# Texas Water Conditions Report April 2024



# Water News:

TWDB Coastal Science staff hosted a Estuary Science Exchange webinar featuring Dr. Victoria Congdon and Katie Swanson of the Mission Aransas National Estuarine Research Reserve who presented *System–Wide Monitoring Programs and Updates for the Mission-Aransas Reserve*. <u>https://missionaransas.org/</u>

## RAINFALL

In April, little to no rain [yellow, orange, and red shading, Figure 1(a)] fell in the Trans Pecos, High Plains, much of the Low Rolling Plains, Edwards Plateau, western and portions of southern North Central, much of the Southern, South Central, Lower Valley, western Upper Coast, and southwestern East Texas climate divisions. Above average to high amounts of rainfall [light and dark blue shading, Figure 1(a)] were seen in northeastern Low Rolling Plains, portions of northeastern South Central, much of North Central, East Texas, and the eastern Upper Coast climate divisions.

Compared to historical data from 1991–2020, 0–75 percent of normal rainfall [yellow, orange shading, Figure 1(b)] was received in the northern High Plains, portions of the Low Rolling Plains, Trans Pecos, much of the Edwards Plateau, southern South Central, Lower Valley, portions of Southern, and the western Upper Coast climate divisions. 125–200 percent of normal rainfall [green shading, Figure 1(b)] was received in portions of the central and southern High Plains, north and northeastern Edwards Plateau, areas of North Central, northeastern and southern central Southern, northern South Central, portions of East Texas, and eastern Upper Coast climate divisions. 200–400 percent of normal rainfall [light to dark blue shading, Figure 1(b)] was received in central and southern High Plains, southern and eastern Low Rolling Plains, much of North Central, much of East Texas, central Southern, northern South Central, and eastern Upper Coast climate divisions. 400–600 percent of normal rainfall [light purple shading, Figure 1(b)] was received in northeastern Low Rolling Plains, southern and eastern North Central, western and southern East Texas climate division. 600–800 percent of normal rainfall [light purple shading, Figure 1(b)] was received in northeastern Low Rolling Plains, southern and eastern North Central, western and southern East Texas climate division. 600–800 percent of normal rainfall [light pink shading, Figure 1(b)] was observed in areas of the southern East Texas climate division.



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

## DROUGHT

At the end of April, 47.22% of the state was in the D0 (abnormally dry) through D4 (exceptional drought) categories (**Figure 2**). This is approximately 21% lower than this time last year.



U.S. Drought Monitor

## April 30, 2024

(Released Thursday, May. 2, 2024) Valid 8 a.m. EDT

	Drought Conditions (Percent Area)								
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4			
Current	52.78	47.22	27.41	13.40	2.05	0.00			
Last Week 04-23-2024	51.85	48.15	28.10	<b>1</b> 3.37	2.05	0.00			
3 Month s Ago 01-30-2024	56.93	43.07	22.75	9.68	1.92	0.00			
Start of Calendar Year 01-02-2024	39.60	60.40	39.47	17.78	5.68	0.68			
Start of Water Year 09-26-2023	3.03	96.97	80.64	59.66	38.06	12.68			
One Year Ago 05-02-2023	31.81	68.19	53.66	37.73	20.66	3.37			

#### Intensity:





The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx

<u>Author:</u> Curtis Riganti National Drought Mitigation Center

D1 Moderate Drought



**Figure 2**. The percentage of drought in Texas according to the U.S. Drought Monitor map as of April 30, 2024.



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

Out of 119 reservoirs in the state, 57 reservoirs held 100 percent conservation storage capacity, and 9 reservoirs were at or above 90 percent full in April. Sixteen reservoirs remained at or below 30 percent full: Abilene (12.8 percent full), Amistad (27.9 percent full), Choke Canyon (22.9 percent full), E.V. Spence (15.2 percent full), Falcon (11.1 percent full), Greenbelt (11.2 percent full), Hords Creek (21.3 percent full), J.B. Thomas (19.3 percent full), Mackenzie (9.2 percent full), Medina Lake (2.8 percent full), O.C. Fisher (1.6 percent full), O.H. Ivie (26.2 percent full), Palo Duro Reservoir (3.2 percent full), Proctor (29.7 percent full), Twin Buttes (13.6 percent full), and the White River Lake (21.6 percent full). Elephant Butte Reservoir (New Mexico) was 21.5 percent full (Figure 3).

