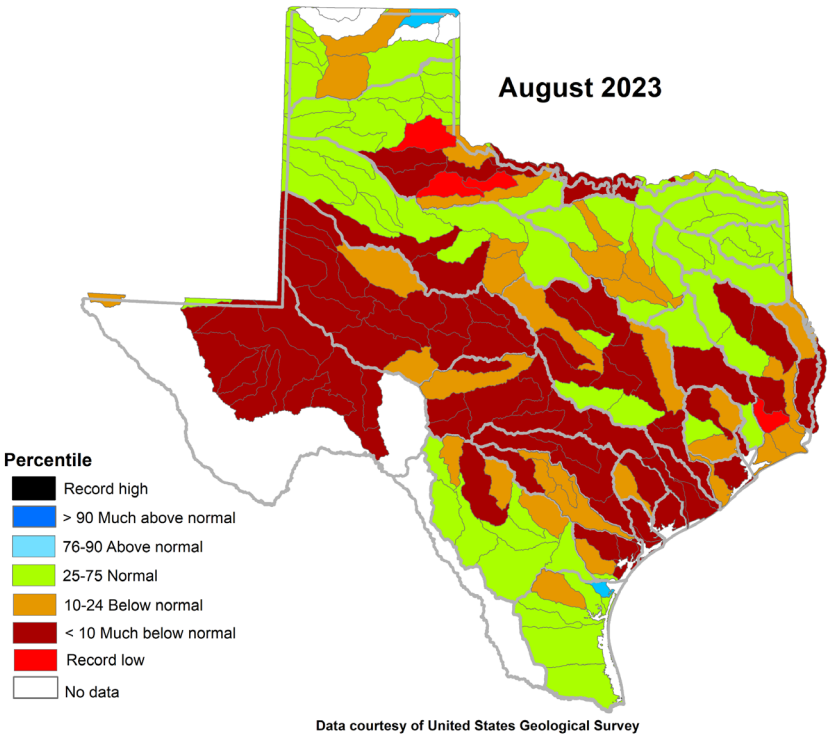
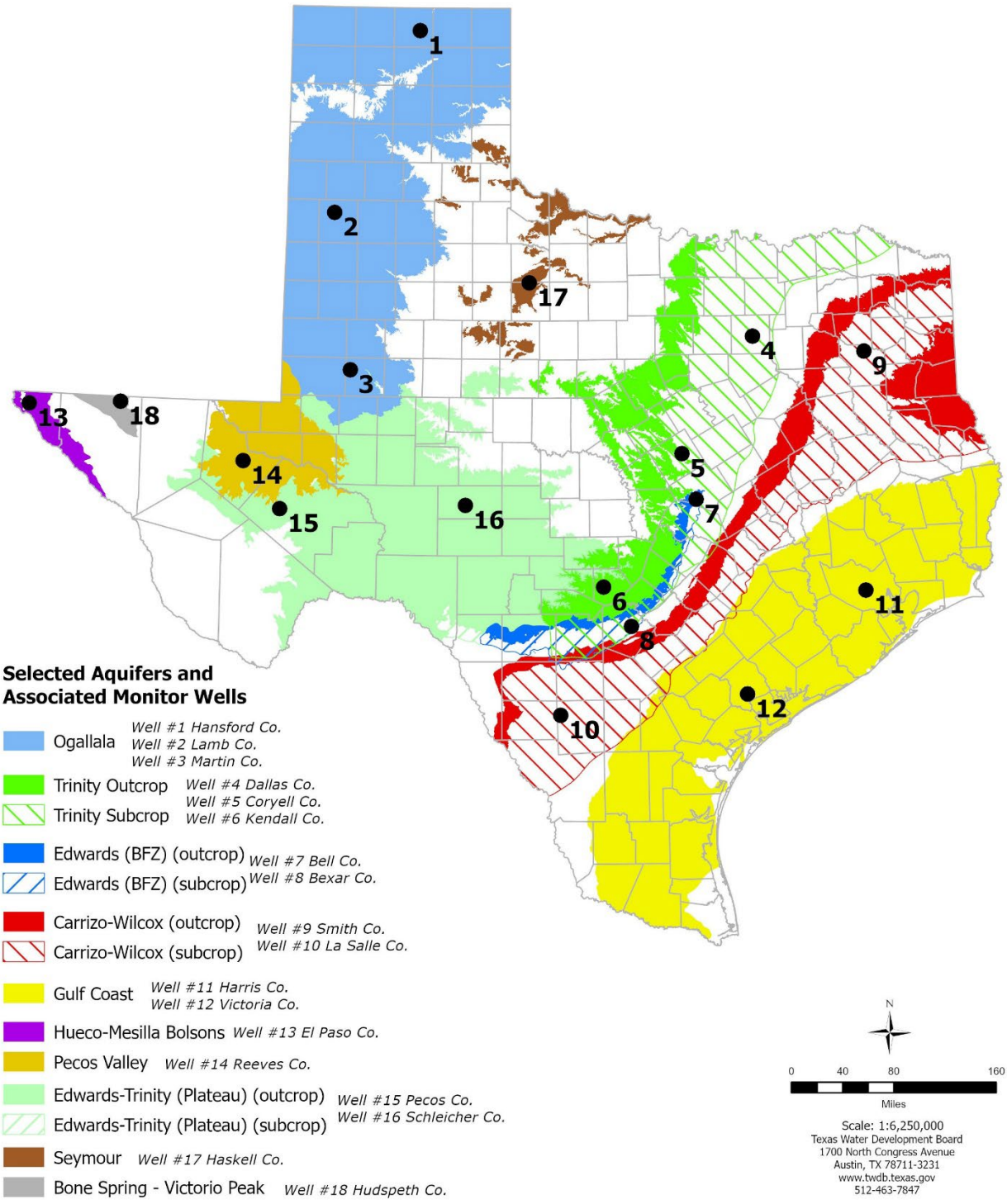


