

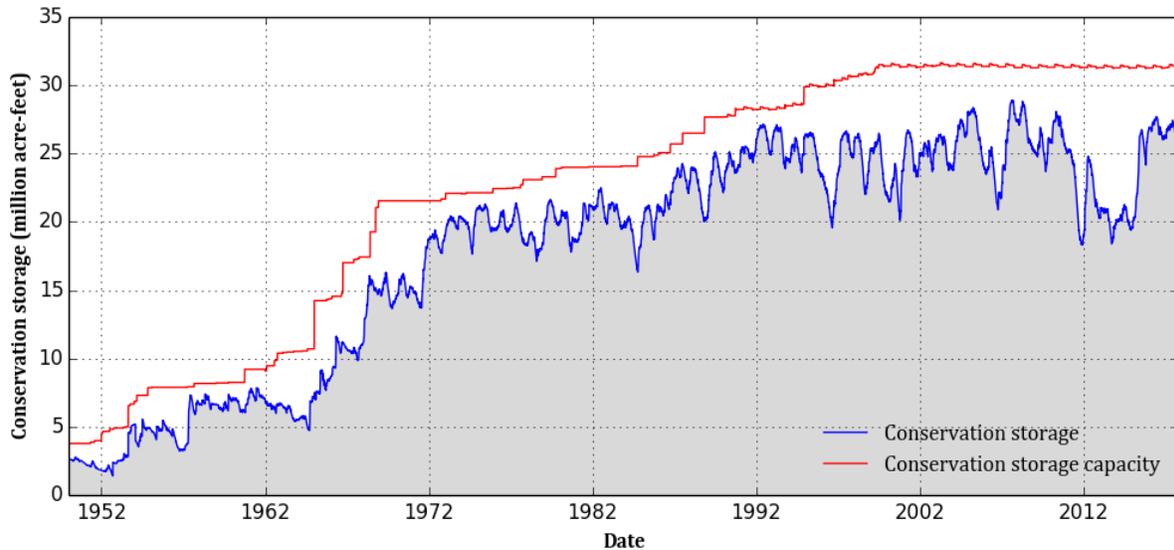
October 2017 RESERVOIR STORAGE*

At the end of October 2017, total conservation storage* in 118 of the state’s major water supply reservoirs was 26.08 million acre-feet or 81 percent of total conservation storage capacity. This is approximately 0.53 million acre-feet less than a month ago and 0.07 million acre-feet less than storage at this time last year.

Eleven (11) reservoirs held 100 percent of conservation storage capacity, primarily in the North Central (5 reservoirs) and East (3 reservoirs) regions. Two reservoirs, Palo Duro (1 percent) and Twine Butte (7 percent) remained below 10 percent full.

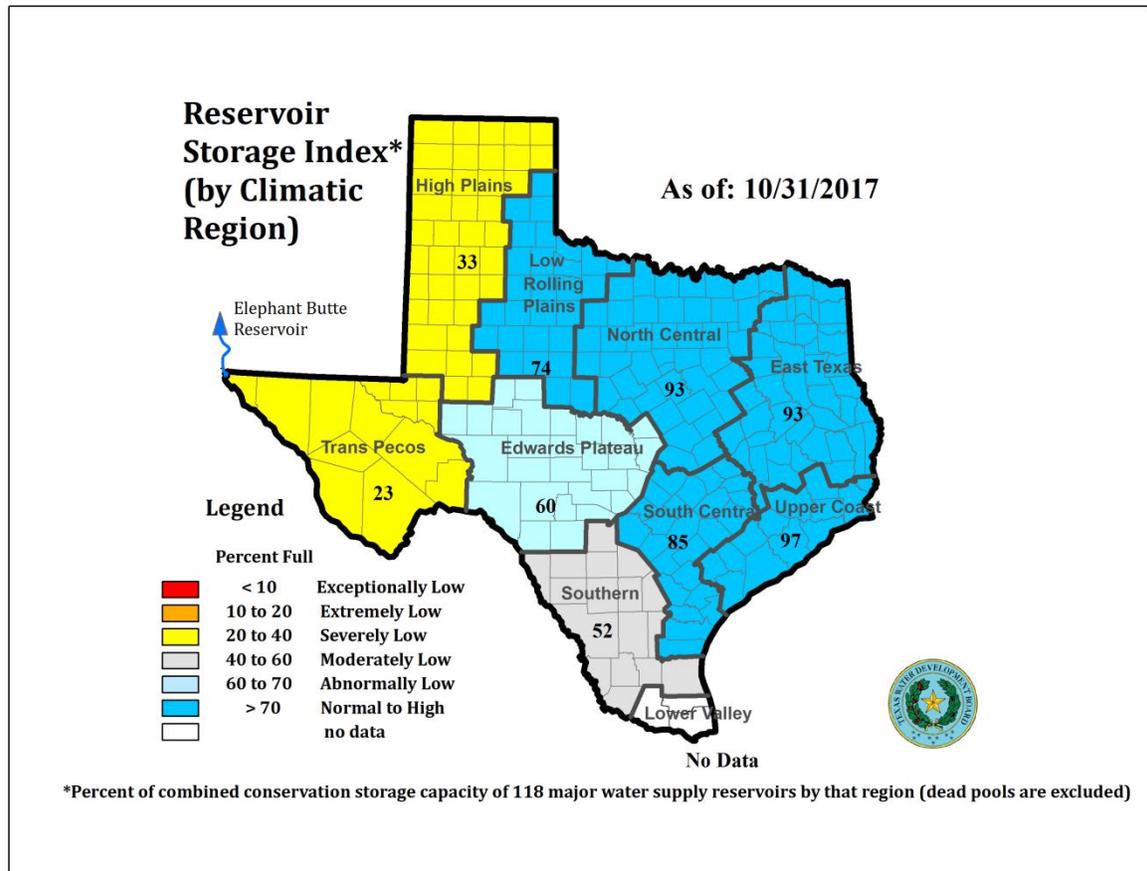
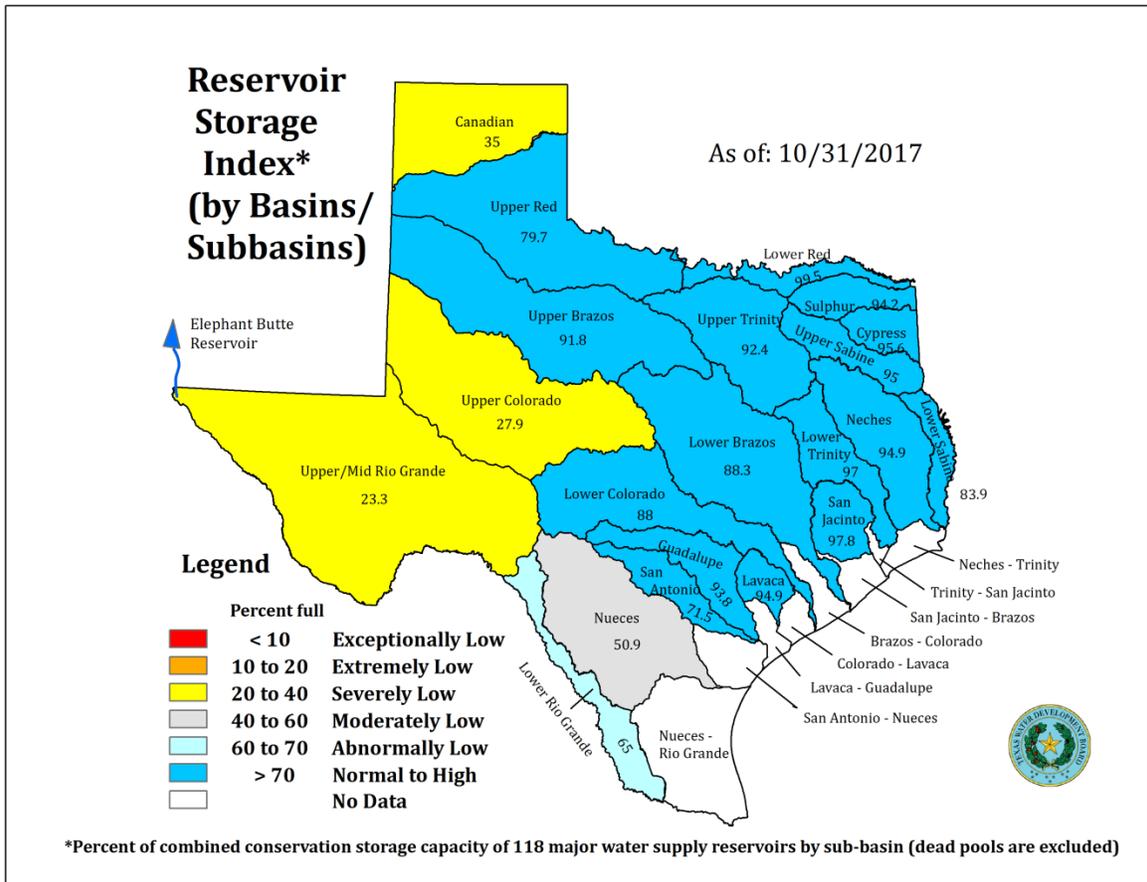
Total combined storage was at or above normal (storage ≥70 percent) in the Upper Coast (97 percent), East (93 percent), North Central (93 percent), South Central (85 percent), and Low Rolling Plains (74 percent) regions. The High Plains (33 percent) and Trans-Pecos (23 percent) regions had the lowest percentage of storage. Overall, storage increased in four but decreased in five regions over the past month.