Reservoir conservation storage was at or above normal [Figure 4(a)] for East Texas (97.3 percent full), North Central (92.5 percent full), and the Upper Coast (97.3 percent full) climate divisions. Conservation storage was moderately low [Figure 4(a)] for the Low Rolling Plains (55.9 percent full), and South Central (43.3 percent full) climate divisions. The High Plains (36.2 percent full), Edwards Plateau (31.1 percent full), and the Trans Pecos (24.4 percent full) climate divisions had severely low conservation storage. The Southern (17.2 percent full) climate division 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 Canadian, Upper/Mid Rio Grande, Nueces, and Upper Colorado river basins. The Upper Red and Lower Colorado river basins had moderately low conservation storage [40–60 percent full, orange shading, Figure 4(b)]. The Guadalupe river basin 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 and Lower Brazos, Neches, Lavaca, and San Jacinto river basins.



a) **Regional Reservoir Storage Condition** 

Reservoir Storage Index\* (by Basins/Subbasins) b)

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 Storage at er capacity 2024		April	Storage change from end-Mar 2024		Storage change from end-Apr 2023		
	(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)**	(%)	
Abilene, Lake	7,900	907	11.5	-106	-1.3	-1,223	-15.5	
Alan Henry Reservoir	96,207	83,457	86.7	-815	0.0	15,352	16.0	
*Amistad Reservoir (Texas & Mexico)	3,275,532	663,024	20.2	-3,069	0.0	-340,538	-10.4	
*Amistad Reservoir (Texas)	1,813,408	506,439	27.9	-5,100	0.0	-118,122	-6.5	
Amon G Carter, Lake	19,266	19,266	100.0	2,780	14.4	464	2.4	
Aguilla Lake	43,243	43,243	100.0	0	0.0	8,021	18.5	
Arlington, Lake	40,157	40,157	100.0	0	0.0	1,264	3.1	
Arrowhead, Lake	230,359	135,753	58.9	8,435	3.7	-16,172	-7.0	
Athens, Lake	29,503	29,503	100.0	0	0.0	0	0.0	
*Austin. Lake	23.972	22.757	94.9	-154	0.0	-262	-1.1	
B A Steinhagen Lake	69.186	69.186	100.0	4.511	6.5	4.904	7.1	
Bardwell Lake	43,856	43,856	100.0	0	0.0	0	0.0	
Belton Lake	432,631	355,009	82.1	50,175	11.6	72,546	16.8	