Figure 6: Runoff percentiles by the U.S. Geological Survey's Hydrologic Unit Code



AUGUST 2023 GROUNDWATER LEVELS IN MONITORING WELLS

Water-level measurements were available for 17 key monitoring wells in the state. The recorder in one well (#9 on map) was offline during the reporting period. Water levels rose in three monitoring wells since the beginning of August, with an increase of 0.01 feet in the Martin County Ogallala Aquifer well (#3 on map) to 0.47 feet in the El Paso County Hueco-Mesilla Bolsons Aquifer (#13 on map). Water levels declined in 14 monitoring wells, ranging from a decline of -0.03 feet in both the Hansford County Ogallala Aquifer and the Pecos County Edwards-Trinity (Plateau) Aquifer wells (#1 and #15 on map, respectively) to -11.08 feet in the Kendall County Trinty Aquifer well (#6 on map). The J-17 well (#8 on map) in San Antonio recorded a water level of 102.20 feet below land surface or 628.80 feet above mean sea level. Water levels are 1.20 feet below the Stage 4 critical management levels for the San Antonio portion of the Edwards (Balcones Fault Zone) Aquifer. The Edwards Aquifer Authority declared Stage 4 water restrictions effective July 21, 2023, as a result of well J-17 water levels and area spring flow levels.

*** Well numbers used in this publication on the aquifer map to indicate the monitoring well locations (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	164.56	164.53	-0.03	-2.01	-94.44	1951
(2) Lamb 1053602	154.23	154.15	-0.08	-1.19	-126.06	1951
(3) Martin 2739903	145.84	145.85	0.01	-0.53	-40.95	1964
(4) Dallas 3319101	507.33	505.10	-2.23	-5.19	-285.33	1954
(5) Coryell 4035404	548.16	545.28	-2.88	-0.64	-256.16	1955
(6) Kendall 6802609	172.94	161.86	-11.08	NA	-112.94	1975
(7) Bell 5804816	128.73	126.40	-2.33	-1.18	-5.22	2008
(8) Bexar 6837203	102.20	102.40	0.20	-6.10	-55.56	1932
(9) Smith 3430907	NA	NA	NA	NA	-140.39	1977
(10) La Salle 7738103	543.28	535.35	-7.93	-10.43	-290.21	2003
(11) Harris 6514409	192.88	190.00	-2.88	-2.61	-57.38*	1947**
(12) Victoria 8017502	32.85	31.82	-1.03	1.57	1.15	1958
(13) El Paso 4913301	299.23	299.70	0.47	NA	-67.33	1964
(14) Reeves 4644501	156.53	156.35	-0.18	8.21	-64.44	1952
(15) Pecos 5216802	222.15	222.12	-0.03	-1.21	24.73	1976
(16) Schleicher 5512134	322.45	320.20	-2.25	-4.16	-20.55	2003
(17) Haskell 2135748	47.80	47.23	-0.57	-0.59	-4.80	2002
(18) Hudspeth 4807516	152.36	151.97	-0.39	NA	-48.44	1966

