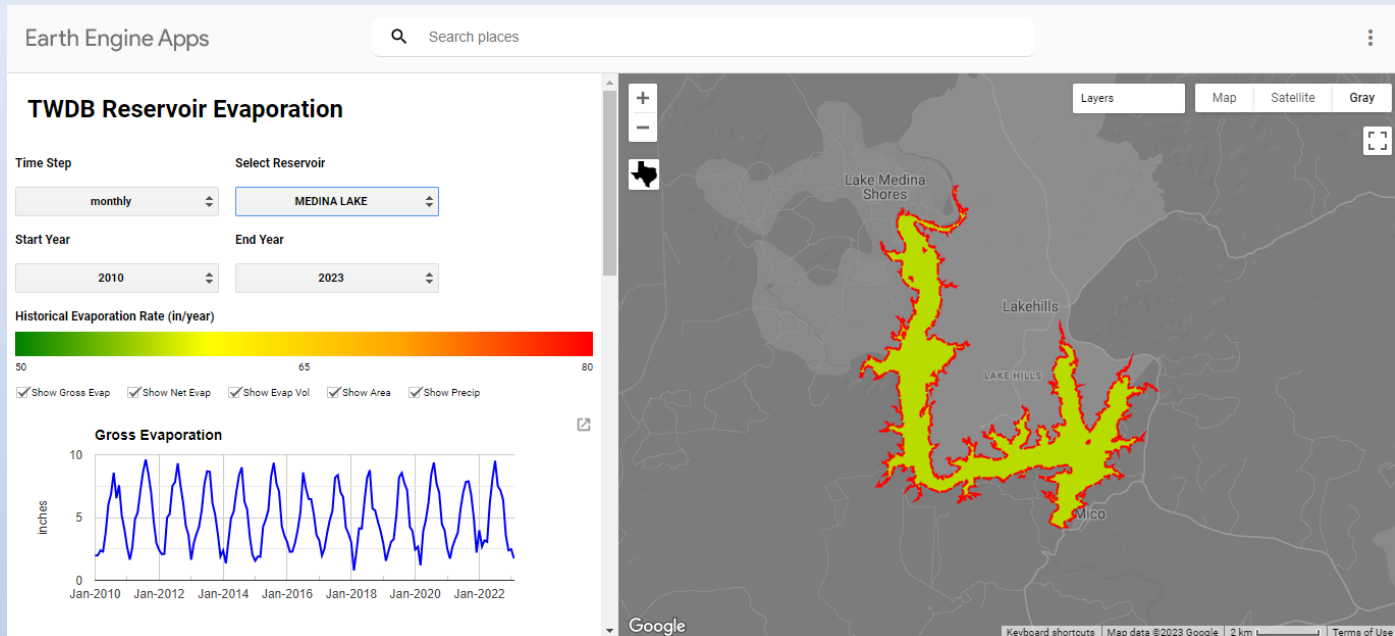


Texas Water Conditions Report

March 2023



Water News:

The Texas Water Development Board is collaborating with Texas A&M and the Desert Research Institute to produce a lake evaporation model that accounts for reservoir heat storage. Data can be viewed at a daily or monthly timestep with a 3-day latency. <https://dri-apps.earthengine.app/view/twdb-reservoir-evaporation>.

RAINFALL

Little to no rain [yellow, orange, and red shading, Figure 1(a)] fell in the High Plains, western Low Rolling Plains, Trans Pecos, Edwards Plateau, southwestern North Central, Southern, northern Lower Valley, much of South Central, much of the Upper Coast, and portions of southern East Texas climate divisions. Some rainfall [light blue and dark blue shading, Figure 1(a)] was seen in eastern Low Rolling Plains, southern Trans Pecos, southwestern Edwards Plateau, northern and eastern North Central, much of East Texas, areas of northern South Central, southwestern Lower Valley, areas of Southern, and southeastern Upper Coast climate divisions, with accumulations reaching 10.49 inches.

Compared to historical data from 1991–2020, much of the state received below average rainfall [yellow and orange shading, Figure 1(b)]. Areas of the state that received 125–200 percent of normal rainfall [light green, dark green shading, Figure 1(b)] were in the northeastern Low Rolling Plains, northern North Central, parts of central East Texas, areas of northern and southwestern Edwards Plateau, areas of Southern, Lower Valley, and southern Trans Pecos climate divisions. In northeastern Low Rolling Plains, northern North Central, southern Trans Pecos, southern Southern, and Lower Valley climate divisions, 200–300 percent of normal rainfall [light blue shading, Figure 1(b)] was seen. The southern Trans Pecos, southern Southern, and Lower Valley climate division received 300–600 percent of normal rainfall [(dark blue, and light pink shading, Figure 1 (b))].

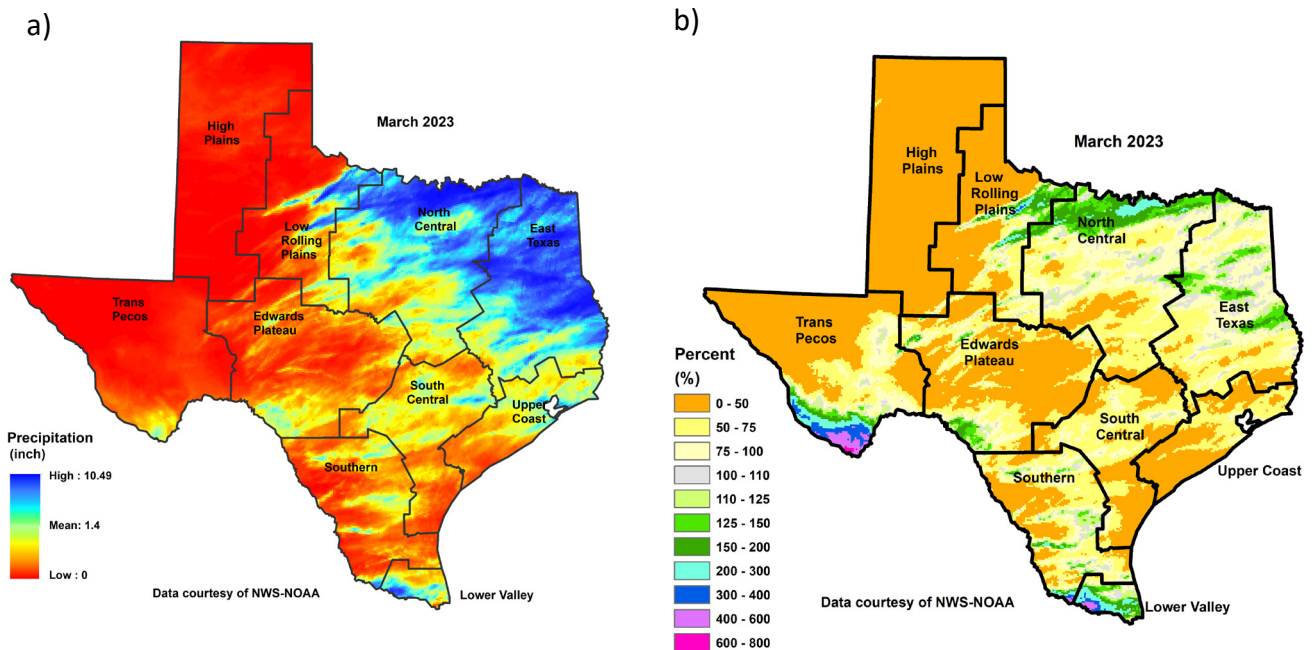


Figure 1: (a) Monthly accumulated rainfall, and (b) Percent of normal rainfall

DROUGHT

At the end of March, 80.88% of the state was in the D0 (abnormally dry) through D4 (exceptional drought) categories (**Figure 2**). That is an increase of 2.73 % from the end of February.