Benbrook Lake	85,648	85,648	100.0	0	0.0	0	0.0	
Bob Sandlin, Lake	192,417	192,417	100.0	0	0.0	356	0.2	
Bois d'Arc Lake	367,609	367,609	100.0	70,885	19.3	82,577	22.5	
Bonham, Lake	11,027	11,027	100.0	0	0.0	106	1.0	
Brady Creek Reservoir	28,808	10,169	35.3	-319	-1.1	-1,766	-6.1	
Bridgeport, Lake	372,183	223,055	59.9	10,948	2.9	-52,955	-14.2	
*Brownwood, Lake	130,868	76,664	58.6	-1,326	-1.0	779	0.6	
Buchanan, Lake	866,694	408,262	47.1	5,858	0.7	-87,216	-10.1	
Caddo, Lake	29.898	29.898	100.0	0	0.0	0	0.0	
Canyon Lake	378,781	222,479	58.7	-3,972	-1.0	-66,262	-17.5	
Cedar Creek Reservoir in Trinity	644.686	644.686	100.0	0	0.0	0	0.0	
Champion Creek Reservoir	41,580	23,768	57.2	114	0.3	-21	0.0	
Cherokee. Lake	40.094	40.094	100.0	0	0.0	0	0.0	
Choke Canyon Reservoir	662,820	151,655	22.9	-4,693	0.0	-53,841	-8.1	
*Cisco, Lake	29.003	17.662	60.9	-55	0.0	-2.359	-8.1	
Coleman. Lake	38.075	22.711	59.6	-316	0.5	-5.241	-13.8	
Colorado City, Lake	31.040	30.032	96.8	-1.008	-3.2	1.196	3.9	
*Coleto Creek Reservoir	30.758	14.483	47.1	255	0.8	-1.402	-4.6	
Conroe. Lake	417.577	417.577	100.0	0	0.0	0	0.0	
Corpus Christi, Lake	256,062	102,219	39.9	-10,558	-4.1	-84,064	-32.8	
Crook. Lake	9.195	9.195	100.0	0	0.0	0	0.0	
Cypress Springs, Lake	66,756	66,756	100.0	0	0.0	0	0.0	
E. V. Spence Reservoir	517.272	78.451	15.2	-936	0.0	-9.918	-1.9	
Eagle Mountain Lake	185,087	159,956	86.4	12,121	6.5	5,145	2.8	
Elephant Butte Reservoir (Texas)	852,491	183,390	21.5	-3,714	0.0	2,045	0.2	
Elephant Butte Reservoir (Total Storage)	1,960,900	424,513	21.6	-8,597	0.0	4,733	0.2	
*Falcon Reservoir (Texas & Mexico)	2,646,817	445,236	16.8	-239,785	-9.1	-159,263	-6.0	
*Falcon Reservoir (Texas)	1,562,367	173,870	11.1	-76,292	-4.9	-184,395	-11.8	
Fork Reservoir, Lake	605,061	605,061	100.0	0	0.0	25,474	4.2	
Fort Phantom Hill, Lake	70,030	47,282	67.5	418	0.6	2,887	4.1	
Georgetown, Lake	38,005	30,702	80.8	2,170	5.7	6,539	17.2	
Gibbons Creek Reservoir	25,721	25,721	100.0	1,363	5.3	887	3.4	
Graham, Lake	45,288	32,321	71.4	624	1.4	-1,648	-3.6	
Granbury, Lake	132,949	129,549	97.4	-2,992	-2.3	11,916	9.0	