*** Change since the original measurement taken on the date indicated in the last column. The historical change shown for recorder well #9 is based off the most recent water level record from April 2023.**

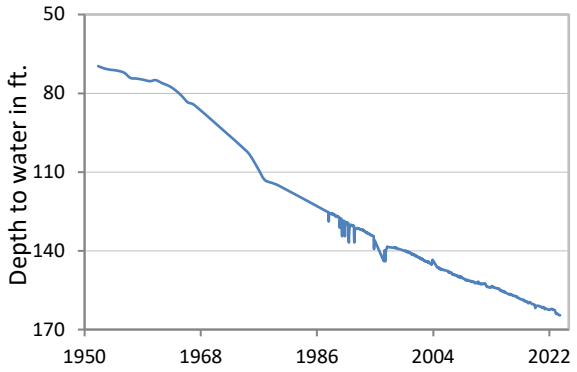
**** Measurement not shown on the hydrograph.**

NA (not available)

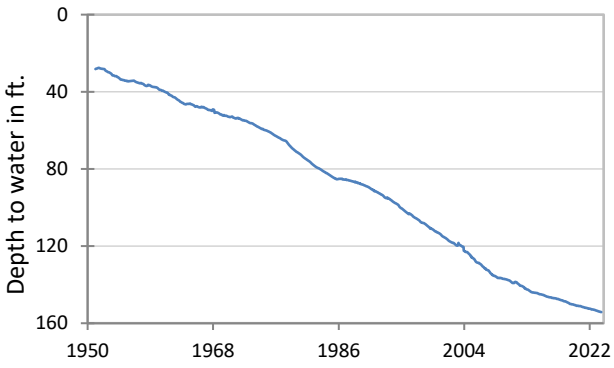
All data are provisional and subject to revision.

AUGUST 2023 MONITORING WELL HYDROGRAPHS

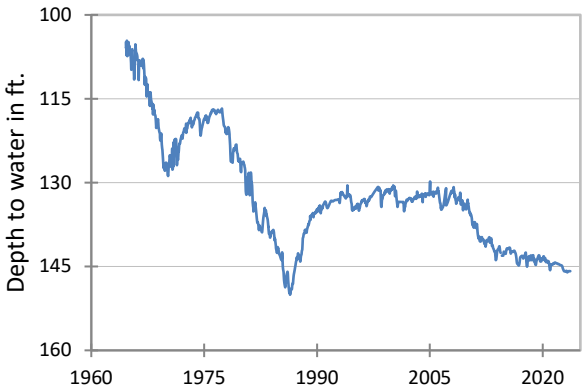
(1) State Well #03-54-301
Near Spearman, Hansford County
Ogallala Aquifer



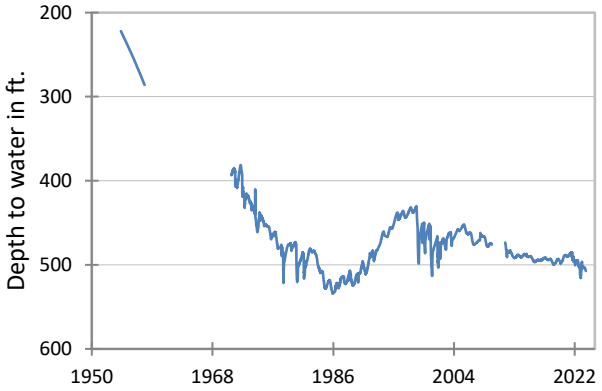
(2) State Well #10-53-602
Near Earth, Lamb County
Ogallala Aquifer



