

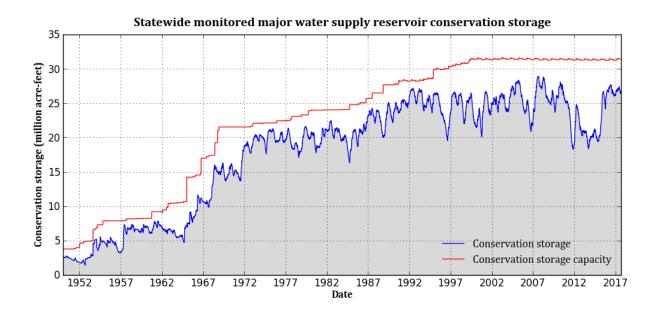


August 2017 RESERVOIR STORAGE*

At the end of August 2017, total conservation storage* in 118 of the state's major water supply reservoirs was 26.9 million acre-feet or 83 percent of total conservation storage capacity. This is approximately 0.18 million acre-feet more than a month ago but 0.15 million acre-feet less than storage at this time last year.

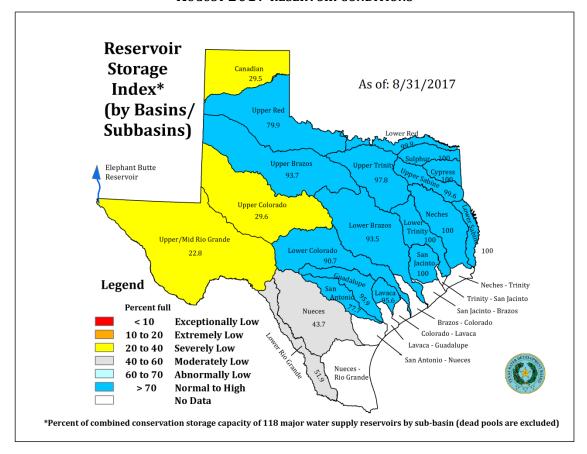
Forty-one (41) reservoirs held 100 percent of conservation storage capacity, primarily in the North Central (17 reservoirs) and East (19 reservoirs) regions. One reservoir, Palo Duro (1 percent), remained below 10 percent full.

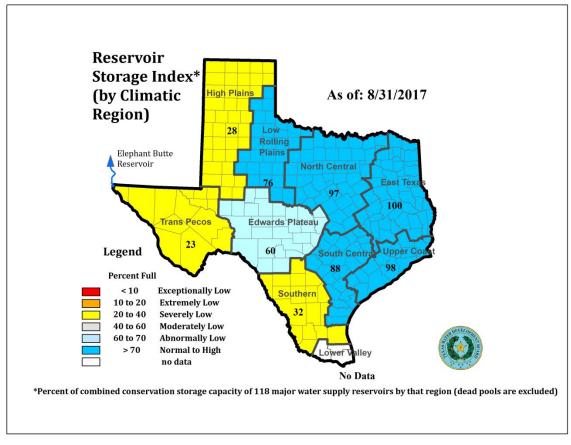
Total combined storage was at or above normal (storage ≥70 percent) in the East (100 percent), Upper Coast (98 percent), North Central (97 percent), South Central (88 percent), and Low Rolling Plains (76 percent) regions. The High Plains (25 percent), Trans-Pecos (23 percent), and Southern (32 percent) regions had the lowest percentage of storage. Overall, storage increased in six but decreased in three regions over the past month.



^{*}Storage is based on end of the month data in 117 major reservoirs that represent 96 percent of the total conservation storage capacity of 188 major water supply reservoirs in Texas plus Elephant Butte reservoir in New Mexico. Major reservoirs are defined as having a conservation storage capacity of 5,000 acre-feet or greater. Only the Texas share of storage in border reservoirs is counted.