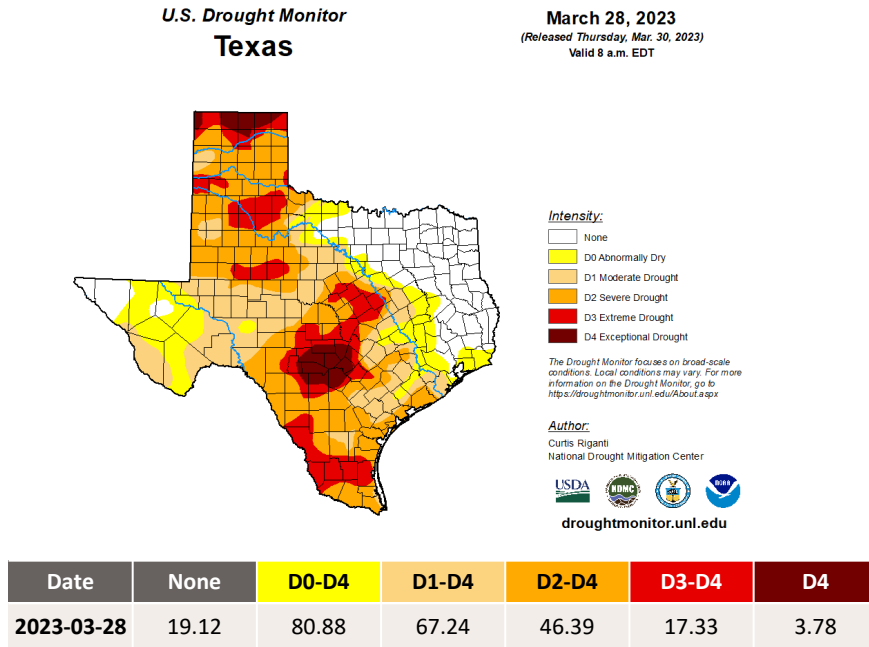


Figure 2. The percentage of drought in Texas according to the U.S. Drought Monitor map as of March 28, 2023.

RESERVOIR STORAGE

Out of 119 reservoirs in the state, 30 reservoirs held 100 percent conservation storage capacity (Figure 3). Additionally, 26 reservoirs were at or above 90 percent full. Twelve reservoirs remained below 30 percent full: Abilene (29.7 percent full), Choke Canyon (29.8 percent full), E.V. Spence (17.5 percent full), O. C. Fisher (2.9 percent full), J.B. Thomas (22.2 percent full), Falcon (10.3 percent full), Greenbelt (11.4 percent full), Mackenzie (6.1 percent full), Medina Lake (5.4 percent full), Palo Duro Reservoir (0.4 percent full), Twin Buttes (28.2 percent full), and the White River Lake (12.4 percent full). Elephant Butte Reservoir (New Mexico) was 16.7 percent full (Figure 3).

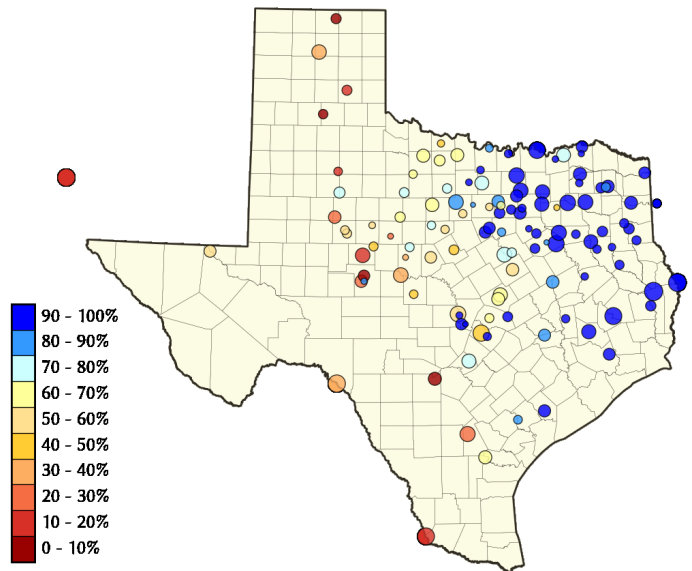


Figure 3. Reservoir conservation storage at end-March expressed as percent full (%)

Reservoir conservation storage by climate division was at or above normal [storage ≥ 70 percent full, Figure 4(a)] for East Texas (95.3 percent full), North Central (88.8 percent full), and the Upper Coast (96.6 percent full) climate divisions. Conservation storage was moderately low (Figure 4(a)) for the Low Rolling Plains (50.8 percent full), Edwards Plateau (40.8 percent full), and South Central (49.8 percent full) climate divisions. The High Plains (24.7 percent full), Southern (21.2 percent full), and the Trans Pecos (23.0 percent full) climate divisions had severely 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, Upper Colorado, Nueces, and Canadian river basins. The Lower Colorado, and Upper Red river basins had moderately low conservation storage (40–60 percent full, orange 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 and Lower Brazos, Neches, San Jacinto, Lavaca, and Guadalupe river basins.

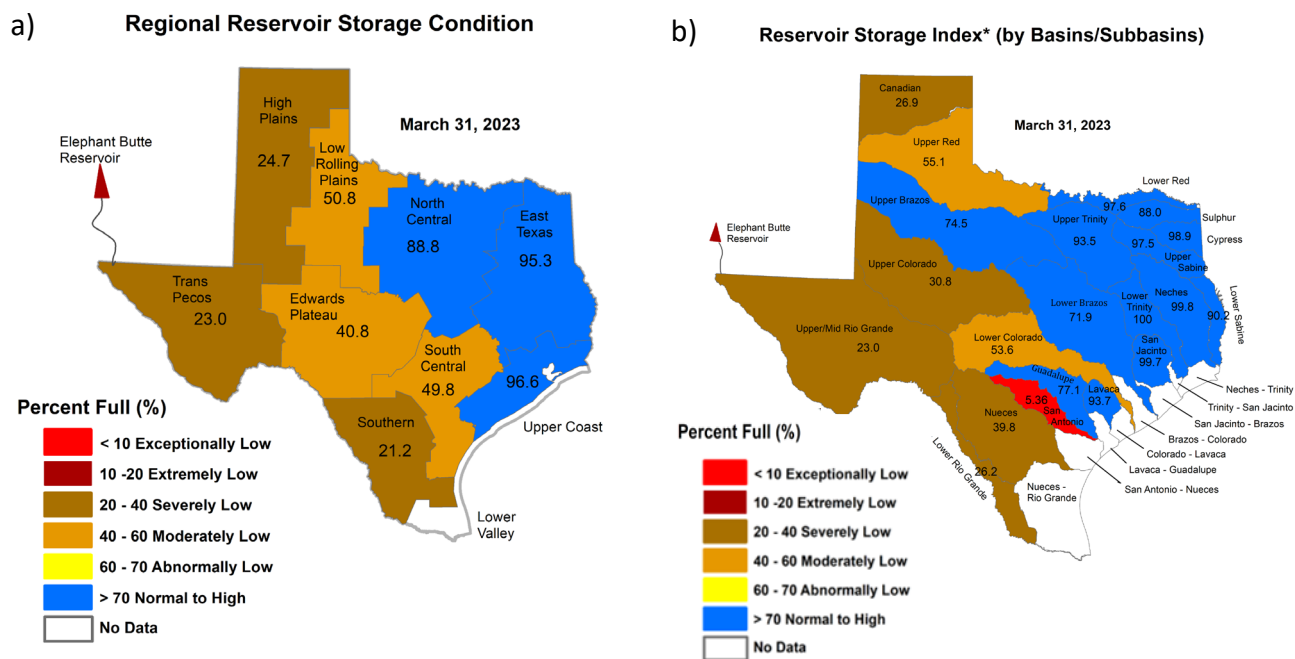


Figure 4: (a) Reservoir Storage Index* by climate division, and (b) Reservoir Storage Index* by basin/sub-basin.