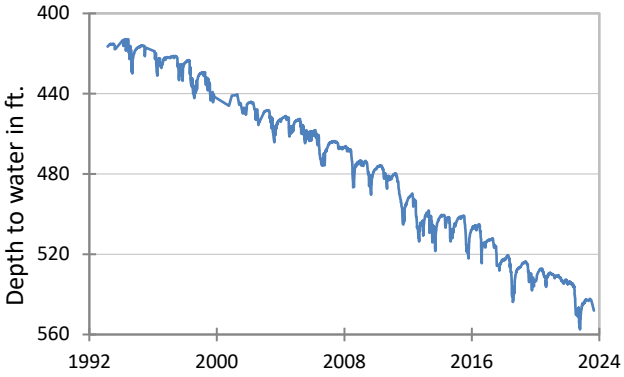
(3) State Well #27-39-903
Northwest Martin County
Ogallala Aquifer



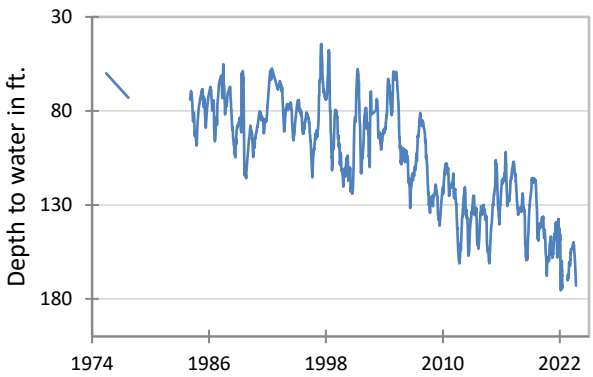
(4) State Well #33-19-101
Southeast Dallas, Dallas County
Twin Mountains Formation-Trinity Aquifer



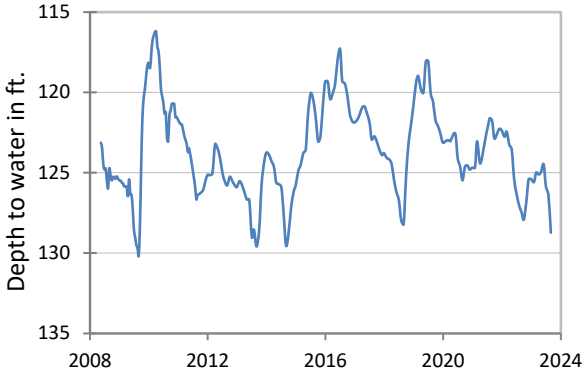
(5) State Well #40-35-404
Gatesville, Coryell County
Hosston Formation-Trinity Aquifer



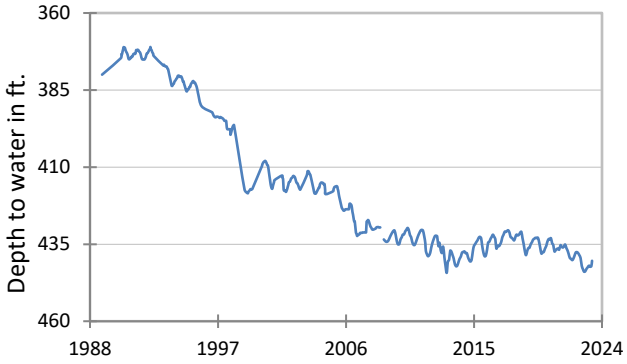
***(6) State Well #68-02-609**
Waring, Kendall County
Travis Peak Formation-Trinity Aquifer



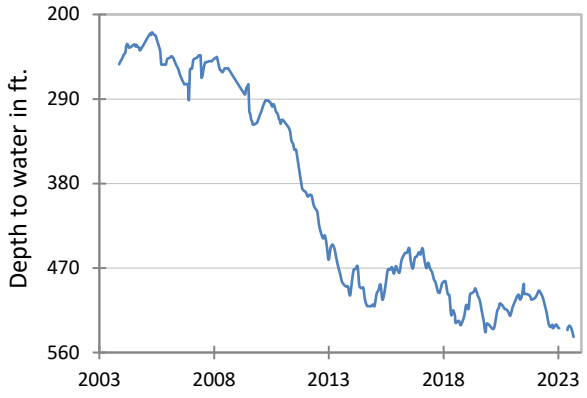
(7) State Well #58-04-816
Near Salado, Bell County
Edwards (Balcones Fault Zone) Aquifer