Statewide monitored major water supply reservoir conservation storage



*Storage is based on end of the month data in 118 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.

OCTOBER 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 October 2017		Change since end of September 2017		Change since end of October 2016	
	(acre-feet)	(acre-feet)	(%)	(acre-feet)**	(%)	(acre-feet)**	(%)
HIGH PLAINS							
MacKenzie Reservoir	46,450	6,986	15	-86	-0	-38	-0
Meredith, Lake	500,000	195,363	39	41,565	8	77,126	15
Palo Duro Reservoir	61,066	876	1	407	1	-377	-1
White River Lake	29,880	6,410	21	-373	-1	-1,010	-3
TOTAL	637,396	209,635	33	41,513	7	75,701	12
LOW ROLLING PLAINS							
Abilene, Lake	7,900	5,418	69	-534	-7	-2,268	-29
Alan Henry Reservoir	94,808	83,805	88	-2,005	-2	-2,409	-3
Champion Creek Reservoir	41,580	19,901	48	-429	-1	8,133	20
Coleman, Lake	38,075	34,516	91	-967	-3	-1,073	-3
Colorado City, Lake	30,758	12,826	42	-357	-1	5,040	16
Fort Phantom Hill, Lake	70,030	66,261	95	-2,444	-3	-1,942	-3
Greenbelt Lake	59,968	15,486	26	134	0	-730	-1
Hords Creek Lake	8,443	5,641	67	-281	-3	-1,308	-15
J. B. Thomas, Lake	199,931	101,905	51	-4,030	-2	-21,394	-11
Kemp, Lake	245,307	229,213	93	-1,778	-1	-9,710	-4
Millers Creek Reservoir	26,768	25,592	96	-956	-4	-1,176	-4
North Fork Buffalo Creek Reservoir	15,400	11,982	78	-130	-1	-665	-4
Stamford, Lake	51,570	51,061	99	-509	-1	1,697	3
Sweetwater, Lake	12,267	2,478	20	-98	-1	-54	-0
TOTAL	902,805	666,085	74	-14,384	-2	-27,859	-3
NORTH CENTRAL							
Amon G Carter, Lake	19,266	19,266	100	0	0	0	0
Aquilla Lake	43,243	37,864	88	-2,530	-6	-3,579	-8
Arlington, Lake	40,188	29,831	74	-2,737	-7	3,770	9
Arrowhead, Lake	230,359	205,220	89	-4,236	-2	-13,982	-6
Bardwell Lake	46,122	40,762	88	-1,445	-3	-3,247	-7
Belton Lake	435,225	410,617	94	-7,679	-2	-24,365	-6
Benbrook Lake	85,648	77,249	90	-5,741	-7	4,620	5
Bonham, Lake	11,027	9,847	89	-332	-3	1,539	14
Bridgeport, Lake	366,236	341,960	93	-16,271	-4	-24,043	-7
*Brownwood, Lake	128,839	112,367	87	-3,956	-3	-6,547	-5
*Cisco, Lake	29,003	24,596	85	-571	-2	-1,691	-6
Crook, Lake	9,195	8,613	94	-134	-1	855	9
Eagle Mountain Lake	179,880	165,463	92	828	0	-13,900	-8
Georgetown, Lake	36,823	22,431	61	-1,614	-4	-10,581	-29
Graham, Lake	45,288	44,304	98	-984	-2	-861	-2
Granbury, Lake	132,949	129,709	98	-242	-0	-3,158	-2
Granger Lake	51,822	51,822	100	0	0	0	0
Grapevine Lake	164,703	160,004	97	-2,919	-2	-4,699	-3
*Halbert, Lake	6,033	5,285	88	114	2	562	9
Hubbard Creek Reservoir	318,067	280,613	88	-8,006	-3	-15,249	-5
Hubert H Moss Lake	24,058	22,434	93	-577	-2	467	2
Jim Chapman Lake (Cooper)	260,332	237,734	91	-10,700	-4	27,233	10
Joe Pool Lake	175,358	167,546	96	-3,089	-2	1,944	1
Kickapoo, Lake	86,345	75,886	88	-1,313	-2	-4,090	-5
Lavon Lake	406,388	360,302	89	-24,865	-6	26,129	6
Leon, Lake	27,762	24,137	87	-933	-3	550	2
Lewisville Lake	563,228	527,902	94	-20,044	-4	-18,449	-3
Limestone, Lake	203,780	163,496	80	-9,393	-5	-19,800	-10
*Lost Creek Reservoir	11,950	11,774	99	-171	-1	-96	-1
*Mineral Wells, Lake	5,273	4,663	88	-213	-4	-610	-12
Mountain Creek, Lake	22,850	22,850	100	0	0	0	0