AUGUST 2017 RESERVOIR CONDITIONS





^{*}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	Conservation storage capacity	Conservation storage end of August 2017		Change since end of July 2017		Change since end of August 2016				
	(acre-feet)	(acre-feet)	(%)	(acre-feet)** (%)		(acre-feet)** (%)				
HIGH PLAINS										
MacKenzie Reservoir	46,450	7,127	15	340	1	-14	0			
Meredith, Lake	500,000	147,375	29	28,362	6	23,728	5			
Palo Duro Reservoir	61,066	550	1	-50	0	-1,100	-2			
White River Lake	29,880	6,367	21	-169	-1	-1,591	-5			
TOTAL	637,369	161,419	25	28,483	4	21,023	3			
LOW ROLLING PLAINS										
Abilene, Lake	7,900	6,253	79	-540	-7	-1,594	-20			
Alan Henry Reservoir	94,808	83,954	89	-150	-0	-1,780	-2			
Champion Creek Reservoir	41,580	20,722	50	-265	-1	10,461	25			
Coleman, Lake	38,075	35,979	94	-320	-1	160	0			
Colorado City, Lake	30,758	13,571	44	-108	-0	6,261	20			
Fort Phantom Hill, Lake	70,030	66,790	95	-838	-1	566	1			
Greenbelt Lake	59,968	15,676	26	143	0	-816	-1			
Hords Creek Lake	8,443	6,132	73	-202	-2	-1,240	-15			
J. B. Thomas, Lake	199,931	108,295	54	-2,703	-1	-18,750	-9			
Kemp, Lake	245,307	238,019	97	11,753	5	16,567 2,605	7			
Millers Creek Reservoir North Fork Buffalo Creek	26,768	26,680	100	-88	-88 -0		10			
Reservoir	15,400	11,247	73	-384	-2	-301	-2			
Stamford, Lake	51,570	51,570	100	0	0	5,590	11			
Sweetwater, Lake	12,267	2,621	21	-86	-1	-39	-0			
TOTAL	902,805	687,509	76	6,212	1	17,690	2			
		NORTH CENTI	RAL							
Amon G Carter, Lake	19,266	18,394	95	278	1	-872	-5			
Aquilla Lake	43,243	42,048	97	-1,195	-3	-1,195	-3			
Arlington, Lake	40,188	37,918	94	1,432	4	5,460	14			
Arrowhead, Lake	230,359	202,244	88	-3,520	-2	-8,037	-3			
Bardwell Lake	46,122	44,194	96	-1,178	-3	-1,928	-4			
Belton Lake	435,225	427,376	98	-5,910	-1	-7,849	-2			
Benbrook Lake	85,648	84,878	99	3,448	4	2,918	3			
Bonham, Lake	11,027	10,942	99	2,252	20	1,696	15			
Bridgeport, Lake	366,236	357,307	98	-2,659	-1	-8,929	-2			
*Brownwood, Lake	128,839	119,783	93	-3,825	-3	-2,879	-2			
*Cisco, Lake	29,003	25,549	88	-274	-1	-1,071	-4			
Crook, Lake	9,195	9,195	100	42	0	941	10			
Eagle Mountain Lake	179,880	173,232	96	3,191	2	-6,648	-4			
Georgetown, Lake	36,823	25,579	69	-696	-2	-11,244	-31			
Graham, Lake	45,288	43,500	96	-560	-1	-1,788	-4			
Granbury, Lake	132,949	132,623	100	1,382	1	-326	-0			
Granger Lake	51,822	51,822	100	0	0	0	0			
Grapevine Lake	164,703	164,703	100	0	0	0	0			
*Halbert, Lake	6,033	5,176	86	135	2	-153	-3			
Hubbard Creek Reservoir	318,067	294,579	93	-6,874	-2	-855	-0			
Hubert H Moss Lake	24,058	23,574	98	298	1	1,400	6			
Jim Chapman Lake (Cooper)	260,332	260,332	100	34,393	13	23,269	9			
Joe Pool Lake	175,358	174,546	100	-74	-0	3,173	2			
Kickapoo, Lake	86,345	72,184	84	580	1	-10,741	-12			
Lavon Lake	406,388	406,388	100	14,319	4	37,734	9			
Leon, Lake	27,762	25,929	93	-777	-3	1,280	5			
Lewisville Lake	563,228	563,228	100	7,269	1	0	0			
Limestone, Lake	203,780	183,178	90	-6,802	-3	-13,831	-7			
*Lost Creek Reservoir	11,950	11,274	94	-152	-1	-604	-5			
*Mineral Wells, Lake	5,273	5,111	97	-97	-2	-162	-3			
Mountain Creek, Lake	22,850	22,850	100	0	0	0	0			

