

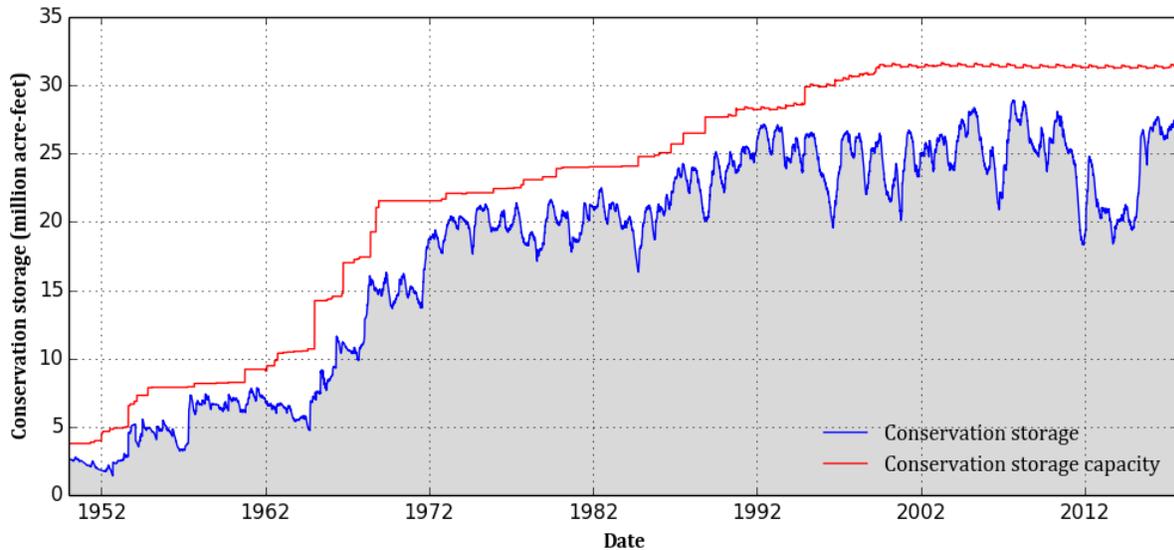
September 2017 RESERVOIR STORAGE*

At the end of September 2017, total conservation storage* in 117 of the state’s major water supply reservoirs was 26.6 million acre-feet or 82 percent of total conservation storage capacity. This is approximately 0.34 million acre-feet less than a month ago and 0.09 million acre-feet less than storage at this time last year. Note: No data was reported for Lake Nasworthy in September.

Sixteen (16) reservoirs held 100 percent of conservation storage capacity, primarily in the North Central (7 reservoirs) and East (3 reservoirs) regions. Two reservoirs, Palo Duro (1 percent) and Twine Butte (8 percent) remained below 10 percent full.