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

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of lake or reservoir	Storage capacity	Storage at end-March 2023		Storage change from end-Feb 2023		Storage change from end-Mar 2022	
	(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)**	(%)
Abilene, Lake	7,900	2,350	29.7	-166	-2.1	-2,993	-37.9
Alan Henry Reservoir	96,207	69,341	72.1	-774	0.0	-13,675	-14.2
*Amistad Reservoir (Texas & Mexico)	3,275,532	1,342,797	41.0	-116,174	-3.5	326,575	10.0
*Amistad Reservoir (Texas)	1,840,849	729,478	39.6	-97,807	-5.3	-142,833	-7.8
Amon G Carter, Lake	19,266	19,181	99.6	2,791	14.5	963	5.0
Aquilla Lake	43,243	30,956	71.6	888	2.1	-6,067	-14.0
Arlington, Lake	40,157	40,022	99.7	-135	0.0	4,298	10.7
Arrowhead, Lake	230,359	154,785	67.2	4,222	1.8	-36,588	-15.9
Athens, Lake	29,503	29,503	100.0	0	0.0	0	0.0
*Austin, Lake	23,972	22,895	95.5	77	0.3	61	0.3
B A Steinhagen Lake	69,186	63,600	91.9	-3,558	-5.1	-2,062	-3.0
Bardwell Lake	43,856	43,856	100.0	0	0.0	1,079	2.5
Belton Lake	432,631	277,224	64.1	-3,639	0.0	-114,362	-26.4
Benbrook Lake	85,648	85,648	100.0	3,049	3.6	18,858	22.0
Bob Sandlin, Lake	192,417	191,795	99.7	-622	0.0	6,514	3.4
Bois d'Arc Lake	367,609	275,464	74.9	44,101	12.0	172,658	47.0
Bonham, Lake	11,027	10,921	99.0	-42	0.0	1,372	12.4
Brady Creek Reservoir	28,808	12,329	42.8	-237	0.0	-3,468	-12.0
Bridgeport, Lake	372,183	278,089	74.7	7,023	1.9	-41,283	-11.1
*Brownwood, Lake	130,868	78,485	60.0	-747	0.0	-36,733	-2.6
Buchanan, Lake	866,694	499,373	57.6	-7,872	0.0	-259,489	-29.9
Caddo, Lake	29,898	29,898	100.0	0	0.0	no data	
Canyon Lake	378,781	289,360	76.4	-4,494	-1.2	-80,026	-21.1
Cedar Creek Reservoir in Trinity	644,686	642,724	99.7	18,421	2.9	46,495	7.2
Champion Creek Reservoir	41,580	24,294	58.4	-362	0.0	-3,898	-9.4
Cherokee, Lake	40,094	40,094	100.0	0	0.0	0	0.0
Choke Canyon Reservoir	662,820	197,840	29.8	-4,749	0.0	-73,229	-11.0
*Cisco, Lake	29,003	20,349	70.2	-161	0.0	-4,359	-15.0
Coleman, Lake	38,075	28,535	74.9	-79	0.0	-5,876	-15.4
Colorado City, Lake	31,040	26,986	86.9	-342	-1.1	-1,611	-5.2
*Coleto Creek Reservoir	30,758	16,373	53.2	-389	-1.3	-5,378	-17.5
Conroe, Lake	417,577	416,385	99.7	-1,192	0.0	-1,192	0.0
Corpus Christi, Lake	256,062	168,107	65.7	-10,821	-4.2	-11,160	-4.4
Crook, Lake	9,195	9,195	100.0	94	1.0	0	0.0
Cypress Springs, Lake	66,756	66,756	100.0	0	0.0	7,586	11.4
E. V. Spence Reservoir	517,272	90,681	17.5	-1,861	0.0	-31,277	-6.0
Eagle Mountain Lake	179,880	156,756	87.1	6,477	3.6	2,763	1.5
Elephant Butte Reservoir (Texas)	852,491	142,510	16.7	18,453	2.2	39,182	4.6
Elephant Butte Reservoir (Total Storage)	1,985,900	329,885	16.6	42,716	2.2	90,700	4.6
*Falcon Reservoir (Texas & Mexico)	2,646,817	302,905	11.4	-150,398	-5.7	-150,147	-5.7
*Falcon Reservoir (Texas)	1,551,007	159,624	10.3	-47,139	-3.0	-170,054	-11.0
Fork Reservoir, Lake	605,061	564,671	93.3	16,141	2.7	112,697	18.6
Fort Phantom Hill, Lake	70,030	45,974	65.6	-444	0.0	-17,105	-24.4
Georgetown, Lake	38,005	23,074	60.7	548	1.4	-5,856	-15.4
Gibbons Creek Reservoir	25,721	23,837	92.7	582	2.3	-173	0.0
Graham, Lake	45,288	35,008	77.3	384	0.8	-2,555	-5.6
Granbury, Lake	132,949	122,096	91.8	1,147	0.9	-9,307	-7.0

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of lake or reservoir	Storage capacity	Storage at end-March 2023		Storage change from end-Feb 2023		Storage change from end-Mar 2022	
	(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)**	(%)
<i>Continued</i>							
Granger Lake	51,822	51,822	100.0	0	0.0	0	0.0
Grapevine Lake	163,064	163,064	100.0	0	0.0	7,046	4.3
Greenbelt Lake	59,968	6,854	11.4	-131	0.0	-2,817	-4.7
*Halbert, Lake	6,033	5,219	86.5	-88	-1.5	-181	-3.0
Hords Creek Lake	8,109	2,442	30.1	-19	0.0	-831	-10.2
Houston County Lake	17,113	17,113	100.0	0	0.0	0	0.0
Houston, Lake	132,318	132,318	100.0	0	0.0	0	0.0
Hubbard Creek Reservoir	313,298	205,783	65.7	-1,186	0.0	-58,138	-18.6
Hubert H Moss Lake	24,058	24,058	100.0	2,214	9.2	151	0.6
Inks, Lake	13,729	13,060	95.1	-40	0.0	-669	-4.9
J. B. Thomas, Lake	199,931	44,361	22.2	-1,298	0.0	-29,028	-14.5
Jacksonville, Lake	25,670	25,670	100.0	0	0.0	0	0.0
Jim Chapman Lake (Cooper)	260,332	260,332	100.0	0	0.0	66,646	25.6
Joe Pool Lake	175,800	175,800	100.0	0	0.0	14,436	8.2
Kemp, Lake	245,307	152,176	62.0	14,818	6.0	-50,862	-20.7
Kickapoo, Lake	86,345	53,736	62.2	3,126	3.6	-9,252	-10.7
Lavon Lake	409,757	409,757	100.0	0	0.0	55,408	13.5
Leon, Lake	27,762	16,439	59.2	-223	0.0	-6,531	-23.5
Lewisville Lake	563,228	563,228	100.0	0	0.0	44,961	8.0
Limestone, Lake	203,780	169,618	83.2	897	0.4	-34,162	-16.8
*Livingston, Lake	1,603,504	1,603,504	100.0	0	0.0	0	0.0
*Lost Creek Reservoir	11,950	11,807	98.8	844	7.1	390	3.3
Lyndon B Johnson, Lake	112,778	111,045	98.5	192	0.2	-384	0.0
Mackenzie Reservoir	46,450	2,841	6.1	18	0.0	-587	-1.3
Marble Falls, Lake	7,597	7,233	95.2	24	0.3	96	1.3
Martin, Lake	75,726	75,479	99.7	-247	0.0	-198	0.0
Medina Lake	254,823	13,681	5.4	-863	0.0	-42,092	-16.5
Meredith, Lake	500,000	150,930	30.2	-1,301	0.0	-19,323	-3.9
Millers Creek Reservoir	26,768	16,518	61.7	516	1.9	-5,349	-20.0
*Mineral Wells, Lake	5,273	4,219	80.0	55	1.0	-711	-13.5
Monticello, Lake	34,740	29,503	84.9	-506	-1.5	1,286	3.7
Mountain Creek, Lake	22,850	22,850	100.0	0	0.0	0	0.0
Murvaul, Lake	38,285	38,285	100.0	0	0.0	0	0.0
Nacogdoches, Lake	39,522	38,741	98.0	-107	0.0	-562	-1.4
Nasworthy	9,615	8,171	85.0	-86	0.0	-549	-5.7
Navarro Mills Lake	49,827	49,450	99.2	1,026	2.1	6,776	13.6
New Terrell City Lake	8,583	3,401	39.6	-5,165	-60.2	-4,302	-50.1
Nocona, Lake (Farmers Crk)	21,444	17,647	82.3	1,649	7.7	-721	-3.4
North Fork Buffalo Creek Reservoir	15,400	6,934	45.0	179	1.2	-4,656	-30.2
O' the Pines, Lake	241,363	241,363	100.0	0	0.0	0	0.0
O. C. Fisher Lake	115,742	3,319	2.9	-169	0.0	-3,227	-2.8
*O. H. Ivie Reservoir	554,340	209,504	37.8	-5,210	0.0	-78,878	-14.2
Oak Creek Reservoir	39,210	18,098	46.2	-502	-1.3	-7,748	-19.8