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of lake or reservoir	Conservation storage capacity		Conservation storage end of October 2017		Change since end of September 2017		Change since end of October 2016	
	(acre-feet)	(acre-feet)	(%)	(acre-feet)**	(%)	(acre-feet)**	(%)	
<i>(North Central continued)</i>								
Navarro Mills Lake	49,827	42,939	86	-2,101	-4	-5,438	-11	
New Terrell City Lake	8,583	7,852	91	-285	-3	-210	-2	
Nocona, Lake (Farmers Crk)	21,444	19,810	92	-718	-3	156	1	
Palo Pinto, Lake	26,766	23,043	86	-1,355	-5	-1,846	-7	
Pat Cleburne, Lake	26,008	22,367	86	-752	-3	134	1	
*Pat Mayse Lake	113,683	111,717	98	-1,966	-2	9,062	8	
Possum Kingdom Lake	523,873	514,441	98	-3,567	-1	-8,616	-2	
Proctor Lake	54,762	43,484	79	-2,282	-4	-5,598	-10	
Ray Hubbard, Lake	439,559	409,025	93	-14,502	-3	-4,009	-1	
Ray Roberts, Lake	788,167	767,078	97	-14,864	-2	-4,749	-1	
Richland-Chambers Reservoir	1,087,839	994,328	91	-23,971	-2	-49,853	-5	
Squaw Creek, Lake	151,250	151,250	100	0	0	0	0	
Stillhouse Hollow Lake	227,771	215,131	94	-4,178	-2	-12,640	-6	
Tawakoni, Lake	871,685	837,758	96	-18,490	-2	51,682	6	
Texoma, Lake (Texas)	1,258,113	1,258,113	100	1,865	0	0	0	
Texoma, Lake (Texas & Oklahoma)	2,525,281	2,660,845	100	148,342	6	78,276	3	
Waco, Lake	189,418	166,601	88	-6,750	-4	-18,070	-10	
Waxahachie, Lake	10,780	8,617	80	-384	-4	-1,238	-11	
Weatherford, Lake	17,812	16,047	90	-832	-5	-970	-5	
Whitney, Lake	553,344	458,566	83	-16,156	-3	-40,192	-7	
Worth, Lake	33,495	30,028	90	-763	-2	-397	-1	
TOTAL	10,621,419	9,894,742	93	-241,804	-2	-194,070	-2	
EAST								
Athens, Lake	29,503	27,758	94	-369	-1	-211	-1	
B A Steinhagen Lake	66,961	63,828	95	3,561	5	2,858	4	
Bob Sandlin, Lake	190,822	182,454	96	-5,525	-3	6,263	3	
Caddo, Lake	29,898	23,972	80	-3,989	-13	-5,926	-20	
Cedar Creek Reservoir in Trinity	644,686	587,860	91	-16,492	-3	925	0	
Cherokee, Lake	40,094	36,672	91	-1,870	-5	no data		
Conroe, Lake	410,988	399,183	97	-9,123	-2	4,141	1	
Cypress Springs, Lake	66,756	62,113	93	-1,131	-2	250	0	
Fork Reservoir, Lake	605,061	578,821	96	-12,082	-2	35,937	6	
Houston County Lake	17,113	16,830	98	13	0	-115	-1	
Jacksonville, Lake	25,670	24,865	97	-389	-2	-516	-2	
*Livingston, Lake	1,785,348	1,731,277	97	-37,532	-2	-54,071	-3	
Martin, Lake	75,726	62,169	82	-3,921	-5	-3,463	-5	
Monticello, Lake	34,740	34,740	100	0	0	0	0	
Murvaul, Lake	38,285	34,284	90	-1,393	-4	296	1	
Nacogdoches, Lake	39,522	36,350	92	-1,223	-3	-452	-1	
O' the Pines, Lake	241,363	241,363	100	-13,595	-6	9,767	4	
Palestine, Lake	367,303	342,864	93	-11,864	-3	15,499	4	
Sam Rayburn Reservoir	2,857,077	2,719,880	95	-137,197	-5	191,894	7	
Striker, Lake	16,934	15,737	93	-756	-4	no data		
*Sulphur Springs, Lake	17,747	16,580	93	-438	-2	1,519	9	
Toledo Bend Reservoir (Texas)	2,236,450	1,877,094	84	-76,870	-3	11,470	1	
Toledo Bend Reservoir (Texas & Louisiana)	4,472,900	3,758,288	84	-153,740	-3	22,939	1	
Tyler, Lake	72,073	67,560	94	-1,725	-2	2,624	4	
Wright Patman Lake	135,069	135,069	100	-95,556	-71	0	0	
TOTAL	10,045,189	9,319,323	93	-429,466	-4	218,689	2	