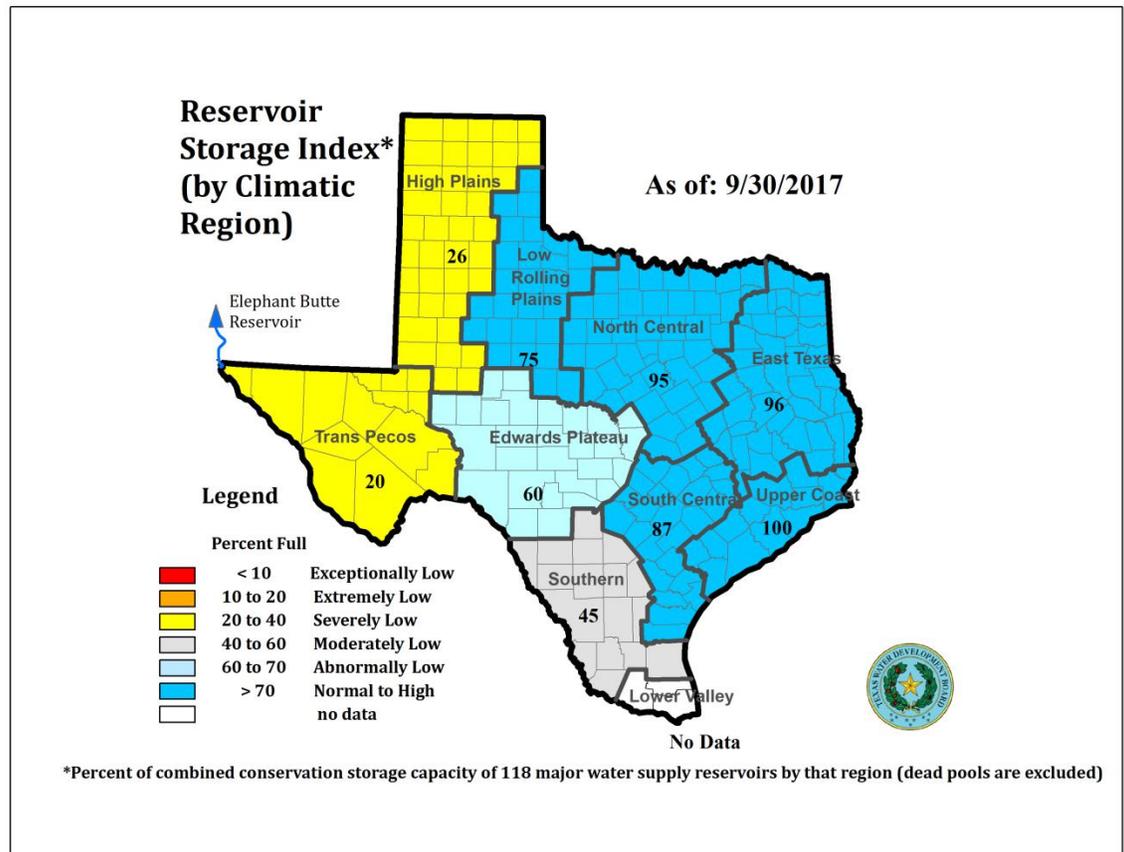
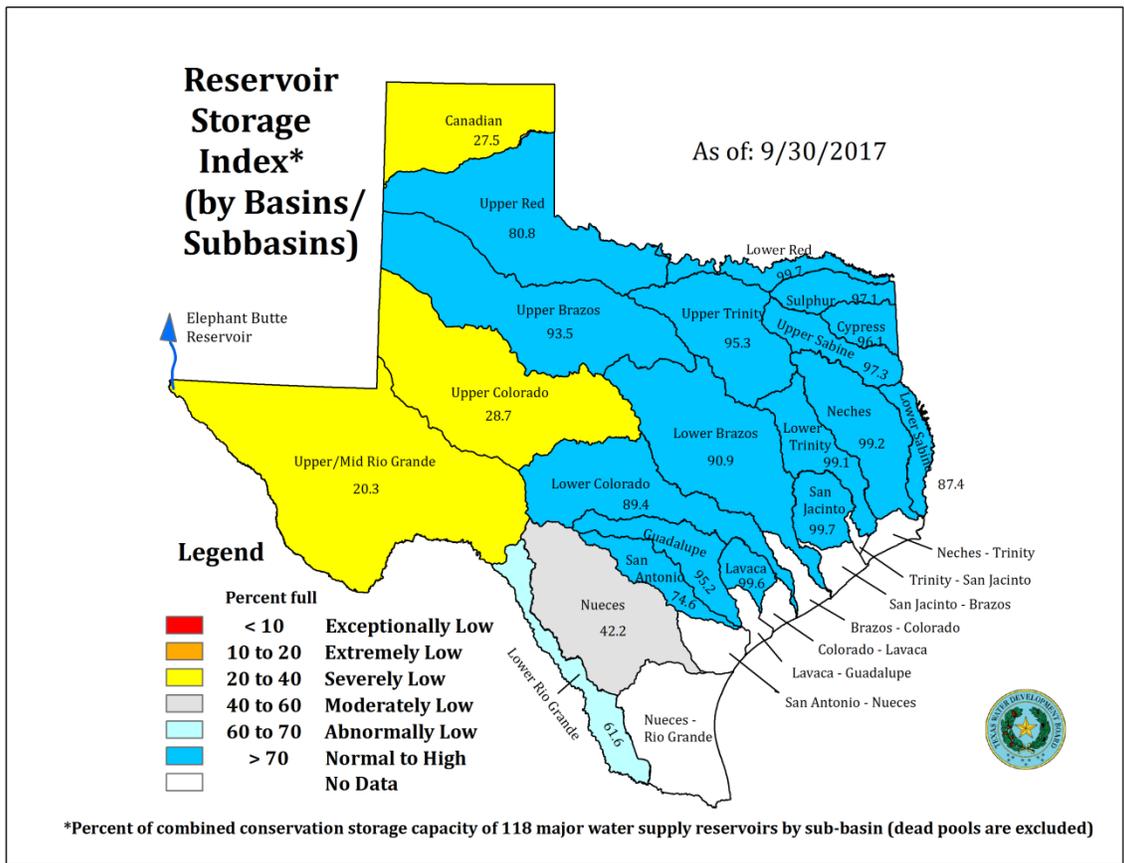
Total combined storage was at or above normal (storage ≥70 percent) in the Upper Coast (100 percent), East (96 percent), North Central (95 percent), South Central (87 percent), and Low Rolling Plains (75 percent) regions. The High Plains (26 percent), Trans-Pecos (20 percent), and Southern (45 percent) regions had the lowest percentage of storage. Overall, storage increased in three but decreased in six regions over the past month.