CONSERVATION STOR	AGE DATA FO	R SELECTED N	ΟLAN	R TEXAS RES	ERVO	DIRS			
	Storage	ge Storage at end-April		Storage change from		Storage change from			
Name of lake or reservoir	capacity	2024		end-Mar 2024		end-Apr 2023			
	(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)**	(%)		
Continued									
Granger Lake	51,822	51,822	100	0	0.0	0	0.0		
Grapevine Lake	163,064	163,064	100	0	0.0	0	0.0		
Greenbelt Lake	59,968	6,746	11.2	83	0.1	-53	0.0		
*Halbert, Lake	6,033	5,367	89	-94	-1.6	60	1.0		
Hords Creek Lake	8,109	1,730	21.3	-50	0.0	-636	-7.8		
Houston County Lake	17,113	17,113	100	0	0.0	0	0.0		
Houston, Lake	132,318	132,318	100	0	0.0	0	0.0		
Hubbard Creek Reservoir	313,298	158,819	50.7	-806	0.0	-41,098	-13.1		
Hubert H Moss Lake	24,058	24,058	100	184	0.8	184	0.8		
Inks, Lake	13,729	12,897	93.9	-132	0.0	-69	0.0		
J. B. Thomas, Lake	199,931	38,641	19.3	-2,163	-1.1	-3,832	-1.9		
Jacksonville, Lake	25,670	25,670	100	0	0.0	0	0.0		
Jim Chapman Lake (Cooper)	258,723	258,723	100	0	0.0	0	0.0		
Joe Pool Lake	149,629	149,629	100	0	0.0	0	0.0		
Kemp, Lake	245,307	197,551	80.5	18,853	7.7	37,623	15.3		
Kickapoo, Lake	86,345	52,943	61.3	5,871	6.8	350	0.4		
Lavon Lake	409,757	409,757	100	0	0.0	3,294	0.8		
Leon, Lake	27,762	13,157	47.4	-119	0.0	-2,854	-10.3		
Lewisville Lake	563,228	563,228	100	0	0.0	1,350	0.2		
Limestone, Lake	203,780	203,780	100	0	0.0	0	0.0		
*Livingston, Lake	1,603,504	1,603,504	100	0	0.0	0	0.0		
*Lost Creek Reservoir	11,950	11,301	94.6	315	2.6	-460	-3.8		
Lyndon B Johnson, Lake	112,778	110,853	98.3	-128	0.0	-640	0.0		
Mackenzie Reservoir	46,450	4,274	9.2	2	0.0	1,571	3.4		
Marble Falls, Lake	7,597	7,203	94.8	-12	0.0	18	0.2		
Martin, Lake	75,726	75,726	100	99	0.1	0	0.0		
Medina Lake	254,823	7,025	2.8	-430	0.0	-6,127	-2.4		
Meredith, Lake	500,000	218,292	43.7	-2,499	0.0	69,822	14.0		
Millers Creek Reservoir	26,768	15,250	57	2,513	9.4	-852	-3.2		
*Mineral Wells, Lake	5,273	5,273	100	0	0.0	1,172	22.2		
Monticello, Lake	34,740	30,596	88.1	460	1.3	1,039	3.0		
Mountain Creek, Lake	22,850	22,850	100	0	0.0	0	0.0		
Murvaul, Lake	38,285	38,285	100	0	0.0	0	0.0		
Nacogdoches, Lake	39,522	39,522	100	0	0.0	0	0.0		
Nasworthy	9,615	8,897	92.5	-26	0.0	824	8.6		
Navarro Mills Lake	49,827	49,827	100	0	0.0	0	0.0		
New Terrell City Lake	8,583	6,154	71.7	2,163	25.2	2,616	30.5		
Nocona, Lake (Farmers Crk)	21,444	15,683	73.1	1,435	6.7	-1,767	-8.2		
North Fork Buffalo Creek Reservoir	15,400	5,986	38.9	1,505	9.8	-630	-4.1		
O' the Pines, Lake	241,363	241,363	100	0	0.0	0	0.0		
O. C. Fisher Lake	115,742	1,905	1.6	-184	0.0	-1,172	-1.0		
*O. H. Ivie Reservoir	554,340	145,272	26.2	-3,431	0.0	-56,717	-10.2		
Oak Creek Reservoir	39,210	12,393	31.6	-419	-1.1	-5,027	-12.8		