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of lake or reservoir	Storage capacity	Storage at end-March 2023		Storage change from end-Feb 2023		Storage change from end-Mar 2022	
	(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)**	(%)
<i>Continued</i>							
Palestine, Lake	367,303	367,303	100.0	0	0.0	0	0.0
Palo Duro Reservoir	61,066	214	0.4	0	0.0	-129	0.0
Palo Pinto, Lake	26,766	14,293	53.4	-671	-2.5	-10,553	-39.4
Pat Cleburne, Lake	26,008	20,887	80.3	1,480	5.7	1,705	6.6
*Pat Mayse Lake	113,683	113,683	100.0	0	0.0	10,333	9.1
Poosum Kingdom Lake	538,139	449,172	83.5	8,467	1.6	-59,345	-11.0
Proctor Lake	54,762	22,303	40.7	-612	-1.1	-24,155	-44.1
Ray Hubbard, Lake	439,559	438,515	99.8	-1,044	0.0	25,079	5.7
Ray Roberts, Lake	788,167	788,167	100.0	17,459	2.2	20,252	2.6
Red Bluff Reservoir	151,110	89,045	58.9	-8,488	-5.6	-23,438	-15.5
Richland-Chambers Reservoir	1,087,839	1,011,250	93.0	34,140	3.1	14,041	1.3
Sam Rayburn Reservoir	2,857,077	2,857,077	100.0	0	0.0	240,317	8.4
Somerville Lake	150,293	123,089	81.9	-1,231	0.0	-27,204	-18.1
Squaw Creek, Lake	151,250	151,250	100.0	0	0.0	5,218	3.4
Stamford, Lake	51,570	36,401	70.6	4,806	9.3	-5,717	-11.1
Stillhouse Hollow Lake	229,796	158,724	69.1	-3,126	-1.4	-49,771	-21.7
Striker, Lake	16,934	16,836	99.4	-98	0.0	-98	0.0
Sweetwater, Lake	12,267	7,152	58.3	-98	0.0	-2,492	-20.3
*Sulphur Springs, Lake	17,747	17,747	100.0	1,781	10.0	7,446	42.0
Tawakoni, Lake	871,685	871,685	100.0	0	0.0	79,327	9.1
Texana, Lake	158,975	149,101	93.8	-7,930	-5.0	-8,235	-5.2
Texoma, Lake (Texas & Oklahoma)	2,487,601	2,429,513	97.7	3,724	0.1	37,173	1.5
Texoma, Lake (Texas)	1,243,801	1,214,756	97.7	1,862	0.1	18,586	1.5
Toledo Bend Reservoir (Texas & Louisiana)	4,472,900	4,040,874	90.3	-217,716	-4.9	-207,284	-4.6
Toledo Bend Reservoir (Texas)	2,236,450	2,018,387	90.2	-108,858	-4.9	-103,642	-4.6
Travis, Lake	1,098,044	489,056	44.5	-9,757	0.0	-253,390	-23.1
Twin Buttes Reservoir	182,454	51,415	28.2	-1,015	0.0	-40,529	-22.2
Tyler, Lake	72,073	72,073	100.0	0	0.0	0	0.0
Waco, Lake	189,418	109,472	57.8	559	0.3	-44,483	-23.5
Waxahachie, Lake	11,060	11,060	100.0	0	0.0	2,281	20.6
Weatherford, Lake	17,812	10,287	57.8	-69	0.0	-3,998	-22.4
White River Lake	29,880	3,703	12.4	-236	0.0	-1,366	-4.6
Whitney, Lake	564,808	445,183	78.8	6,314	1.1	-66,090	-11.7
Worth, Lake	24,419	15,888	65.1	430	1.8	-1,946	-8.0
Wright Patman Lake	122,593	122,593	100.0	0	0.0	0	0.0
STATEWIDE TOTAL							
STATEWIDE TOTAL	32,414,434	23,701,562	73.1	-120,752	0	-1,097,908	-3.4

*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 March 2023, root zone soil moisture was low [yellow, orange, Figure 5(a)] in some portion of each of the climate divisions. Areas of more severe dryness [brown shading, Figure 5(a)] were in the High Plains, Trans Pecos, Low Rolling Plains, Southern, and areas of northern and southern South Central, northern Lower Valley, southwestern Upper Coast, and western East Texas climate divisions. Average to slightly above average soil moisture [green shading, Figure 5(a)] was seen in the portions of North Central, South Central, the Upper Coast, southern Lower Valley, and East Texas climate divisions. Areas of higher soil moisture [blue shading, Figure 5 (a)] were seen in northeastern North Central, and portions of eastern Upper Coast climate divisions.

Compared to conditions at the end of February 2023, soil moisture decreased [red shading in Figure 5(b)] across much of the state, particularly in northeastern South Central, Upper Coast, and southern East Texas climate divisions. Soil moisture increased [blue shading in Figure 5(b)] in southern Trans Pecos, portions of the Edwards Plateau, northern North Central, eastern Low Rolling Plains, portions of Southern, and the Lower Valley climate divisions.