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of lake or reservoir	Conservation storage capacity (acre-feet)	Conservation storage end of October 2017		Change since end of September 2017		Change since end of October 2016	
		(acre-feet)	(%)	(acre-feet)**	(%)	(acre-feet)**	(%)
TRANS-PECOS							
Elephant Butte Reservoir (Texas)	852,491	128,556	15	30,307	4	72,986	9
Elephant Butte Reservoir (Texas & New Mexico)	1,973,358	297,584	15	70,156	4	168,949	9
Red Bluff Reservoir	151,110	105,780	70	425	0	-22,213	-15
TOTAL	1,003,601	234,336	23	30,732	3	50,773	5
EDWARDS PLATEAU							
*Amistad Reservoir (Texas)	1,840,849	1,388,164	75	23,776	1	-141,228	-8
*Amistad Reservoir (Texas & Mexico)	3,275,532	1,924,482	59	91,086	3	-356,618	-11
Brady Creek Reservoir	28,808	16,277	57	-597	-2	-835	-3
Buchanan, Lake	816,904	768,534	94	-11,938	-1	-44,900	-5
E. V. Spence Reservoir	517,272	68,586	13	-2,692	-1	16,544	3
Inks, Lake	13,962	13,020	93	105	1	38	0
Lyndon B Johnson, Lake	115,249	110,514	96	-612	-1	183	0
Marble Falls, Lake	6,901	6,820	99	-16	-0	6	0
Nasworthy	9,615	7,841	82	no data		120	1
Oak Creek Reservoir	39,210	19,921	51	-749	-2	357	1
O. C. Fisher Lake	119,445	12,876	11	-601	-1	-4,877	-4
*O. H. Ivie Reservoir	554,340	111,581	20	-4,969	-1	-8,356	-2
Twin Buttes Reservoir	182,454	13,422	7	-1,343	-1	-4,291	-2
TOTAL	4,245,009	2,537,556	60	364	0	-187,239	-4
SOUTH CENTRAL							
*Austin, Lake	23,972	22,757	95	-46	-0	-15	-0
Canyon Lake	378,781	354,432	94	-4,833	-1	-23,444	-6
*Coletto Creek Reservoir	31,040	29,844	96	-1,196	-4	4,349	14
Medina Lake	254,823	182,151	71	-7,987	-3	-56,330	-22
Somerville Lake	147,104	147,104	100	0	0	0	0
Travis, Lake	1,113,348	925,082	83	-18,306	-2	-169,181	-15
TOTAL	1,949,068	1,661,370	85	-32,368	-2	-244,621	-13
UPPER COAST							
Houston, Lake	120,686	120,686	100	0	0	0	0
Texana, Lake	159,566	151,398	95	-7,525	-5	4,449	3
TOTAL	280,252	272,084	97	-7,525	-3	4,449	2
SOUTHERN							
Choke Canyon Reservoir	662,820	211,387	32	-2,851	-0	-64,274	-10
Corpus Christi, Lake	256,062	256,062	100	82,672	32	18,494	7
*Falcon Reservoir (Texas)	1,551,007	815,575	53	46,775	3	274,489	18
*Falcon Reservoir (Texas & Mexico)	2,646,817	1,378,234	52	422,758	16	565,748	21
TOTAL	2,469,889	1,283,024	52	126,596	5	228,709	9
STATEWIDE TOTAL							
STATEWIDE TOTAL	32,154,628	26,078,155	81	-526,342	-2	-75,468	-0

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

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

Note:

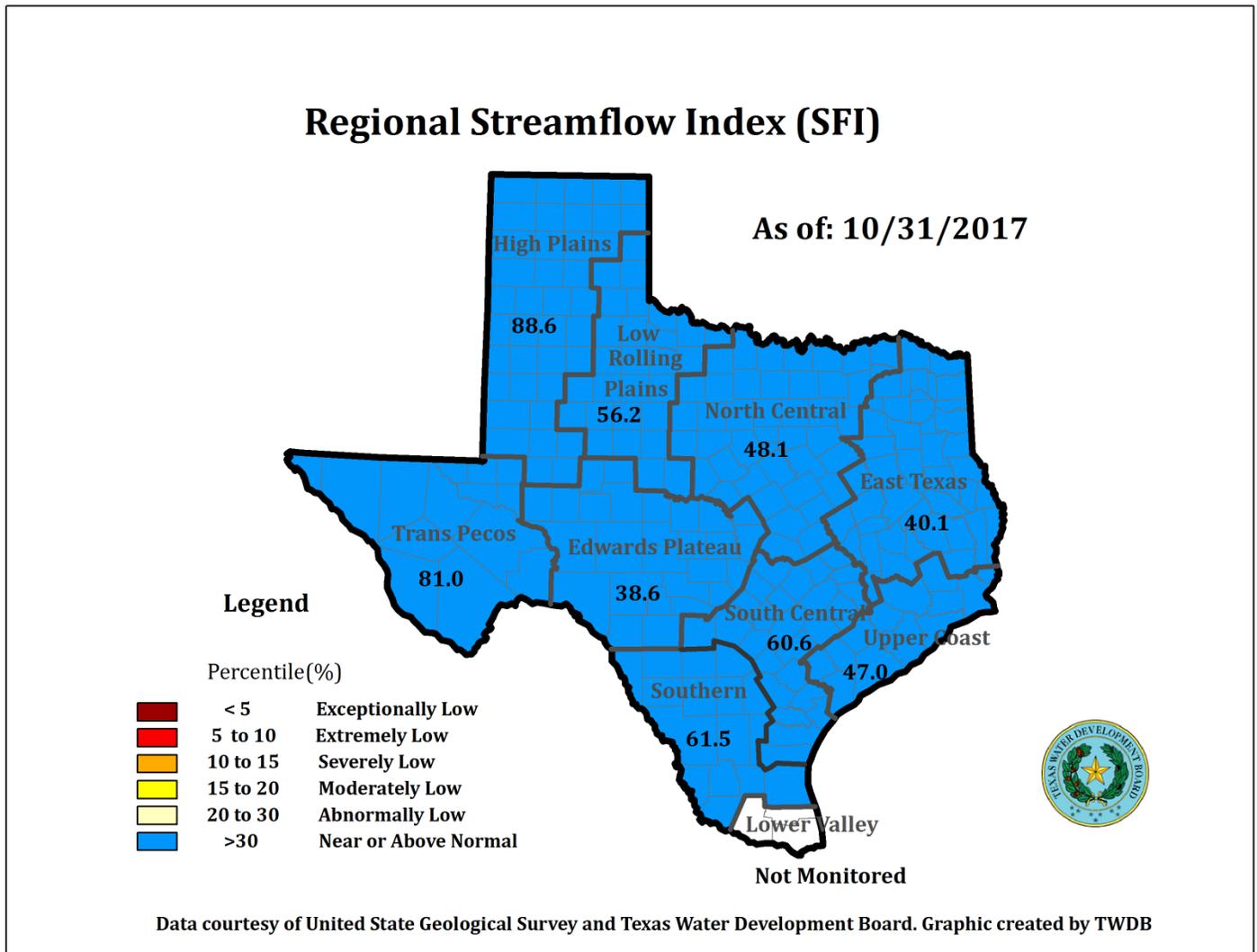
Conservation storage capacity is the space available to store water above the lowest outlet and below the top of conservation pool (some may have seasonal variations), or normal maximum operating level. Conservation storage refers to the volume of water held within the conservation storage space. Not 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 $100 * (\text{current conservation storage} - \text{past conservation storage}) / \text{conservation storage capacity}$.