CONSERVATIO	N STORAGE DA	TA FOR SELE	CTED M	IAJOR TEXAS	RESER	RVOIRS	
Name of lake or reservoir	Conservation Conservation storage storage capacity end of August 2017			Change sinc end of July 20	Change since end of August 2016		
	(acre-feet)	(acre-feet)	(%)	(acre-feet)**	(%)	(acre-feet)**	(%)
		(North Central cont	inued)				
Navarro Mills Lake	49,827	47,776	96	-973	-2	-2,051	-4
New Terrell City Lake	8,583	8,583	100	0	0	190	2
Nocona, Lake (Farmers Crk)	21,444	20,898	97	212	1	802	4
Palo Pinto, Lake	26,766	25,748	96	366	1	no data	
Pat Cleburne, Lake	26,008	24,596	95	-991	-4	490	2
*Pat Mayse Lake	113,683	113,683	100	0	0	4,586	4
Possum Kingdom Lake	523,873	516,547	99	-973	-0	-5,368	-1
Proctor Lake	54,762	49,214	90	-4,309	-8	-2,317	-4
Ray Hubbard, Lake	439,559	438,724	100	8,474	2	14,182	3
Ray Roberts, Lake	788,167	788,167	100	12,417	2	284	0
Richland-Chambers Reservoir	1,087,839	1,050,485	97	-19,866	-2	-37,354	-3
Squaw Creek, Lake	151,250	151,250	100	0	0	0	0
Stillhouse Hollow Lake	227,771	224,500	99	-2,885	-1	-3,271	-1
Tawakoni, Lake	871,685	871,685	100	58,920	7	42,186	5
Texoma, Lake (Texas)	1,258,113	1,258,113	100	1,492	0	34,660	3
Texoma, Lake (Texas &							
Oklahoma)	2,525,281	2,527,455	100	14,206	1	80,542	3
Waco, Lake	189,418	180,621	95	-3,332	-2	-8,797	-5
Waxahachie, Lake	10,780	9,538	88	-671	-6	-1,235	-11
Weatherford, Lake	17,812	17,725	100	1,056	6	0	0
Whitney, Lake	553,344	484,841	88	-7,715	-1	-24,875	-4
Worth, Lake	33,495	30,458	91	132	0	-3,037	-9
TOTAL	10,621,419	10,332,788	97	75,780	1	7,834	0
		EAST					
Athens, Lake	29,503	29,117	99	-239	-1	562	2
B A Steinhagen Lake	66,961	66,961	100	5,889	9	4,263	6
Bob Sandlin, Lake	190,822	190,822	100	692	0	3,956	2
Caddo, Lake	29,898	29,898	100	1,260 4		0	0
Cedar Creek Reservoir in Trinity	644,686	626,224	97	-7,727 -1		4,477	
Cherokee, Lake	40,094	40,094	100	0		no data	
Conroe, Lake	410,988	410,988	100	5,355	1	0	0
Cypress Springs, Lake	66,756	66,756	100	903 1		2,912	4
Fork Reservoir, Lake	605,061	605,061	100	15,713		35,111	6
Houston County Lake	17,113	17,113	100	206	3 1	0	0
Jacksonville, Lake	25,670	25,670			0	0	0
*Livingston, Lake	1,785,348	1,785,348 100		0	0	0	0
Martin, Lake	75,726	70,244	93	-2,204	-3	-2,204	-3
Monticello, Lake	34,740	34,678	100	-62	-0	-62	-0
Murvaul, Lake	38,285	37,192	97	203	1	338	1
Nacogdoches, Lake	39,522	39,000	99	302	1	-151	-0
O' the Pines, Lake	268,566	268,566	100	7,033	3	0	0
Palestine, Lake	367,303	367,303	100	5,520	2	18,651	5
Sam Rayburn Reservoir	2,857,077	2,857,077	100	75,097	3	91,800	3
Striker, Lake	16,934	16,913	100	-21	-0	no data	-
*Sulphur Springs, Lake	17,747	17,747	100	73	0	1,367	8
Toledo Bend Reservoir (Texas) Toledo Bend Reservoir (Texas &	2,236,450	2,236,450	100	38,667	2	140,668	6
Louisiana)	4,472,900	4,812,632	100	412,966	9	616,968	14
Tyler, Lake	72,073	71,931	100	1,818	3	3,784	5
Wright Patman Lake	231,496	231,496	100	0	0	0	0
TOTAL	10,168,819	10,142,649	100	148,571	1	305,472	3