CONSERVATION STOR	AGE DATA FO	R SELECTED N	ΛAJO	R TEXAS RES	ERVO	DIRS	
Name of lake or reservoir	Storage capacity	Storage at end-April 2024		Storage change from end-Mar 2024		Storage change from end-Apr 2023	
	(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)**	(%
	Ca	ontinued					
Palestine, Lake	367,303	367,303	100	0	0.0	0	0.0
Palo Duro Reservoir	61,066	1,929	3.2	-243	0.0	1,724	2.8
Palo Pinto, Lake	26,766	11,008	41.1	290	1.1	-2,220	-8.3
Pat Cleburne, Lake	26,008	26,008	100	0	0.0	5,252	20.2
*Pat Mayse Lake	113,683	113,683	100	0	0.0	0	0.0
Possum Kingdom Lake	538,139	538,139	100	2,681	0.5	93,303	17.3
Proctor Lake	54,762	16,289	29.7	-337	0.0	-4,632	-8.5
Ray Hubbard, Lake	439,559	439,559	100	0	0.0	0	0.0
Ray Roberts, Lake	788,167	788,167	100	9,325	1.2	0	0.0
Red Bluff Reservoir	151,110	62,365	41.3	-221	0.0	-24,926	-16.5
Richland-Chambers Reservoir	1,099,417	1,099,417	100	0	0.0	63,204	5.7
Sam Rayburn Reservoir	2,857,077	2,529,033	88.5	332,758	11.6	-328,044	-11.5
Somerville Lake	150,293	150,293	100	0	0.0	0	0.0
Squaw Creek, Lake	151,250	151,250	100	63	0.0	0	0.0
Stamford, Lake	51,570	41,634	80.7	5,865	11.6	7,146	13.9
Stillhouse Hollow Lake	229,796	155,603	67.7	16,267	7.1	-3,455	-1.5
Striker, Lake	16,878	16,546	98	38	0.2	-117	0.0
Sweetwater, Lake	12,267	5,535	45.1	-84	0.0	-1,439	-11.7
*Sulphur Springs, Lake	17,747	17,747	100	0	0.0	0	0.0
Tawakoni, Lake	871,685	871,685	100	0	0.0	0	0.0
Texana, Lake	158,975	151,285	95.2	-6,562	-4.1	-7,690	-4.8
Texoma, Lake (Texas & Oklahoma)	2,487,601	2,536,800	100	185,320	7.4	202,236	8.1
Texoma, Lake (Texas)	1,243,801	1,243,801	100	68,061	5.5	76,519	6.2
Toledo Bend Reservoir (Texas & Louisiana)	4,472,900	4,562,464	100	427,534	9.6	120,589	2.7
Toledo Bend Reservoir (Texas)	2,236,450	2,236,450	100	171,035	7.6	17,562	0.8
Travis, Lake	1,098,044	407,411	37.1	-6,024	0.0	-75,110	-6.8
Twin Buttes Reservoir	182,454	24,782	13.6	-1,541	0.0	-23,964	-13.1
Tyler, Lake	72,073	72,073	100	0	0.0	0	0.0
Waco, Lake	189,418	189,418	100	0	0.0	75,861	40.0
Waxahachie, Lake	11,060	11,060	100	0	0.0	0	0.0
Weatherford, Lake	17,812	14,159	79.5	1,457	8.2	4,046	22.7
White River Lake	29,880	6,440	21.6	-1,043	-3.5	2,969	9.9
Whitney, Lake	564,808	564,808	100	0	0.0	112,685	20.0
Worth, Lake	24,419	17,137	70.2	2,345	9.6	691	2.8
Wright Patman Lake	310,382	310,382	100	187,789	60.5	1	0.0
	STATE	WIDE TOTAL					
	32 575 091	23,800,748	73 1	857 661	26	-457 054	-14

\*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 April 2024, root zone soil moisture was low [yellow, orange, Figure 5(a)] in much of the state. Areas of more severe dryness [brown shading, Figure 5(a)] were seen in the Trans Pecos, northeastern and southern High Plains, northern and central Low Rolling Plains, western and northern Edwards Plateau, northern and southern South Central, much of Southern, and western East Texas climate divisions. Average soil moisture [green shading, Figure 5(a)] was seen in central and eastern North Central, areas of East Texas, northeastern Southern, southern Lower Valley, areas of South Central, and much of the Upper Coast climate divisions.

Compared to conditions at the end of March 2024, soil moisture increased [blue shading in Figure 5(b)] in the central and southern High Plains, southern and eastern Low Rolling Plains, portions of northwestern, southern, and eastern Edwards Plateau, much of North Central, East Texas, portions of northern South Central, and eastern Upper Coast climate divisions. Soil moisture decreased [red shading in Figure 5(b)] in the northern High Plains, northern Low Rolling Plains, central North Central, portions of the Edwards Plateau, Trans Pecos, northeastern Southern, Lower Valley, and the western Upper Coast climate divisions.