OCTOBER 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 9 index stations, decreased at 20 stations.

Streamflow Status	Number of Stations
Near or Above Normal (>30%)	23
Abnormally Low (20-30%)	3
Moderately Low (15-20%)	3
Severely Low (10-15%)	0
Extremely Low (5-10%)	0
Exceptionally Low (<5%)	0

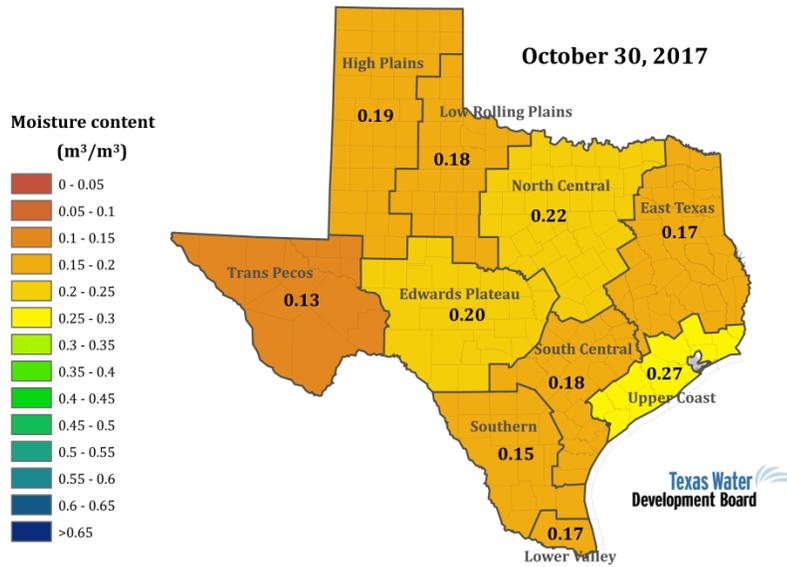
On a regional basis, as shown below, streamflows were near or above normal in all regions. Streamflow in the Lower Valley region is not monitored.



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

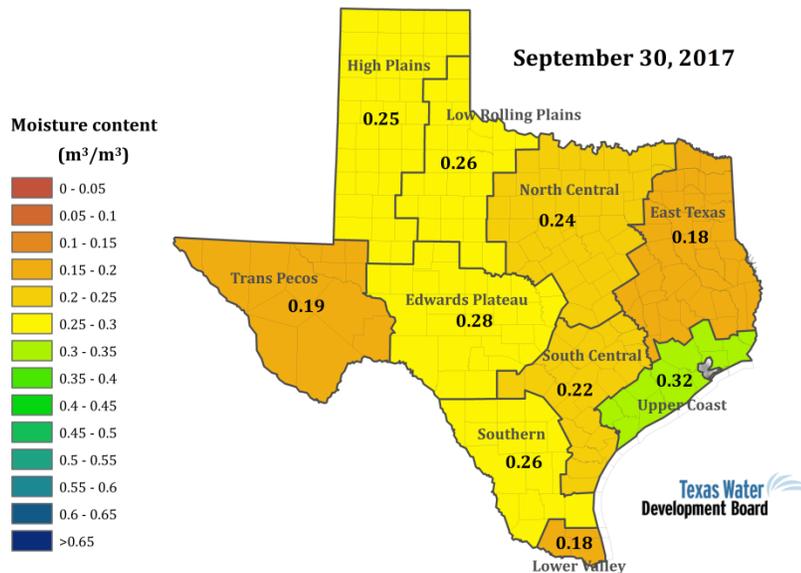
OCTOBER 2017 SOIL MOISTURE CONDITIONS

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.