CONSERVATIO	N STORAGE DA	TA FOR SELE	CTED M	IAJOR TEXAS	RESEF	RVOIRS	
Name of lake or reservoir	Conservation storage capacity	1 64 . 2045		Change since end of July 2017		Change since end of August 2016	
	(acre-feet)	(acre-feet)	(%)	(acre-feet)**	(%)	(acre-feet)**	(%)
		TRANS-PECO	S				
Elephant Butte Reservoir (Texas) Elephant Butte Reservoir (Texas	852,491	123,761	15	-35,132	-4	66,142	8
& New Mexico)	1,973,358	286,483	15	-81,325	-4	153,107	8
Red Bluff Reservoir	151,110	104,749	69	2,243	1	-20,685	-14
TOTAL	1,003,601	228,510	23	-32,889	-3	45,457	5
		EDWARDS PLAT	ΓΕΑU				
*Amistad Reservoir (Texas) *Amistad Reservoir (Texas &	1,840,849	1,360,752	74	-33,371	-2	-107,790	-6
Mexico)	3,275,532	1,696,801	52	59,554	2	-420,039	-13
Brady Creek Reservoir	28,808	17,515	61	-238	-1	3,333	12
Buchanan, Lake	816,904	788,184	96	-5,588	-1	-23,082	-3
E. V. Spence Reservoir	517,272	72,722	14	-774	-0	23,277	4
Inks, Lake	13,962	13,035	93	68	0	158	1
Lyndon B Johnson, Lake	115,249	110,392	96	-61	-0	-244	-0
Marble Falls, Lake	6,901	6,777	98	-70	-1	-16	-0
Nasworthy	9,615	7,588	79	-121	-1	-460	-5
Oak Creek Reservoir	39,210	21,146	54	-232	-1	2,288	6
O. C. Fisher Lake	119,445	13,910	12	-637	-1	-4,030	-3
*O. H. Ivie Reservoir	554,340	117,085	21	-4,736	-1	-1,604	-0
Twin Buttes Reservoir	182,454	16,901	9	-1,997	-1	334	0
TOTAL	4,245,009	2,546,007	60	-47,757	-1	-107,836	-3
		SOUTH CENTR	AL				
*Austin, Lake	23,972	22,757	95	31	0	61	0
Canyon Lake	378,781	362,138	96	-2,566	-1	-16,643	-4
*Coleto Creek Reservoir	31,040	31,040	100	4,664	15	2,369	8
Medina Lake	254,823	197,926	78	-7,539	-3	-53,813	-21
Somerville Lake	147,104	147,104	100	5,057	3	0	0
Travis, Lake	1,113,348	962,669	86	-11,750	-1	-150,679	-14
TOTAL	1,949,068	1,723,634	88	-12,103	-1	-218,705	-11
		UPPER COAS	T				
Houston, Lake	120,686	120,686	100	0	0	0	0
Texana, Lake	159,566	152,565	96	10,615	7	-6,817	-4
TOTAL	280,252	273,251	98	10,615	4	-6,817	-2
		SOUTHERN					
Choke Canyon Reservoir	662,820	220,804	33	-6,954	-1	-63,240	-10
Corpus Christi, Lake	256,062	181,135	71	-12,131	-5	-25,764	-10
*Falcon Reservoir (Texas)	1,551,007	398,749	26	24,442	2	-126,612	-8
*Falcon Reservoir (Texas &				•			
Mexico)	2,646,817	534,915	20	4,062	0	-204,379	-8
TOTAL	2,469,889	800,688	32	5,357	0	-215,616	-9
		STATEWIDE TO	TAL				
STATEWIDE TOTAL	32,278,258	26,896,455	83	182,269	1	-151,498	-0

^{*} Conservation volume is used as conservation storage capacity, because the dead storage is unknown.

Note:

Conservation storage capacity is the space available to store water above the lowest outlet and below the top of conservation pool (some may have seasonal variations), or normal maximum operating level. Conservation storage refers to the volume of water held within the conservation storage space. Not included is any water in flood control storage (above the top of conservation pool or normal maximum operating level) or any water in the dead pool storage. Conservation storage percentage is based on the conservation storage capacity of the reservoir and the conservation storage in the reservoir on date shown. Percent change is given by 100 * (current conservation storage - past conservation storage)/conservation storage capacity.