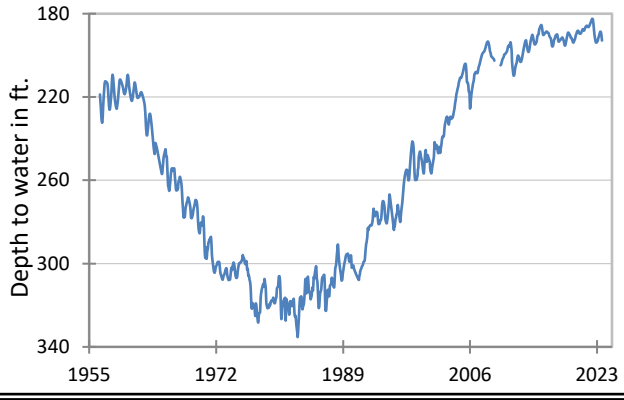
***(9) State Well #34-30-907**
Red Springs, Smith County
Carrizo-Wilcox Aquifer



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

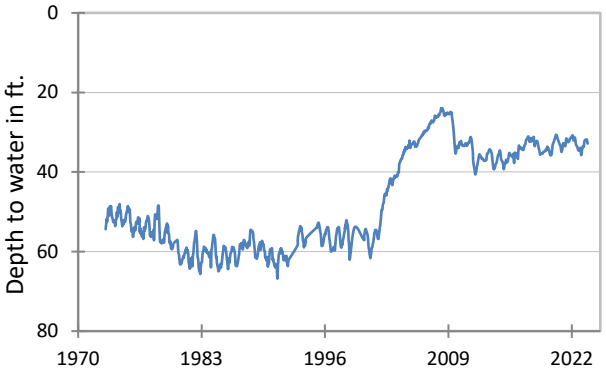


(11) State Well #65-14-409
North Houston, Harris County
Evangeline Formation-Gulf Coast Aquifer

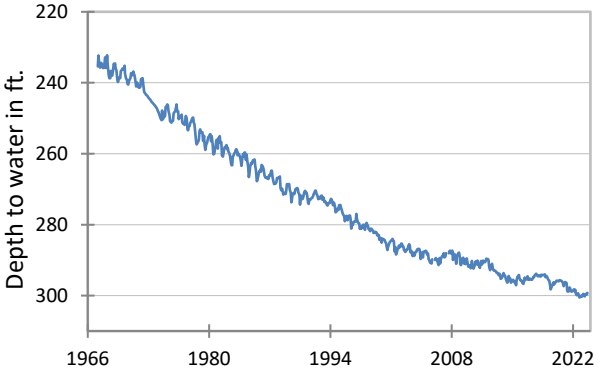


***The hydrograph period of record for well #6 was updated since the last report. Recorder well #9 has been offline since May 2023 and did not record data.**

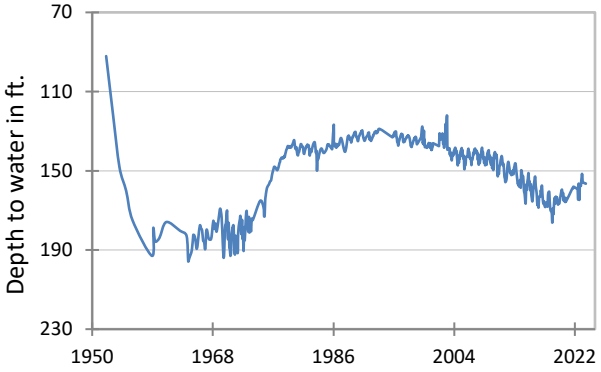
(12) State Well #80-17-502
Near Bloomington, Victoria County
Lissie Formation-Gulf Coast Aquifer



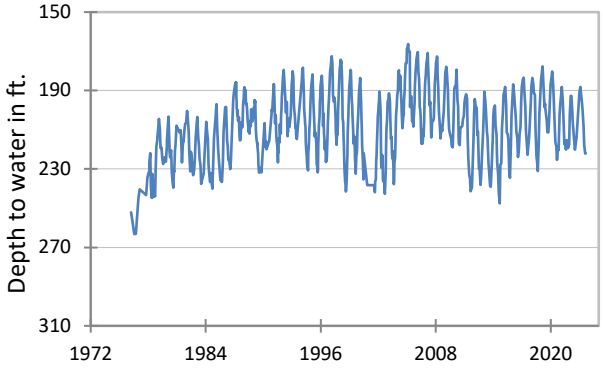
(13) State Well #49-13-301
El Paso, El Paso County
Hueco-Mesilla Bolsons Aquifer