Statewide monitored major water supply reservoir conservation storage



*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.

SEPTEMBER 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 September 2017		Change since end of August 2017		Change since end of September 2016	
	(acre-feet)	(acre-feet)	(%)	(acre-feet)**	(%)	(acre-feet)**	(%)
HIGH PLAINS							
MacKenzie Reservoir	46,450	7,072	15	-55	-0	-91	-0
Meredith, Lake	500,000	153,798	31	6,423	1	32,685	7
Palo Duro Reservoir	61,066	469	1	no data		-972	-2
White River Lake	29,880	6,783	23	416	1	-972	-3
TOTAL	637,396	168,122	26	6,784	1	30,650	5
LOW ROLLING PLAINS							
Abilene, Lake	7,900	5,969	76	-284	-4	-1,931	-24
Alan Henry Reservoir	94,808	85,810	91	1,856	2	-2,472	-3
Champion Creek Reservoir	41,580	20,330	49	-392	-1	8,606	21
Coleman, Lake	38,075	35,483	93	-496	-1	-833	-2
Colorado City, Lake	30,758	13,183	43	-388	-1	5,242	17
Fort Phantom Hill, Lake	70,030	68,820	98	2,030	3	-1,171	-2
Greenbelt Lake	59,968	15,352	26	-324	-1	-1,231	-2
Hords Creek Lake	8,443	5,922	70	-210	-2	-1,296	-15
J. B. Thomas, Lake	199,931	105,935	53	-2,360	-1	-20,885	-10
Kemp, Lake	245,307	230,991	94	-7,028	-3	-3,576	-1
Millers Creek Reservoir	26,768	26,768	100	88	0	0	0
North Fork Buffalo Creek Reservoir	15,400	12,258	80	1,011	7	446	3
Stamford, Lake	51,570	51,570	100	0	0	102	0
Sweetwater, Lake	12,267	2,576	21	-45	-0	-45	-0
TOTAL	902,805	680,967	75	-6,542	-1	-19,044	-2
NORTH CENTRAL							
Amon G Carter, Lake	19,266	19,266	100	872	5	0	0
Aquilla Lake	43,243	40,394	93	-1,715	-4	no data	
Arlington, Lake	40,188	32,623	81	-5,295	-13	4,430	11
Arrowhead, Lake	230,359	209,456	91	7,212	3	-6,655	-3
Bardwell Lake	46,122	42,207	92	-2,048	-4	-3,165	-7
Belton Lake	435,225	418,296	96	-9,080	-2	-16,929	-4
Benbrook Lake	85,648	82,563	96	-2,315	-3	5,314	6
Bonham, Lake	11,027	10,179	92	-763	-7	1,328	12
Bridgeport, Lake	366,236	358,231	98	1,270	0	-8,005	-2
*Brownwood, Lake	128,839	116,323	90	-3,460	-3	-5,147	-4
*Cisco, Lake	29,003	25,167	87	-382	-1	-1,142	-4
Crook, Lake	9,195	8,747	95	-448	-5	717	8
Eagle Mountain Lake	179,880	164,884	92	-8,348	-5	-13,791	-8
Georgetown, Lake	36,823	24,045	65	-1,534	-4	-11,987	-33
Graham, Lake	45,288	45,288	100	1,788	4	0	0
Granbury, Lake	132,949	130,192	98	-2,675	-2	-1,698	-1
Granger Lake	51,822	51,822	100	0	0	0	0
Grapevine Lake	164,703	162,923	99	-1,780	-1	-1,780	-1
*Halbert, Lake	6,033	5,171	86	6	0	221	4
Hubbard Creek Reservoir	318,067	288,619	91	-5,960	-2	-7,243	-2
Hubert H Moss Lake	24,058	23,011	96	-531	-2	972	4
Jim Chapman Lake (Cooper)	260,332	248,434	95	-11,898	-5	27,247	10
Joe Pool Lake	175,358	170,635	97	-3,911	-2	2,288	1
Kickapoo, Lake	86,345	77,089	89	4,905	6	-5,036	-6
Lavon Lake	406,388	385,167	95	-21,221	-5	32,744	8
Leon, Lake	27,762	25,070	90	-842	-3	1,059	4
Lewisville Lake	563,228	547,680	97	-15,548	-3	-2,663	-0
Limestone, Lake	203,780	172,776	85	-10,402	-5	-17,926	-9
*Lost Creek Reservoir	11,950	11,945	100	671	6	134	1