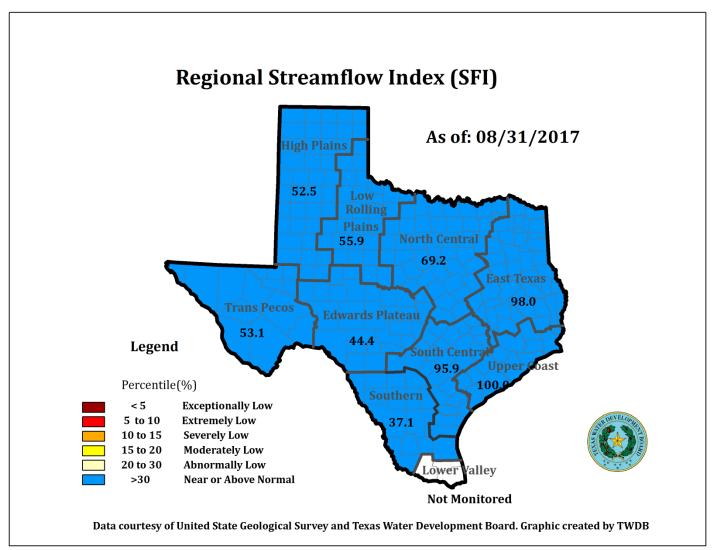
^{**}Monthly and yearly changes do not include reservoirs that did not have data in last month or last year, respectively.

AUGUST 2017 STREAMFLOW CONDITIONS

The computed 30-day mean flow status for 29 reporting index stations monitored this month is presented below. Mean flow increased at 26 index stations and decreased at 2 stations.

Streamflow Status	Number of Stations
Near or Above Normal (>30%)	25
Abnormally Low (20-30%)	0
Moderately Low (15-20%)	2
Severely Low (10-15%)	1
Extremely Low (5-10%)	1
Exceptionally Low (<5%)	0

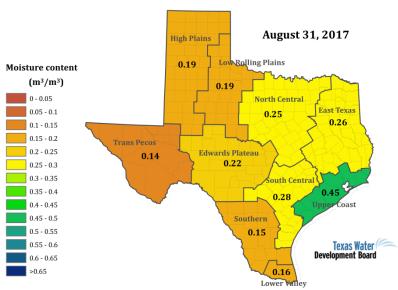
On a regional basis, as shown below, flows were at or above normal in all regions. Streamflow in the Lower Valley region is not monitored.



^{*}Streamflow Index is defined as the percentile flow that exceeds a given percent of observed flows.

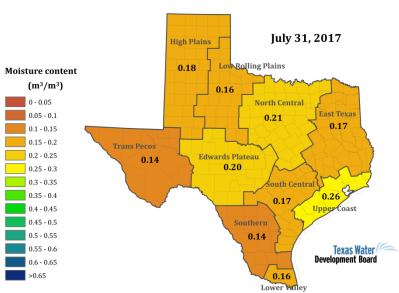
AUGUST 2017 SOIL MOISTURE CONDITIONS

Soil Moisture Condition



Data from NASA Soil Moisture Active Passive (SMAP) Level 4 - Model - Value Added Version 2
Soil moisture content is shown as volume of water per unit volume of bulk soil. Root zone: 0 to 1 meter depth.