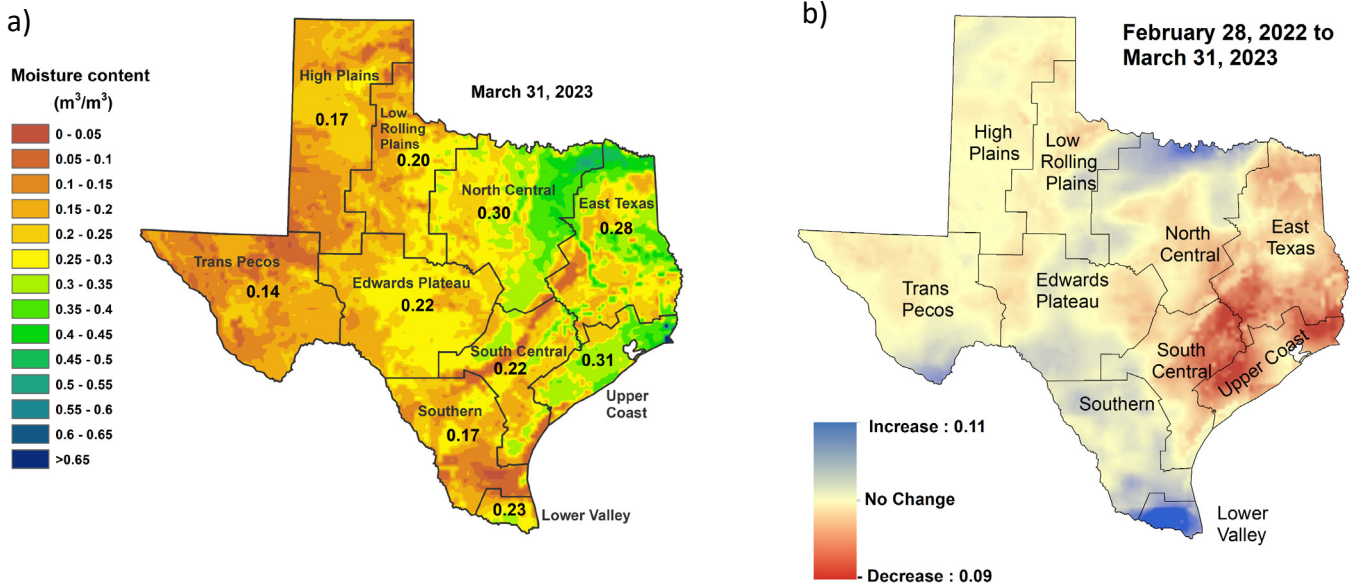


Figure 5: (a) Root zone soil moisture conditions in March 2023 and (b) the difference in root zone soil moisture between end-February 2023 and end-March 2023

STREAMFLOW CONDITIONS

Normal streamflow (25–75th percentile, green shading, Figure 6) was recorded in parts of the Panhandle, Trans Pecos (Lower Pecos-Red Bluff Reservoir watershed), Central, East, and coastal regions of Texas this month. Above normal (76–90th percentile, light blue shading, Figure 6) streamflow was seen in the Lower Red, Upper Trinity (Elm Fork Trinity watershed), and the Upper Brazos (South Wichita watershed) river basins.

Below normal streamflow (10–24th percentile, orange shading, Figure 6) was recorded in the Canadian, Upper Red, Upper Sabine (Lake Fork watershed), Neches (Village watershed), Middle and Lower Brazos, San Jacinto, Upper Colorado, Middle Colorado (Austin-Travis lakes watershed), and Lower Colorado, Nueces (Headwaters and Lower Frio watersheds), Upper San Antonio, San Antonio-Nueces (Aransas watershed), and Nueces-Rio Grande (Baffin Bay watershed) river basins.

Much below normal stream flow (< 10th percentile, dark red shading, Figure 6) was seen in the Upper Red, Middle Brazos, Trinity-San Jacinto, Nueces (Pine Island Bayou watershed), Upper Colorado (Beals watershed), Middle Colorado, Lower Colorado, Pecos, Nueces-Rio Grande, Nueces, Guadalupe, San Antonio (Medina watershed), San Antonio-Nueces (Mission watershed) river basins. A record low (bright red shading, Figure 6) was seen in the Pecos (Independence watershed) river basin.

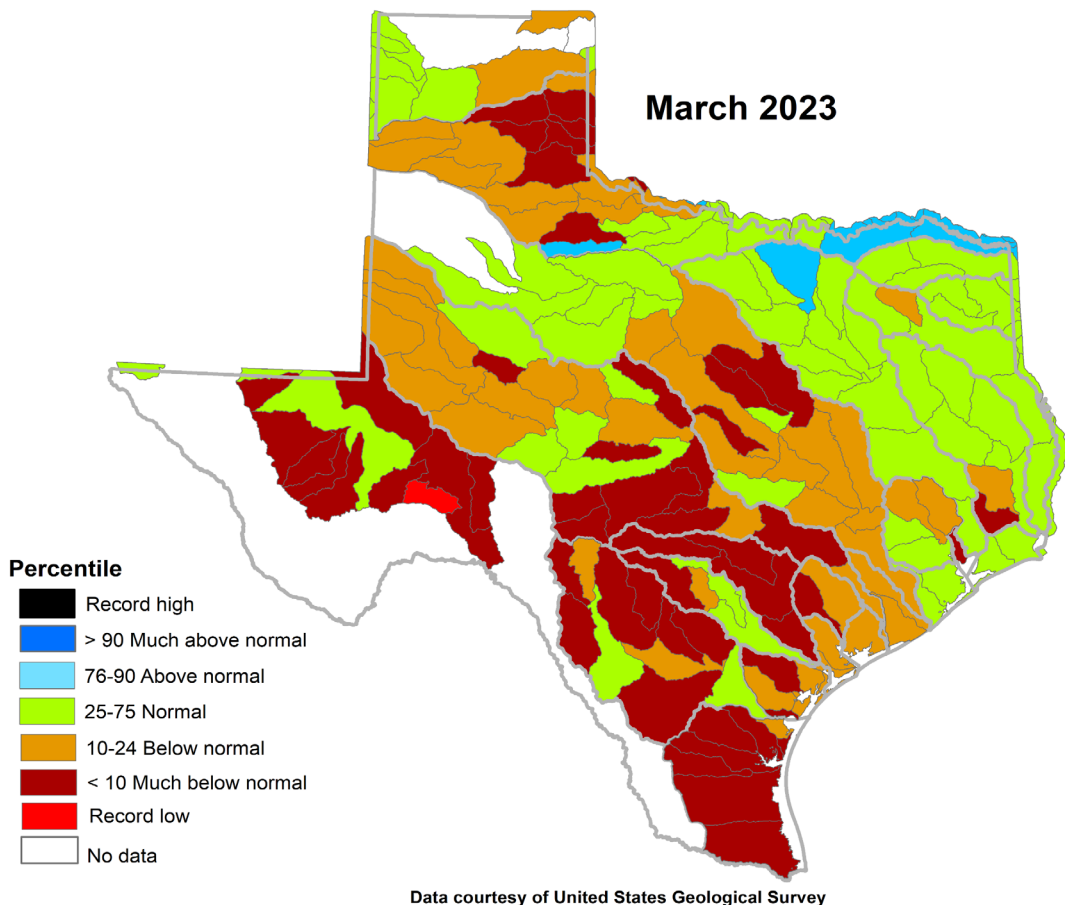
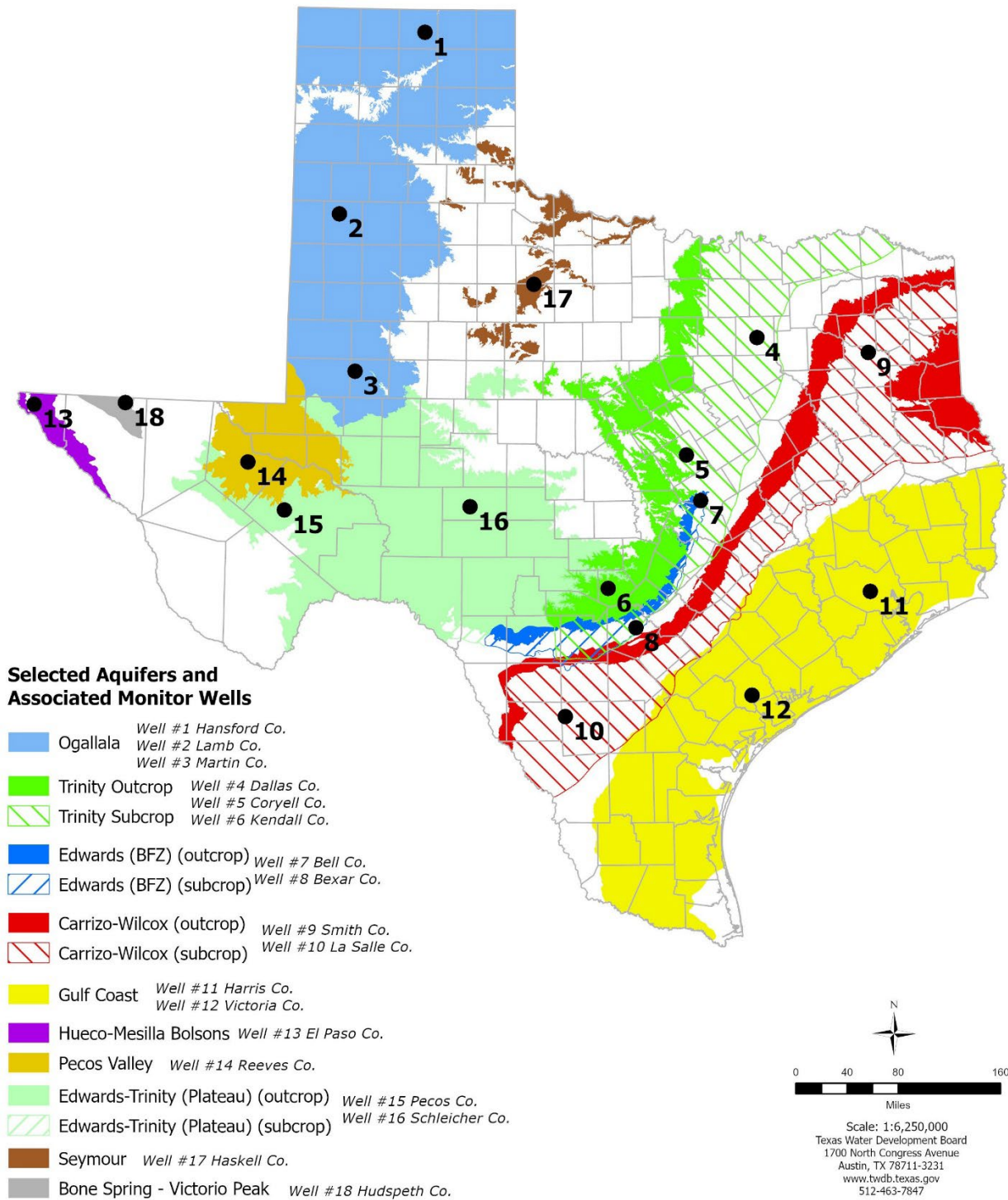