**Figure 5**: (a) Root zone soil moisture conditions in April 2024 and (b) the difference in root zone soil moisture between end-March 2024 and end-April 2024.

## STREAMFLOW CONDITIONS

Normal streamflow (25–75<sup>th</sup> percentile, green shading, Figure 6) was recorded in parts of the Panhandle, Northern, and Central regions of Texas this month. Above normal streamflow (76– 90<sup>th</sup> percentile, light blue shading, Figure 6) was seen in the Upper Red, Sulphur (Lower Sulphur and White Oak Bayou watersheds), Cypress, Neches, Neches-Trinity, Trinity, Upper Brazos (Double Mountain Fork Brazos watershed), Lower Brazos, Brazos-Colorado (San Bernard watershed), San Antonio-Nueces (Aransas bay watershed), and Upper Colorado (Beals watershed) river basins. Much above normal streamflow (>90<sup>th</sup> percentile, dark blue shading, Figure 6) was seen in the Upper Brazos (Running Water Draw watershed), Sulphur Headwater, Cypress (Cross Bayou and Lake O' the Pines watersheds), Upper and Lower Sabine, Neches (Upper Neches and Village watersheds), Trinity (Lower Trinity-Kickapoo watershed) river basins. A record high (black shading, Figure 6) was seen in the Sabine (Lake Fork watershed) river basin.

Below normal streamflow (10–24<sup>th</sup> percentile, orange shading, Figure 6) was seen in the Canadian, Upper and Lower Red, Colorado, Nueces, and Nueces-Rio Grande river basins. Much below normal streamflow (<10<sup>th</sup> percentile, dark red shading, Figure 6) was seen in Upper Red (Lower Prairie Dog Fork Red watershed), Pecos, Upper Colorado, Middle Guadalupe, San Antonio (Medina watershed), Nueces, Nueces-Rio Grande (San Fernando watershed), and San Antonio-Nueces (Mission watershed) river basins. A record low (bright red shading, Figure 6) was recorded in the Middle Colorado river basin.



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



## APRIL 2024 GROUNDWATER LEVELS IN MONITORING WELLS

Water level measurements were available for 16 key monitoring wells in the state. The recorders in two wells (#4 and #14 on map) were offline or the well experienced issues during the reporting period. Water levels rose in six monitoring wells since the beginning of April, with an increase of 0.13 feet in the El Paso County Hueco-Mesilla Bolsons Aquifer well (#13 on map) to 2.86 feet in the La Salle County Carrizo-Wilcox Aquifer well (#10 on map). Water levels declined in nine monitoring wells, ranging from a decline of -0.05 feet in the Lamb County Ogallala Aquifer well (#2 on map) to -6.89 feet in the Pecos County Edwards-Trinity (Plateau) Aquifer well (#15 on map). Water level changes were not available for one well (#3) that was offline in March. The J-17 well (#8 on map) in San Antonio recorded a water level of 92.10 feet below land surface or 638.90 feet above mean sea level. Water levels are 1.10 feet below the Stage 3 critical management levels for the San Antonio portion of the Edwards (Balcones Fault Zone) Aquifer. The Edwards Aquifer Authority declared Stage 3 water restrictions effective April 3, 2024, 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	April (depth to water, feet)	March (depth to water, feet)	Month Change	Year Change	Historical Change*	First Measured (year)
(1) Hansford 0354301	165.26	165.11	-0.15	-1.02	-95.14	1951
(2) Lamb 1053602	154.90	154.85	-0.05	-1.00	-126.73	1951
(3) Martin 2739903	145.84	NA	NA	0.12	-40.95	1964
(4) Dallas 3319101	NA	502.74	NA	NA	-280.74	1954
(5) Coryell 4035404	545.59	545.87	0.28	-2.35	-253.59	1955**
(6) Kendall 6802609	153.49	151.31	-2.18	-1.64	- <b>93.4</b> 9	1975
(7) Bell 5804816	122.37	123.02	0.65	2.57	1.14	2008
(8) Bexar 6837203	92.10	91.20	-0.90	-2.80	-45.46	1932
(9) Anderson 3813106	239.24	238.55	-0.69	-3.60	-94.24	1965**
(10) La Salle 7738103	524.77	527.63	2.86	10.98	-271.70	2003
(11) Harris 6514409	195.73	196.68	<b>0.95</b>	NA	-60.23*	1947**
(12) Victoria 8017502	31.98	32.23	0.25	0.30	2.02	1958**
(13) El Paso 4913301	297.78	297.91	0.13	2.50	-65.88	1964**
(14) Reeves 4644501	NA	NA	NA	NA	-58.05	1952
(15) Pecos 5216802	211.11	204.22	-6.89	-11.12	35.77	1976
(16) Schleicher 5512134	317.46	315.66	-1.80	-2.15	-15.56	2003
(17) Haskell 2135748	47.19	46.64	-0.55	-0.23	-4.19	2002
(18) Hudspeth 4807516	147.86	147.23	-0.63	3.58	-43.94	1966