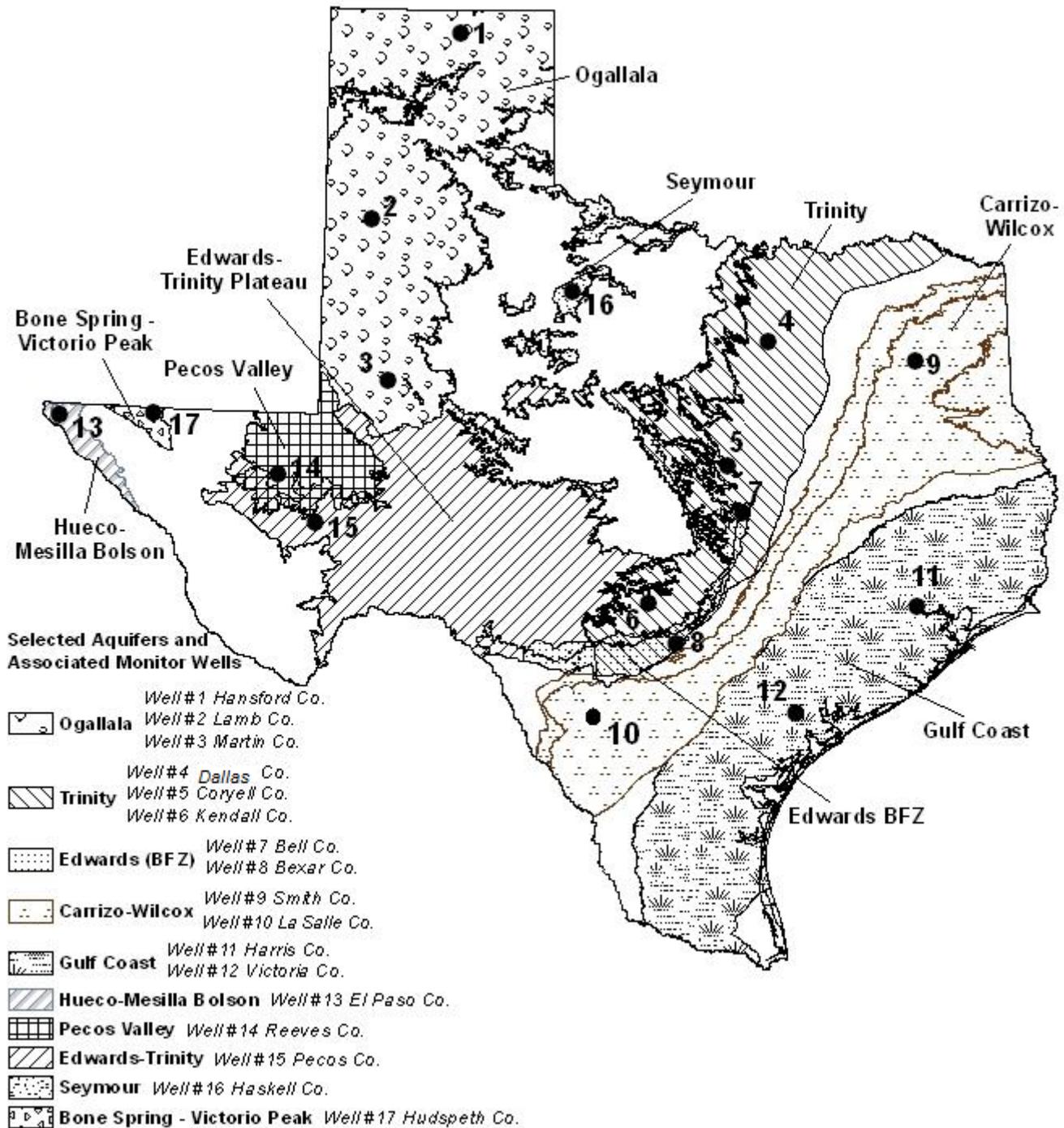
Soil Moisture Condition



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 30 days (*top image*, end of October 2017), as compared to soil moisture at the end of September 2017 (*bottom image*), decreased in all climate regions, with the most significant decreases in the High Plains, Low Rolling Plains, Trans-Pecos, Edwards Plateau, Southern, South Central and Upper Coast regions, ranging from -24% to -42%. Soil moisture content declined -6% to -8% in the North Central, East, and Lower Valley regions.

OCTOBER 2017 GROUNDWATER LEVELS IN OBSERVATION WELLS



Water-level measurements were available for all 17 key monitoring wells in the state. Water levels rose in seven monitoring wells since the beginning of October, ranging from an increase of 0.14 feet in the Haskell County Seymour Aquifer well (#16 on map) to 10.28 feet in the Pecos County Edwards-Trinity (Plateau) Aquifer well (#15 on map). Water levels declined in 10 monitoring wells, ranging from a decline of 0.01 feet in the Hansford County Ogallala Aquifer well (#1 on map) to 2.30 feet in the Bexar County Edwards (Balcones Fault Zone) Aquifer well (#8 on map). The J-17 well (#8 on map) in San Antonio recorded a water level of 68.21 feet below land surface or 662.49 feet above mean sea level. There are no restrictions currently in place for the San Antonio portion of the Edwards (Balcones Fault Zone) Aquifer, with water levels at 2 feet above the Stage I critical management level.

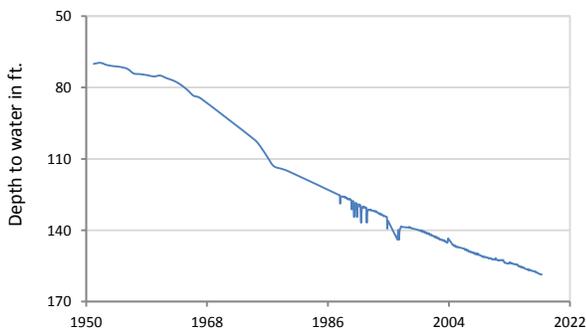
*IDs used in this publication on the aquifer map to indicate the monitoring well location (IDs 1 - 17) are different than the TWDB's six- or seven-digit state well identification number.

Monitoring Well	October	September	Month Change	Year Change	Historical Change	First Measured
(1) Hansford 0354301	158.57	158.56	-0.01	-1.22	-88.45	1951
(2) Lamb 1053602	147.94	147.84	-0.10	-0.93	-119.77	1951
(3) Martin 2739903	144.22	142.51	-1.71	0.60	-39.33	1964
(4) Dallas 3319101	493.07	492.41	-0.66	1.48	-271.07	1954
(5) Coryell 4035404	524.02	527.01	2.99	-9.16	-232.02	1955
(6) Kendall 6802609	132.74	134.38	1.64	-6.14	-72.74	1975
(7) Bell 5804816	123.55	123.08	-0.47	-2.17	-0.04	2008
(8) Bexar 6837203	68.51	66.21	-2.30	-12.20	-21.87	1932
(9) Smith 3430907	433.74	433.45	-0.29	1.54	-133.74	1987
(10) La Salle 7738103	496.12	495.38	-0.74	-38.39	-243.05	2003
(11) Harris 6514409	193.28	191.53	-1.75	-1.05	-57.78*	1947**
(12) Victoria 8017502	31.66	32.31	0.65	2.79	2.34	1958
(13) El Paso 4913301	294.19	293.79	-0.40	1.35	-62.29	1964
(14) Reeves 4644501	165.98	166.20	0.22	-2.84	-73.89	1952
(15) Pecos 5216802	203.33	213.61	10.28	5.12	43.55	1976
(16) Haskell 2135748	46.96	47.10	0.14	-0.36	-3.96	2002
(17) Hudspeth 4807516	151.65	155.45	3.80	-2.08	-47.73	1966

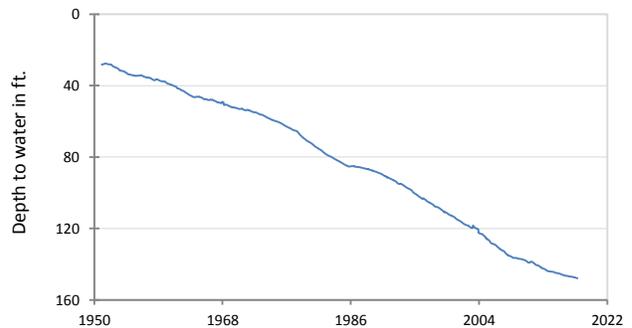
*Change since the original measurement of 135.5 feet below land surface in 1947 (**measurement not shown on the hydrograph)

OCTOBER 2017 GROUNDWATER LEVELS IN OBSERVATION WELLS

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



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



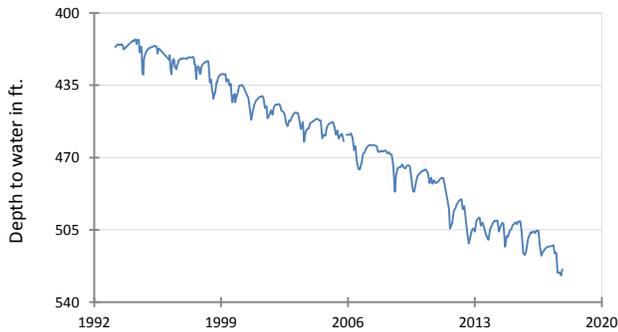
(3) State Well ID 27-39-903
Northwest Martin County
Ogallala Aquifer