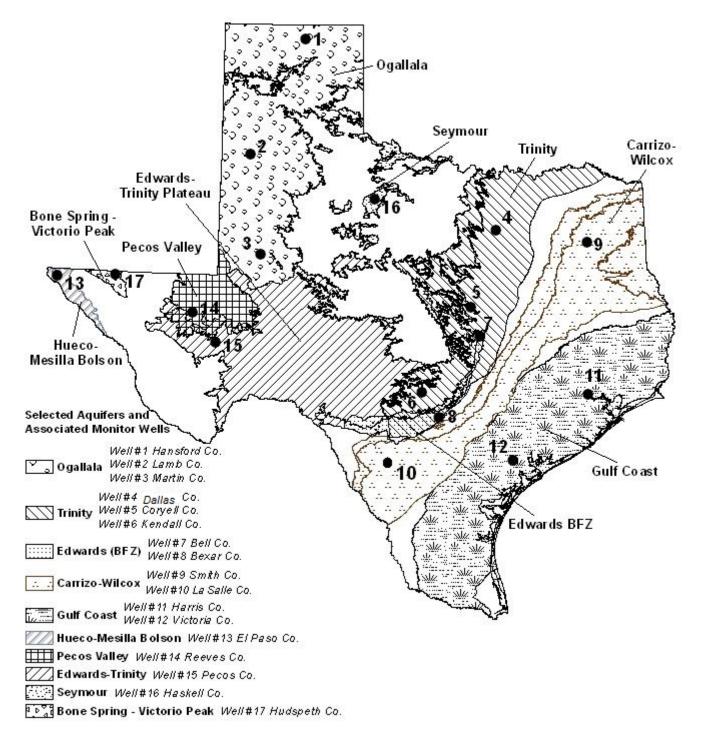
Soil Moisture Condition



Data from NASA Soil Moisture Active Passive (SMAP) Level 4 - Model - Value Added Version 2
Soil moisture content is shown as volume of water per unit volume of bulk soil. Root zone: 0 to 1 meter depth.

Soil moisture in the past 31 days (*top image*, end of August 2017), as compared to soil moisture at the end of July 2017 (*bottom image*), increased significantly. Four regions in Central and East Texas, including both North and South Central, East Texas and the Upper Coast regions, had the greatest increases, with soil moisture increasing between 19% to 73% in this portion of the state. The High Plains, Low Rolling Plains, Edwards Plateau, and Southern regions had slight increases, and soil moisture remained unchanged in the Trans Pecos and Lower Valley regions.

August 2017 GROUNDWATER LEVELS IN OBSERVATION WELLS

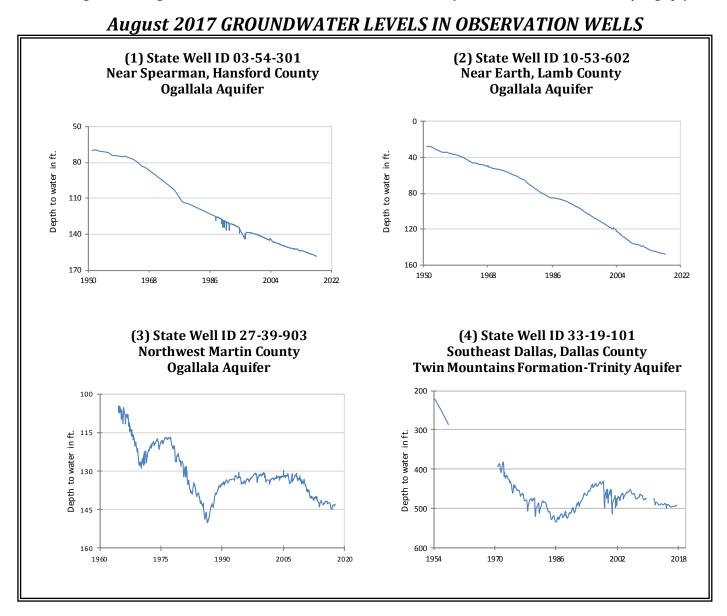


Water-level measurements were available for all 17 key monitoring wells in the state. Water levels rose in 10 monitoring wells since the beginning of August, ranging from an increase of 0.03 feet in the Dallas County Twin Mountains Formation – Trinity Aquifer well (#4 on map) to 10.60 feet in the Bexar County Edwards (Balcones Fault Zone) Aquifer well (#8 on map). Water levels declined in 7 monitoring wells, ranging from a decline of 0.05 feet in the Hansford County Ogallala Aquifer well (#1 on map) to 6.28 feet in the Kendall County Cow Creek Formation - Trinity Aquifer well (#6 on map). The J-17 well (#8 on map) in San Antonio recorded a water level of 76.41 feet below land surface or 665.19 feet above mean sea level. There are currently restrictions in place for the San Antonio portion of the Edwards (Balcones Fault Zone) Aquifer, with water levels at 5.19 feet below the Stage I critical management level.