Figure 6: Runoff percentiles by the U.S. Geological Survey's Hydrologic Unit Code



MARCH 2023 GROUNDWATER LEVELS IN MONITORING WELLS

Water-level measurements were available for 17 key monitoring wells in the state. The recorder in one well (#10 on map) was offline during the reporting period. Water levels rose in 7 monitoring wells since the beginning of March, ranging from an increase of 0.02 feet in the Hansford County Ogallala Aquifer well (#1 on map) to 2.97 feet in the Schleicher County Edwards-Trinity (Plateau) Aquifer well (#16 on map). Water levels declined in 10 monitoring wells, ranging from a decline of -0.02 feet in the Reeves County Pecos Valley Aquifer well (#14 on map) to -8.48 feet in the Pecos County Edwards-Trinity (Plateau) Aquifer well (#15 on map). The J-17 well (#8 on map) in San Antonio recorded a water level of 95.00 feet below land surface or 636.00 feet above mean sea level. Water levels are 4.00 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 locations (numbers 1 to 18) are different than the TWDB's seven-digit state well number.

Monitoring Well	March (depth to water, feet)	February (depth to water, feet)	Month Change	Year Change	Historical Change*	First Measured (year)
(1) Hansford 0354301	163.90	163.92	0.02	-1.76	-93.78	1951
(2) Lamb 1053602	153.84	153.67	-0.17	-1.01	-125.67	1951
(3) Martin 2739903	146.05	145.76	-0.29	-1.38	-41.16	1964
(4) Dallas 3319101	501.69	503.16	1.47	-6.30	-279.69	1954
(5) Coryell 4035404	542.64	542.80	0.16	-8.16	-250.64	1955**
(6) Kendall 6802609	153.39	153.69	0.30	15.53	-93.39	1975
(7) Bell 5804816	125.11	124.99	-0.12	-2.24	-1.60	2008
(8) Bexar 6837203	95.00	94.70	-0.30	-16.40	-48.36	1932
(9) Smith 3430907	442.14	442.32	0.18	-4.54	-142.14	1977**
(10) La Salle 7738103	NA	NA	NA	NA	-281.00	2003
(11) Harris 6514409	190.78	191.87	1.09	-7.56	-55.28*	1947**
(12) Victoria 8017502	33.69	33.51	-0.18	-1.94	0.31	1958**
(13) El Paso 4913301	299.59	299.48	-0.11	-1.27	-67.69	1964**
(14) Reeves 4644501	155.94	155.92	-0.02	NA	-63.85	1952
(15) Pecos 5216802	196.08	187.60	-8.48	5.21	50.80	1976
(16) Schleicher 5512134	307.46	310.43	2.97	0.42	-5.56	2003
(17) Haskell 2135748	46.40	46.21	-0.19	-1.09	-3.40	2002
(18) Hudspeth 4807516	146.31	144.38	-1.93	-3.88	-42.39	1966

* Change since the original measurement taken on the date indicated in the last column. This historical change shown for recorder well #10 is based off the most recent water level record from January 2023.

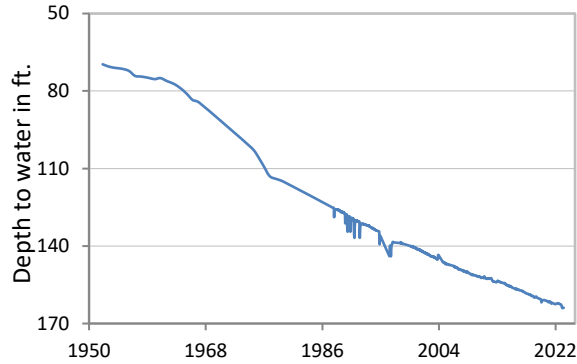
** Measurement not shown on the hydrograph.

NA (not available)

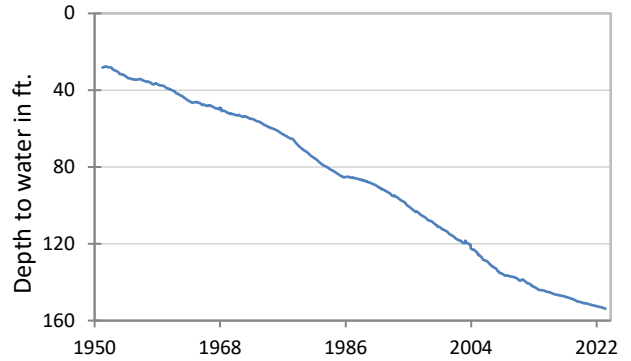
All data are provisional and subject to revision

MARCH 2023 MONITORING WELL HYDROGRAPHS

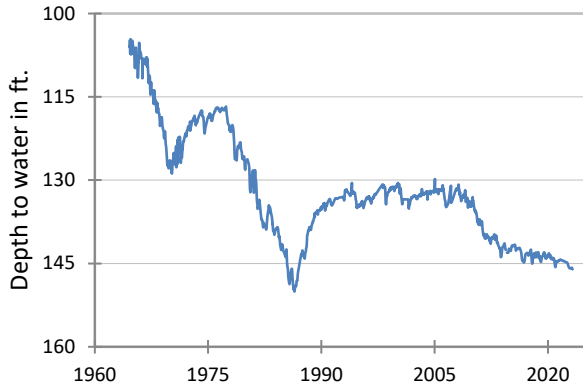
(1) State Well #03-54-301
Near Spearman, Hansford County
Ogallala Aquifer



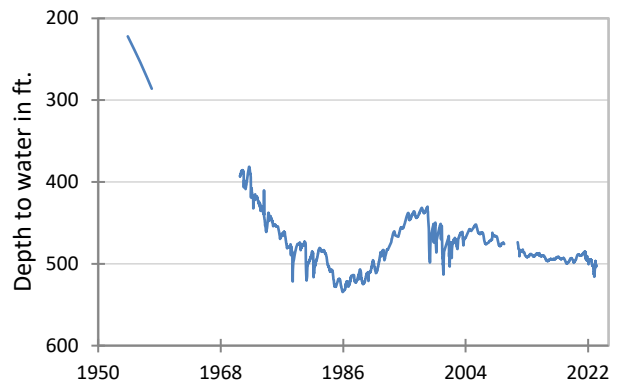
(2) State Well #10-53-602
Near Earth, Lamb County
Ogallala Aquifer