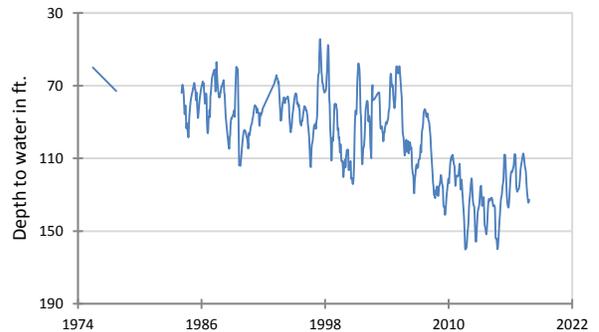
(4) State Well ID 33-19-101
Southeast Dallas, Dallas County
Twin Mountains Formation-Trinity Aquifer



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



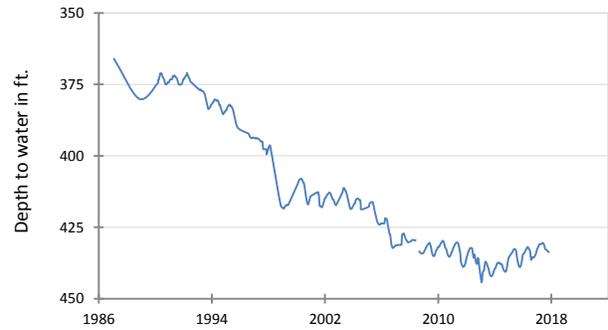
**(6) State Well ID 68-02-609
Waring, Kendall County
Cow Creek Formation-Trinity Aquifer**



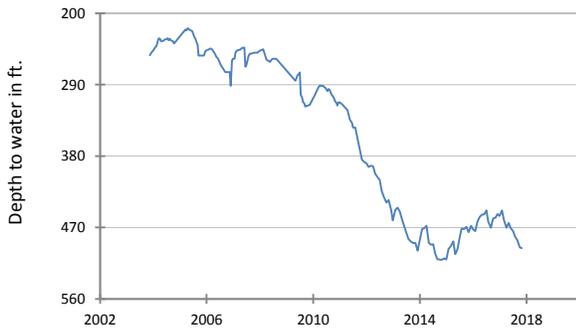
**(7) State Well ID 58-04-816
Near Salado, Bell County
Edwards (Balcones Fault Zone) Aquifer**



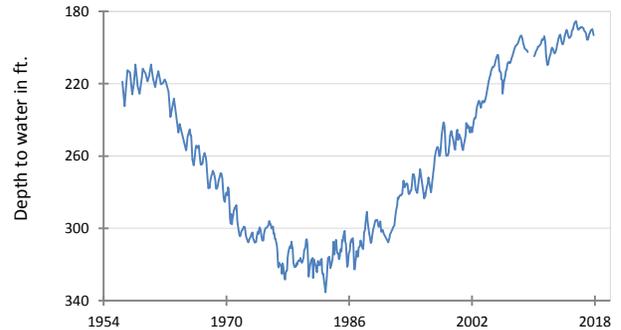
**(9) State Well ID 34-30-907
Red Springs, Smith County
Carrizo-Wilcox Aquifer**



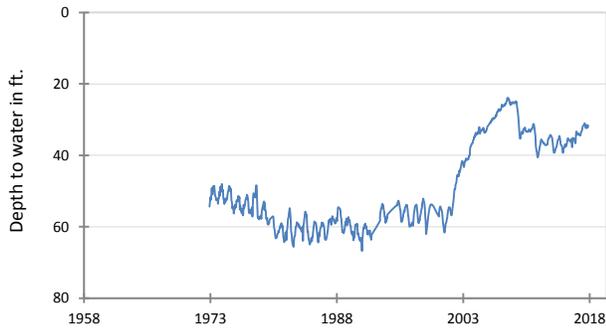
**(10) State Well ID 77-38-103
Near Cotulla, La Salle County
Carrizo-Wilcox Aquifer**



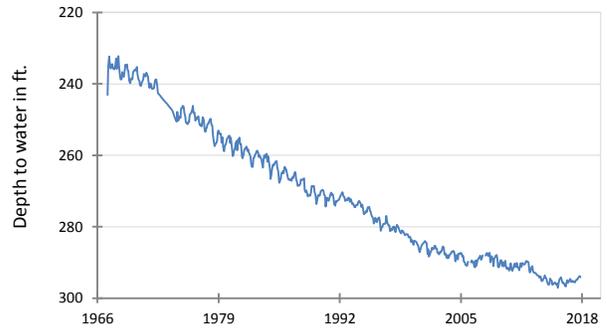
**(11) State Well ID 65-14-409
Alief, Harris County
Evangeline Formation-Gulf Coast Aquifer**



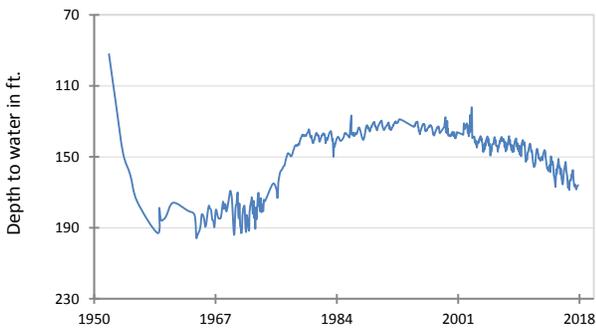
(12) State Well ID 80-17-502
Near Bloomington, Victoria County
Lissie Formation-Gulf Coast Aquifer



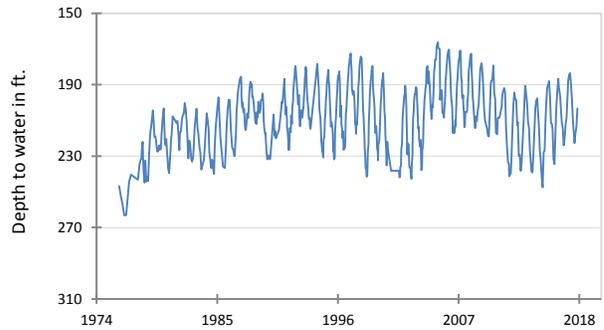
(13) State Well ID 49-13-301
El Paso, El Paso County
Hueco-Mesilla Bolson Aquifer