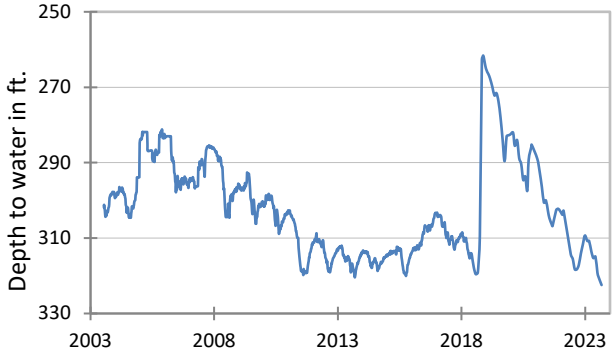
(14) State Well #46-44-501
Near Pecos, Reeves County
Pecos Valley Aquifer



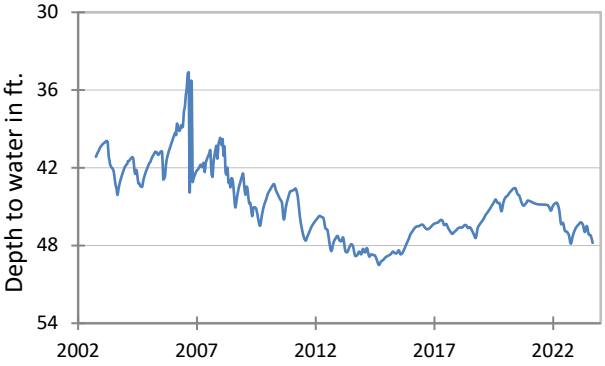
(15) State Well #52-16-802
Fort Stockton, Pecos County
Edwards-Trinity (Plateau) Aquifer



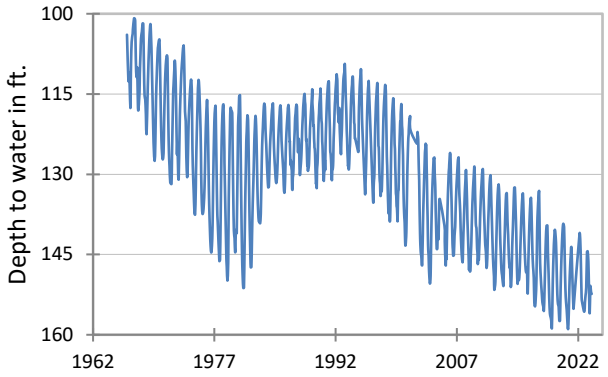
(16) State Well #55-12-134
Eldorado, Schleicher County
Edwards-Trinity (Plateau) Aquifer



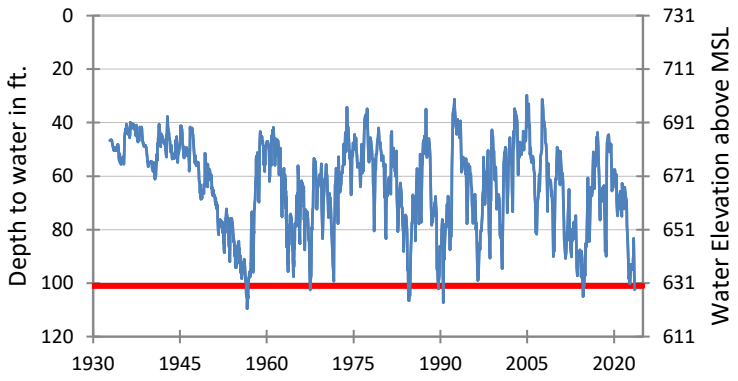
(17) State Well #21-35-748
Near O'Brien, Haskell County
Seymour Aquifer