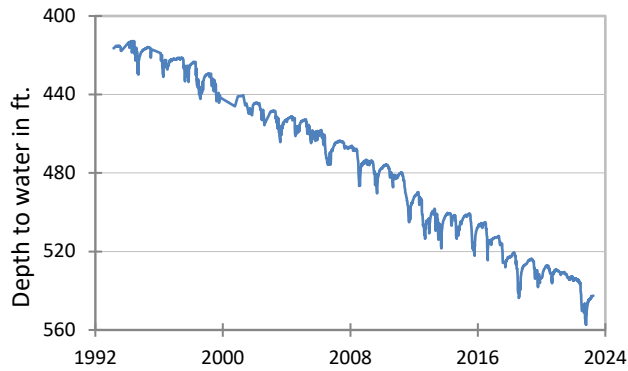
(3) State Well #27-39-903
Northwest Martin County
Ogallala Aquifer



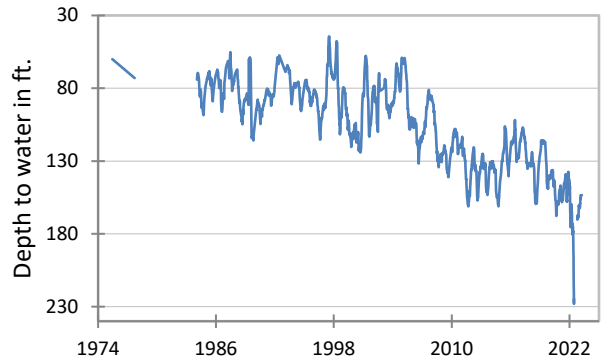
(4) State Well #33-19-101
Southeast Dallas, Dallas County
Twin Mountains Formation-Trinity Aquifer



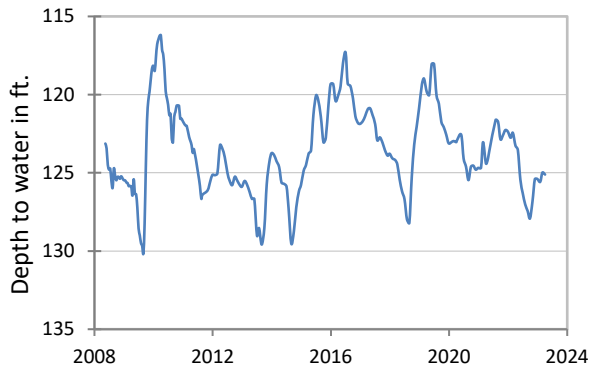
**(5) State Well #40-35-404
Gatesville, Coryell County
Hosston Formation-Trinity Aquifer**



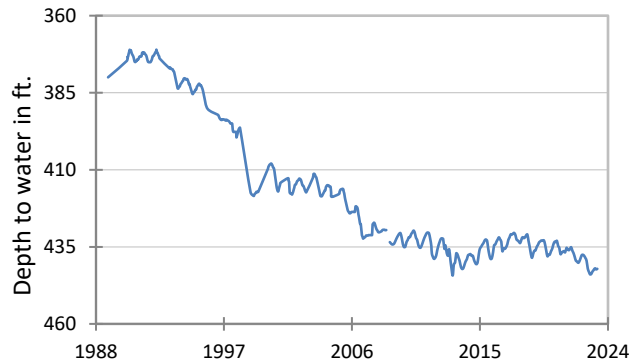
**(6) State Well #68-02-609
Waring, Kendall County
Travis Peak Formation-Trinity Aquifer**



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



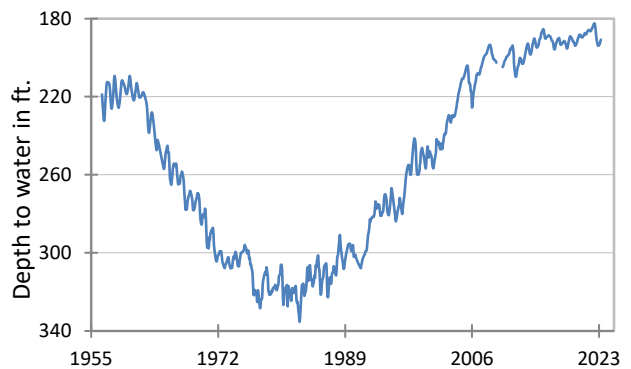
**(9) State Well #34-30-907
Red Springs, Smith County
Carrizo-Wilcox Aquifer**



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

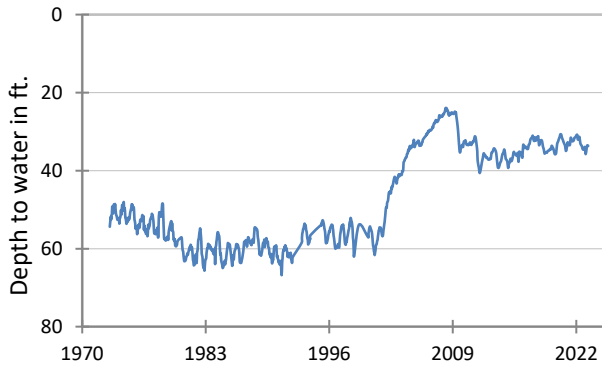


**(11) State Well #65-14-409
North Houston, Harris County
Evangeline Formation-Gulf Coast Aquifer**

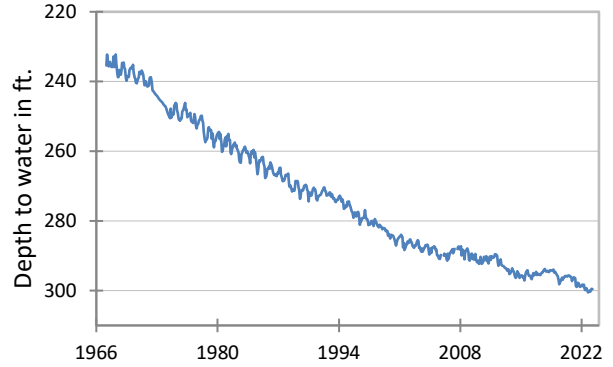


*Recorder well #10 was offline in March 2023 and did not record data.

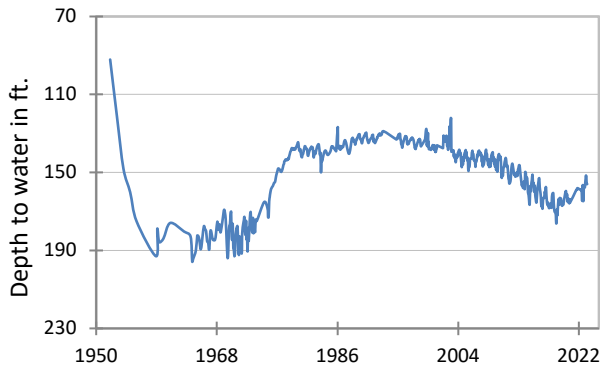
(12) State Well #80-17-502
Near Bloomington, Victoria County
Lissie Formation-Gulf Coast Aquifer