*Mineral Wells, Lake	5,273	4,876	92	-226	-4	-397	-8
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 September 2017		Change since end of August 2017		Change since end of September 2016	
	(acre-feet)	(acre-feet)	(%)	(acre-feet)**	(%)	(acre-feet)**	(%)
<i>(North Central continued)</i>							
Navarro Mills Lake	49,827	45,040	90	-2,690	-5	-4,787	-10
New Terrell City Lake	8,583	8,137	95	-412	-5	0	0
Nocona, Lake (Farmers Crk)	21,444	21,164	99	266	1	1,276	6
Palo Pinto, Lake	26,766	24,398	91	-1,350	-5	-705	-3
Pat Cleburne, Lake	26,008	23,119	89	-1,477	-6	257	1
*Pat Mayse Lake	113,683	113,683	100	0	0	7,897	7
Possum Kingdom Lake	523,873	518,008	99	1,137	0	2,272	0
Proctor Lake	54,762	45,766	84	-3,448	-6	-4,780	-9
Ray Hubbard, Lake	439,559	423,527	96	-15,197	-3	1,824	0
Ray Roberts, Lake	788,167	781,942	99	-6,225	-1	5,070	1
Richland-Chambers Reservoir	1,087,839	1,018,299	94	-31,764	-3	-52,052	-5
Squaw Creek, Lake	151,250	151,250	100	0	0	0	0
Stillhouse Hollow Lake	227,771	219,371	96	-5,129	-2	-8,400	-4
Tawakoni, Lake	871,685	856,248	98	-15,437	-2	51,605	6
Texoma, Lake (Texas)	1,258,113	1,256,248	100	-1,865	-0	16,692	1
Texoma, Lake (Texas & Oklahoma)	2,525,281	2,512,503	99	-14,952	-1	33,385	1
Waco, Lake	189,418	173,119	91	-7,502	-4	-15,005	-8
Waxahachie, Lake	10,780	9,001	83	-537	-5	-1,139	-11
Weatherford, Lake	17,812	16,890	95	-835	-5	-532	-3
Whitney, Lake	553,344	474,722	86	-10,119	-2	-14,567	-3
Worth, Lake	33,495	30,791	92	333	1	33	0
TOTAL	10,621,419	10,136,652	95	-195,909	-2	-42,151	-0
EAST							
Athens, Lake	29,503	28,127	95	-990	-3	194	1
B A Steinhagen Lake	66,961	60,267	90	-6,694	-10	-1,007	-2
Bob Sandlin, Lake	190,822	187,979	99	-2,843	-1	4,850	3
Caddo, Lake	29,898	27,961	94	-1,937	-6	-1,937	-6
Cedar Creek Reservoir in Trinity	644,686	604,352	94	-21,872	-3	2,819	0
Cherokee, Lake	40,094	38,542	96	-1,552	-4	no data	
Conroe, Lake	410,988	409,454	100	-1,534	-0	1,913	0
Cypress Springs, Lake	66,756	63,244	95	-3,512	-5	441	1
Fork Reservoir, Lake	605,061	590,903	98	-14,158	-2	31,976	5
Houston County Lake	17,113	16,817	98	-296	-2	-296	-2
Jacksonville, Lake	25,670	25,254	98	-416	-2	-346	-1
*Livingston, Lake	1,785,348	1,768,809	99	-16,539	-1	-16,539	-1
Martin, Lake	75,726	66,090	87	-4,154	-5	-2,926	-4
Monticello, Lake	34,740	34,740	100	62	0	830	2
Murvaul, Lake	38,285	35,677	93	-1,515	-4	467	1
Nacogdoches, Lake	39,522	37,573	95	-1,427	-4	21	0
O' the Pines, Lake	268,566	255,866	95	-12,700	-5	7,038	3
Palestine, Lake	367,303	354,728	97	-12,575	-3	18,687	5
Sam Rayburn Reservoir	2,857,077	2,857,077	100	0	0	202,918	7
Striker, Lake	16,934	16,493	97	-420	-2	no data	
*Sulphur Springs, Lake	17,747	17,018	96	-729	-4	1,513	9
Toledo Bend Reservoir (Texas)	2,236,450	1,953,964	87	-282,486	-13	33,544	1
Toledo Bend Reservoir (Texas & Louisiana)	4,472,900	3,912,028	87	-887,764	-20	67,089	1
Tyler, Lake	72,073	69,285	96	-2,646	-4	2,890	4
Wright Patman Lake	231,496	229,175	99	-2,321	-1	-2,321	-1
TOTAL	10,168,819	9,749,395	96	-393,254	-4	284,729	3