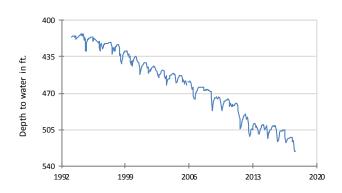
*IDs used in this publication on the aquifer map to indicate the monitoring well location (IDs 1 - 17) are different than the TWDB's six- or seven-digit state well identification number.

Monitoring Well	August	July	Month Change	Year Change	Historical Change	First Measured
(1) Hansford 0354301	158.51	158.46	-0.05	-1.25	-88.39	1951
(2) Lamb 1053602	147.74	147.56	-0.18	-0.86	-119.57	1951
(3) Martin 2739903	142.82	143.05	0.23	1.75	-37.93	1964
(4) Dallas 3319101	491.64	491.67	0.03	3.06	-269.64	1954
(5) Coryell 4035404	525.44	525.80	0.36	-7.90	-233.44	1955
(6) Kendall 6802609	130.68	124.40	-6.28	-2.45	-70.68	1975
(7) Bell 5804816	122.73	122.92	0.19	-3.29	0.78	2008
(8) Bexar 6837203	65.81	76.41	10.60	-9.60	-19.17	1932
(9) Smith 3430907	432.93	432.64	-0.29	2.57	-132.93	1987
(10) La Salle 7738103	486.10	481.54	-4.56	-15.56	-233.03	2003
(11) Harris 6514409	189.94	190.18	0.24	1.16	-54.44*	1947**
(12) Victoria 8017502	31.47	32.41	0.94	2.37	2.53	1958
(13) El Paso 4913301	294.04	294.42	0.38	1.00	-62.14	1964
(14) Reeves 4644501	167.07	168.34	1.27	-3.91	-74.98	1952
(15) Pecos 5216802	216.98	222.68	5.70	2.75	29.90	1976
(16) Haskell 2135748	46.90	46.63	-0.27	-0.17	-3.90	2002
(17) Hudspeth 4807516	154.63	153.97	-0.66	0.07	-50.71	1966

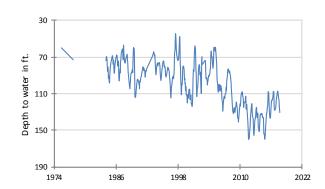
^{*}Change since the original measurement of 135.5 feet below land surface in 1947 (**measurement not shown on the hydrograph)



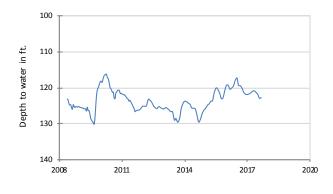
(5) State Well ID 40-35-404 Gatesville, Coryell County Hosston Formation-Trinity Aquifer



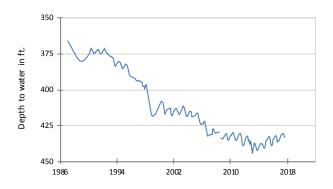
(6) State Well ID 68-02-609 Waring, Kendall County Cow Creek Formation-Trinity Aquifer



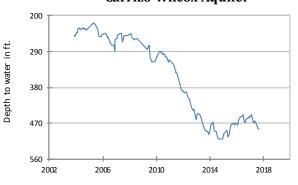
(7) State Well ID 58-04-816 Near Salado, Bell County Edwards (Balcones Fault Zone) Aquifer



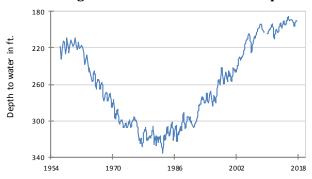
(9) State Well ID 34-30-907 Red Springs, Smith County Carrizo-Wilcox Aquifer



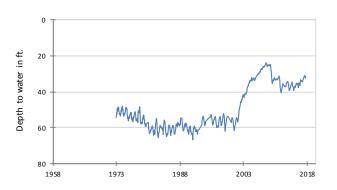
(10) State Well ID 77-38-103 Near Cotulla, La Salle County Carrizo-Wilcox Aquifer



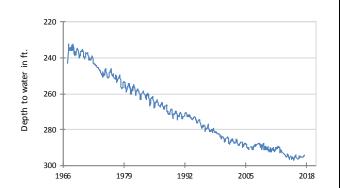
(11) State Well ID 65-14-409 Alief, Harris County Evangeline Formation-Gulf Coast Aquifer