\*Change since the original measurement taken on the date indicated in the last column. The historical changes shown for recorder well #4 and #14 are based off the most recent water level records from March 2024 and February 2024, respectively.

\*\* Measurement not shown on the hydrograph.

NA (not available). All data are provisional and subject to revision.



\* Recorder well #4 expereinced issues in April 2024 and no data are reported.





\*Recorder well #14 has experienced issues since March 2024 and no data are reported.



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



The late April water level measurement in this Edwards (Balcones Fault Zone) Aquifer well, located at an elevation of 731 feet above mean sea level, was 92.10 feet below land surface, or 638.90 feet above mean sea level. This was 0.90 feet below last month's measurement, 2.80 feet below last year's measurement, and 45.46 feet below the initial measurement recorded in 1932.

Water levels below the red line indicate periods in which Edwards Aquifer Authority Stage 3 drought restrictions are in effect. The Edwards Aquifer Authority declared an increase from Stage 2 to Stage 3 Critical Period Management permit reductions as of April 3, 2024, 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.

The Blaine Aguifer is a minor aguifer located at the east end of the High Plains in North Texas. The aquifer is part of the Permian Blaine Formation, which is composed of red silty shale, gypsum, anhydrite, salt, and dolomite. The formation consists of cycles of marine and nonmarine sediments deposited in a broad, shallow sea that once covered the southwestern United States. Groundwater occurs primarily in solution channels and caverns within the beds of anhydrite and gypsum which contributes to overall poor water quality. Although some wells contain slightly saline water, with total dissolved solids between 1,000 and 3,000 milligrams per liter, most contain moderately saline water, with total dissolved solids between 3,000 and 10,000 milligrams per liter, exceeding the secondary drinking water standard of 1,000 milligrams per liter. Sulfate values are also in excess of the secondary drinking water standard of 300 milligrams per liter. Groundwater for domestic and livestock purposes is available from shallow wells over most of the aquifer's extent. Water is also used for some municipal, industrial, and irrigation purposes.



The initial measurement of 161.60 feet below land surface was recorded at this well in January of 1956 and the Texas Water Development Board has measured and recorded near-annual water level measurements at this well since 1962. The period of record reveals an initial rise and fall in water levels from 1956 to 1968, followed by an overall increasing trend through the 1990s. Water levels sharply declined in 2001 and continue to overall decline, albeit at a lesser rate, through the present day. The trends shown over the period of record for this hydrograph are comparable to those seen in other TWDB monitoring wells in the same aquifer. Annual variations are likely attributed to changes in water use patterns and local area pumping.





Photo of well #13-33-102 general setting (left) and well head (right)

<sup>1.</sup> 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/blaine.asp