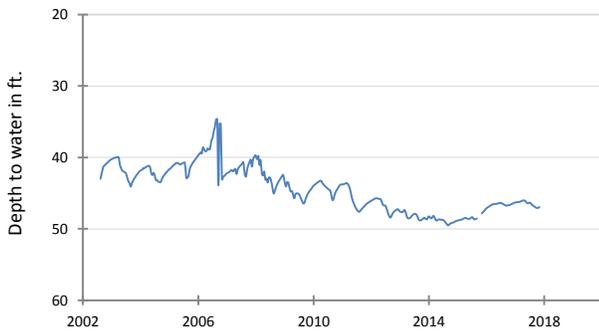
(14) State Well ID 46-44-501
Near Pecos, Reeves County
Pecos Valley Aquifer



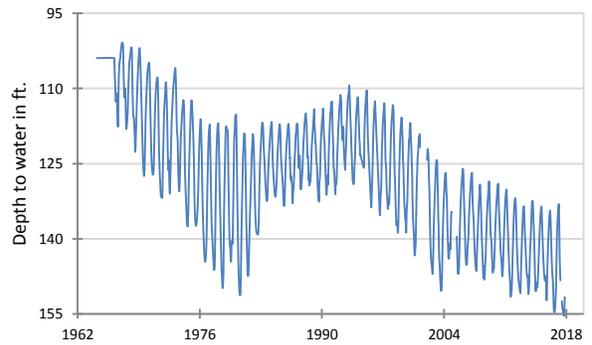
(15) State Well ID 52-16-802
Fort Stockton, Pecos County
Edwards-Trinity (Plateau) Aquifer



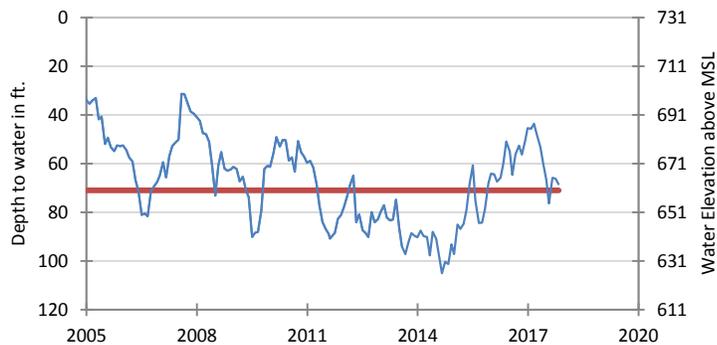
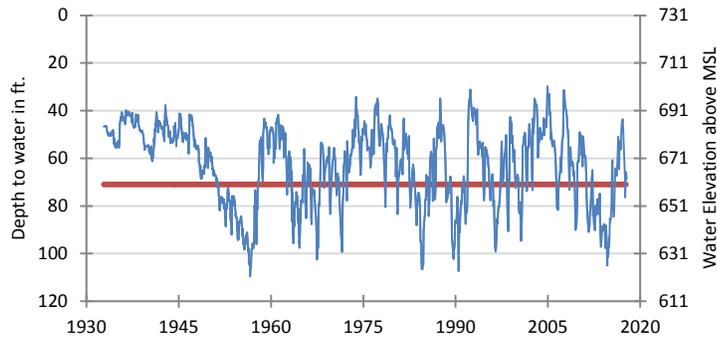
(16) State Well ID 21-35-748
Near O'Brien, Haskell County
Seymour Aquifer



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

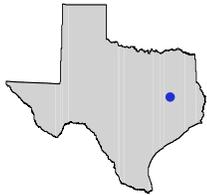


**(8) State Well ID 68-37-203 (J-17)
In San Antonio, Bexar County
Edwards (Balcones Fault Zone) Aquifer**



The late October water-level measurement in this Edwards (Balcones Fault Zone) Aquifer well, elevation 731 feet above mean sea level, was 68.51 feet below land surface, or 662.49 feet above mean sea level. This was 2.30 feet below last month's measurement, 12.20 feet below last year's measurement, and 21.87 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. *****



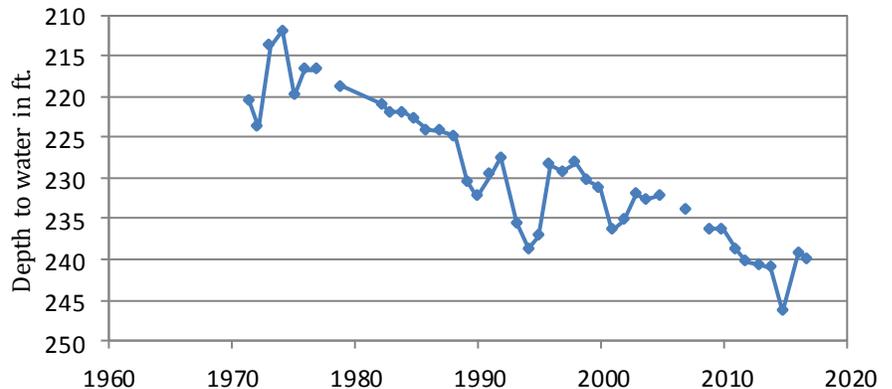
HYDROGRAPH OF THE MONTH

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

Queen City Aquifer

Well # 3955902, 731 feet deep
Domestic, Western Leon County

The Queen City Aquifer is a minor but widespread aquifer that stretches across the Texas upper coastal plain. Water is stored in the sand, loosely cemented sandstone, and interbedded clay layers of the Queen City Formation that reaches 2,000 feet in thickness in South Texas. Average freshwater saturation in the Queen City Aquifer is about 140 feet. Water is generally fresh, with an average concentration of total dissolved solids of about 300 milligrams per liter in the recharge zone and about 750 milligrams per liter deeper in the aquifer. The aquifer is used primarily for livestock and domestic purposes, with significant municipal and industrial use in northeast Texas. Water levels have remained fairly stable over time in the northern part of the aquifer. Water level declines are more common in the central (10 to 70 feet) and southern (5 to 130 feet) parts of the aquifer.



The first recorded water-level measurement for this domestic well was 62.43 feet below land surface in 1971, measured by the TWDB. The TWDB has consistently measured every year since, except a few years of missed measurements. The water-level has been on a steady decline due to increased agriculture practices in the region. The highest recorded water-level was 211.93 feet below land surface in 1974, and the lowest recorded water-level was 246.40 feet below land surface in 2014.