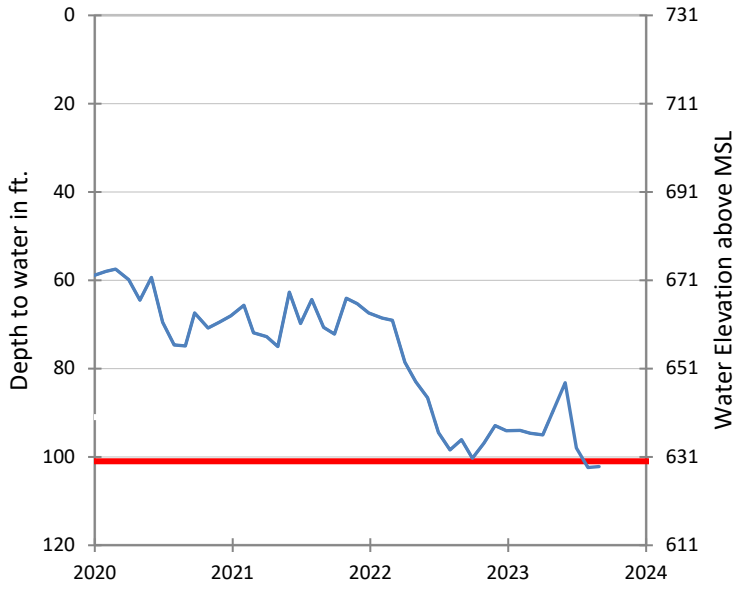


(18) State Well #48-07-516
Dell City, Hudspeth County
Bone Spring-Victorio Peak Aquifer



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

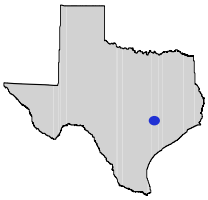




The late August water-level measurement in this Edwards (Balcones Fault Zone) Aquifer well, located at an elevation of 731 feet above mean sea level, was 102.20 feet below land surface, or 628.80 feet above mean sea level. This was 0.20 feet above last month's measurement, 6.10 feet below last year's measurement, and 55.56 feet below the initial measurement recorded in 1932.

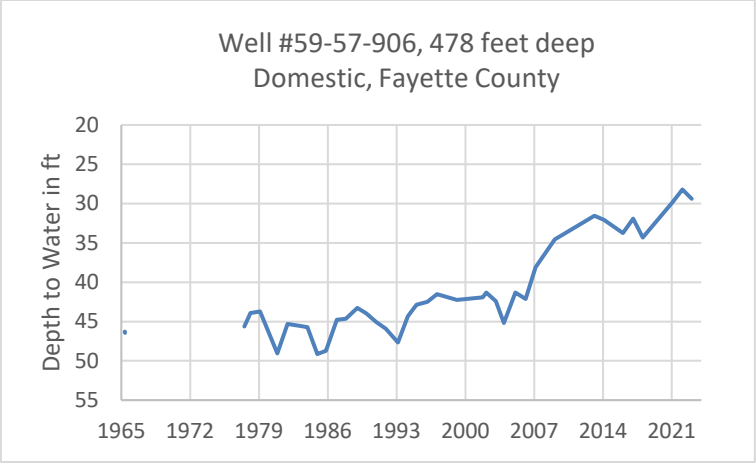
Water levels below the red line indicate periods in which Edwards Aquifer Authority Stage 4 drought restrictions are in effect. In August 2023, the aquifer remained below the Stage 4 critical management level. The Edwards Aquifer Authority declared Stage 4 water restrictions effective July 21, 2023, as a result of well J-17 water levels and area spring flow levels.

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.

Yegua-Jackson Aquifer



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

The initial water-level measurement of 46.44 feet below land surface was recorded by the TWDB in May 1965. The TWDB returned in 1977 to initiate annual water level measurements. The hydrograph shows relatively stable water levels from the initial measurement through the early 1990s, with levels fluctuating about 5 feet over those three decades. The early 1990s marked the start of an increasing trend in water levels that has generally carried on through today. There is a break in this trend in the mid-2010s which may coincide with the drought Texas experienced from 2010-2014.

Photo of well #59-57-906 general setting (left) and up-close view of the measuring point on the well head (right)

1. Peter G. George, Ph.D., P.G., Robert E. Mace, Ph.D., P.G., Rima Petrossian, P.G. *Aquifers of Texas: Report 380.*; 2011. https://www.twdb.texas.gov/groundwater/aquifer/minors/yegua-jackson.asp