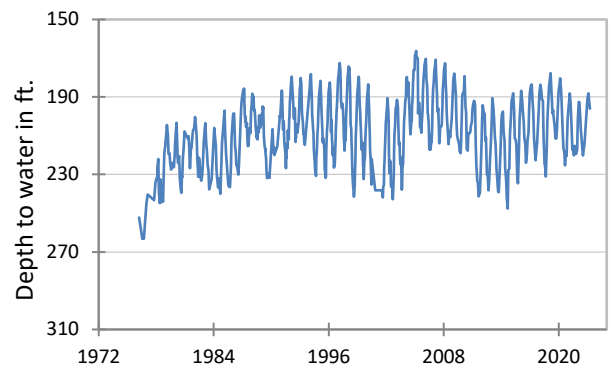
(13) State Well #49-13-301
El Paso, El Paso County
Hueco-Mesilla Bolsons Aquifer



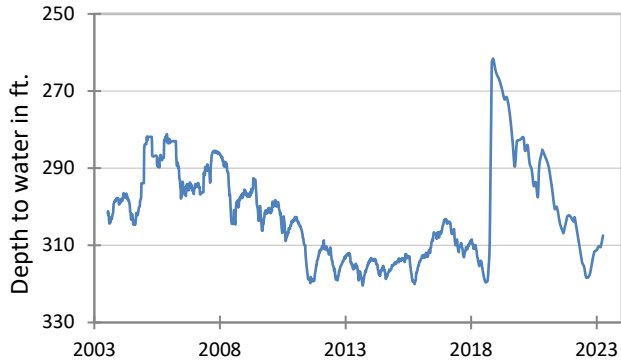
(14) State Well #46-44-501
Near Pecos, Reeves County
Pecos Valley Aquifer



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



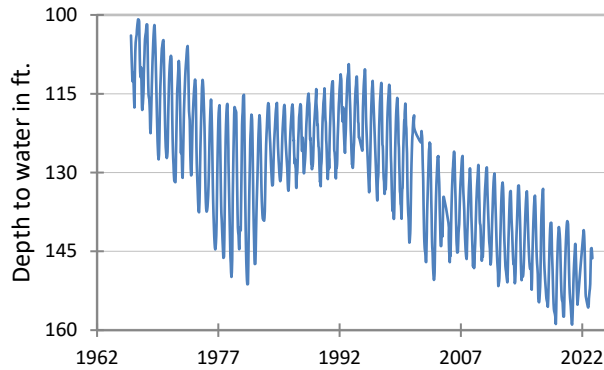
(16) State Well #55-12-134
Eldorado, Schleicher County
Edwards-Trinity (Plateau) Aquifer



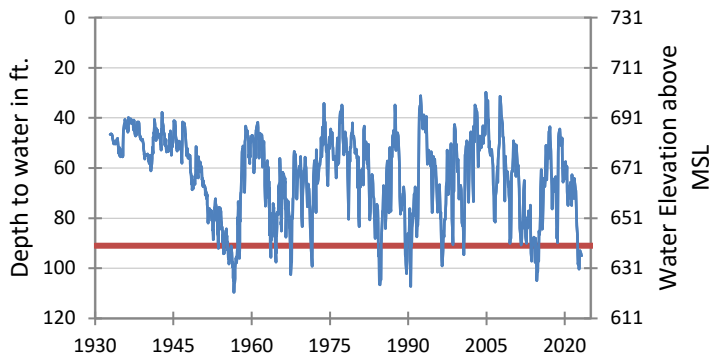
(17) State Well #21-35-748
Near O'Brien, Haskell County
Seymour Aquifer



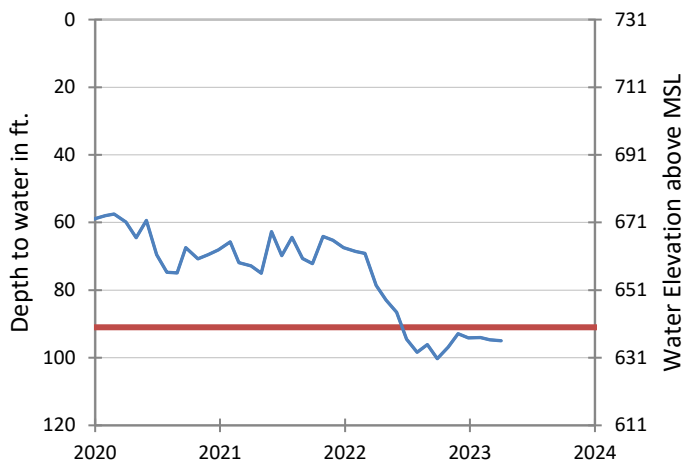
**(18) State Well #48-07-516
Dell City, Hudspeth County
Bone Spring-Victorio Peak Aquifer**



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

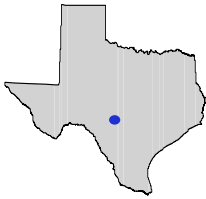


The late March water-level measurement in this Edwards (Balcones Fault Zone) Aquifer well, located at an elevation of 731 feet above mean sea level, was 95.0 feet below land surface, or 636.0 feet above mean sea level. This was 0.30 feet below last month's measurement, 16.40 feet below last year's measurement, and 48.36 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 March 2023, Stage 3 drought restrictions were in effect because the aquifer remained below the Stage 3 critical management level.

HYDROGRAPH OF THE MONTH



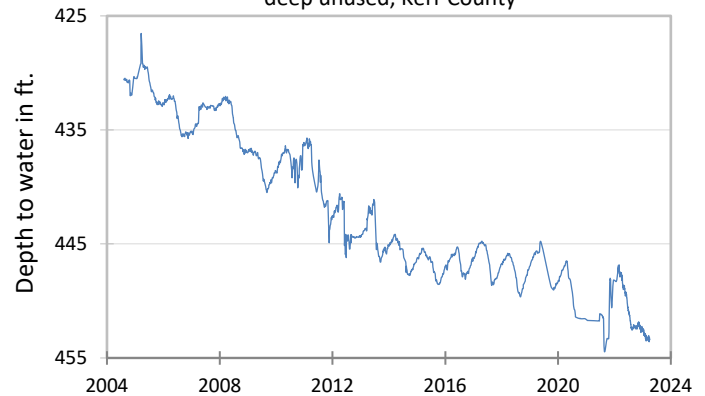
Each month this space features a new hydrograph (marked with the • symbol on the map) depicting different aquifers and their conditions in Texas.

The Trinity Aquifer is a major aquifer that extends across much of the central and northeastern part of the state. It is composed of several water-bearing formations contained within the Trinity Group. These formations consist of limestones, sands, clays, gravels, and conglomerates. Freshwater saturated thickness averages about 600 feet in North Texas and about 1,900 feet in Central Texas. In general, groundwater is fresh but very hard in the outcrop of the aquifer. Total dissolved solids increase from less than 1,000 milligrams per liter in the east and southeast to between 1,000 and 5,000 milligrams per liter, or slightly to moderately saline, as the depth to the aquifer increases. Sulfate and chloride concentrations also tend to increase with depth.

The Trinity Aquifer is one of the most extensive and highly used groundwater sources in Texas. Although its primary use is for municipalities, it is also used for irrigation, livestock, and other domestic purposes. Some of the state's largest water level declines, ranging from 350 to more than 1,000 feet, have occurred in counties along the IH-35 corridor from McLennan County to Grayson County.

Trinity Aquifer

Well #56-54-405, 620 feet deep unused, Kerr County



The initial water-level measurement of 430.54 feet below land surface was recorded by the TWDB in 2004 when an automatic water-level recorder was installed in this well. The recorder continues to collect hourly measurements ([available online](#)) and daily measurements (in the TWDB Groundwater Database). The hydrograph shows an overall decline in water levels over the period of record, with a shift in decreasing trends observed in 2012. Irregular intervals of water level decline and rebound are observed from 2004 to 2012, with water levels declining approximately -1.6 feet per year (ft/yr) and a sharp decline in water levels observed in 2011 (correlating to a period of drought). Distinct seasonal fluctuations in water levels become apparent following this period, with water levels declining approximately -0.72 ft/yr through March 2023.



Far away (left), and close-up (right) images of well #56-54-405.