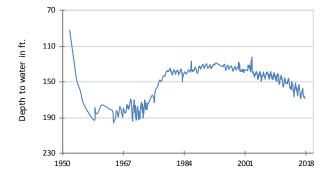
(12) State Well ID 80-17-502 Near Bloomington, Victoria County Lissie Formation-Gulf Coast Aquifer



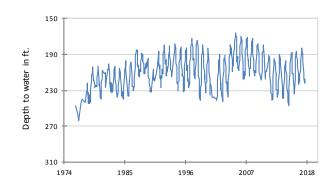
(13) State Well ID 49-13-301 El Paso, El Paso County Hueco-Mesilla Bolson Aquifer



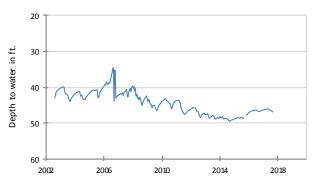
(14) State Well ID 46-44-501 Near Pecos, Reeves County Pecos Valley Aquifer



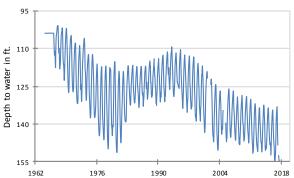
(15) State Well ID 52-16-802 Fort Stockton, Pecos County Edwards-Trinity (Plateau) Aquifer



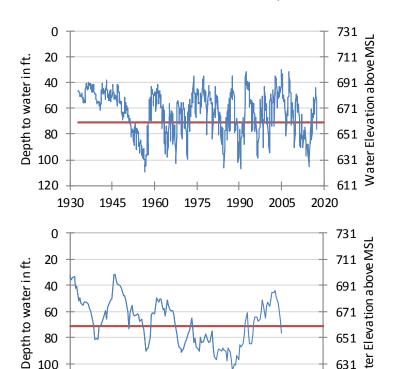
(16) State Well ID 21-35-748 Near O'Brien, Haskell County Seymour Aquifer



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



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



The late August water-level measurement in this Edwards (Balcones Fault Zone) Aquifer well, elevation 731 feet above mean sea level, was 65.81 feet below land surface, or 665,19 feet above mean sea level. This was 10.60 feet above last month's measurement, 9.60 feet below last year's measurement, and 19.17 feet below the initial measurement recorded in 1932.

*** Water levels below the red line indicate periods in which Edwards Aquifer Authority Stage I drought restrictions are in effect. ***



120

2005

HYDROGRAPH OF THE MONTH

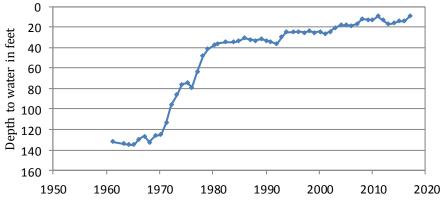
2020

611

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

Gulf Coast Aquifer

Well #8309703, 640 feet deep Unused Well, Jim Wells County



The first recorded water-level measurement for this unused well was 131.68 feet below land surface, measured in 1961. The TWDB has consistently measured this well every year since 1963. The lowest recorded water level measurement was 134.92 feet below land surface in 1964, and the highest recorded water-level measurement was 8.98 feet below land surface in 2017. The water level for this well has been on an upward trend most likely due to less irrigation pumping in the area.

The Gulf Coast Aquifer is a major aquifer paralleling the Gulf of Mexico coastline from the Louisiana border to the border of Mexico. It consists of several aquifers, including the Jasper, Evangeline, and Chicot aquifers, which are composed of discontinuous sand, silt, clay, and gravel beds. Freshwater saturated thickness averages about 1,000 feet. Water quality varies with depth and locality. It is generally good in the central and northeastern parts of the aquifer, where the water contains less than 500 milligrams per liter of total dissolved solids, but declines to the south, where it typically contains 1,000 to more than 10,000 milligrams per liter of total dissolved solids and where aquifer productivity decreases. High levels of radionuclides, thought mainly to be naturally occurring, are found in some wells in Harris County in the outcrop and in South Texas. Water level declines of as much as 350 feet have led to land subsidence in Harris, Galveston, Fort Bend, Jasper, and Wharton counties.

2008

2011

2014

2017