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of lake or reservoir	Conservation storage capacity (acre-feet)	Conservation storage end of September 2017		Change since end of August 2017		Change since end of September 2016	
		(acre-feet)	(%)	(acre-feet)**	(%)	(acre-feet)**	(%)
TRANS-PECOS							
Elephant Butte Reservoir (Texas)	852,491	98,249	12	-25,512	-3	41,325	5
Elephant Butte Reservoir (Texas & New Mexico)	1,973,358	227,428	12	-59,055	-3	95,660	5
Red Bluff Reservoir	151,110	105,355	70	606	0	-22,499	-15
TOTAL	1,003,601	203,604	20	-24,906	-2	18,826	2
EDWARDS PLATEAU							
*Amistad Reservoir (Texas)	1,840,849	1,362,814	74	-1,276	-0	-160,135	-9
*Amistad Reservoir (Texas & Mexico)	3,275,532	1,831,281	56	130,317	4	-412,805	-13
Brady Creek Reservoir	28,808	16,963	59	-552	-2	26	0
Buchanan, Lake	816,904	780,472	96	-7,712	-1	-34,264	-4
E. V. Spence Reservoir	517,272	71,404	14	-1,318	-0	18,306	4
Inks, Lake	13,962	12,915	93	-120	-1	-22	-0
Lyndon B Johnson, Lake	115,249	111,126	96	734	1	795	1
Marble Falls, Lake	6,901	6,836	99	59	1	-5	-0
Nasworthy	9,615	no data		no data	No data	no data	no data
Oak Creek Reservoir	39,210	20,697	53	-449	-1	1,133	3
O. C. Fisher Lake	119,445	13,477	11	-433	-0	-4,785	-4
*O. H. Ivie Reservoir	554,340	116,669	21	-416	-0	-6,455	-1
Twin Buttes Reservoir	182,454	14,765	8	-2,136	-1	-2,644	-1
TOTAL	4,245,009	2,528,138	60	-14,371	-0	-189,250	-4
SOUTH CENTRAL							
*Austin, Lake	23,972	22,803	95	46	0	77	0
Canyon Lake	378,781	359,265	95	-2,873	-1	-19,516	-5
*Coletto Creek Reservoir	31,040	31,040	100	0	0	3,858	12
Medina Lake	254,823	190,138	75	-7,683	-3	-56,324	-22
Somerville Lake	147,104	147,104	100	0	0	0	0
Travis, Lake	1,113,348	943,388	85	-19,281	-2	-169,960	-15
TOTAL	1,949,068	1,693,738	87	-29,791	-2	-241,865	-12
UPPER COAST							
Houston, Lake	120,686	120,686	100	0	0	0	0
Texana, Lake	159,566	158,923	100	6,358	4	3,014	2
TOTAL	280,252	279,609	100	6,358	2	3,014	1
SOUTHERN							
Choke Canyon Reservoir	662,820	214,238	32	-6,566	-1	-67,462	-10
Corpus Christi, Lake	256,062	173,390	68	-7,745	-3	-41,027	-16
*Falcon Reservoir (Texas)	1,551,007	725,726	47	320,971	21	170,997	11
*Falcon Reservoir (Texas & Mexico)	2,646,817	901,946	34	358,975	14	97,411	4
TOTAL	2,469,889	1,113,354	45	306,660	12	62,508	3
STATEWIDE TOTAL							
STATEWIDE TOTAL	32,278,258	26,553,579	82	-344,971	-1	-92,583	-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:

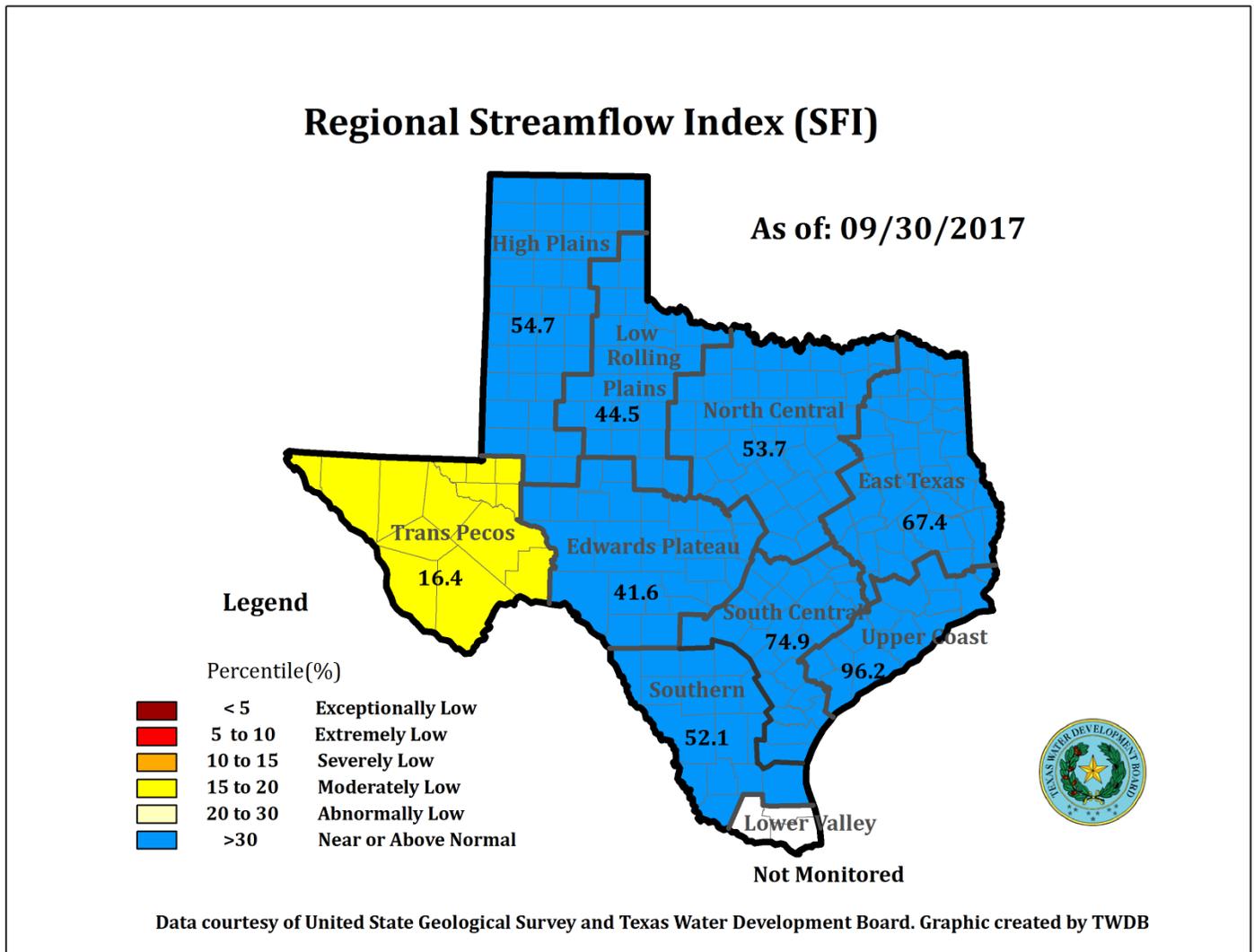
Conservation storage capacity is the space available to store water above the lowest outlet and below the top of conservation pool (some may have seasonal variations), or normal maximum operating level. Conservation storage refers to the volume of water held within the conservation storage space. Not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

SEPTEMBER 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 8 index stations, decreased at 18 stations, and remained unchanged at 3 stations.

Streamflow Status	Number of Stations
Near or Above Normal (>30%)	25
Abnormally Low (20-30%)	1
Moderately Low (15-20%)	3
Severely Low (10-15%)	0
Extremely Low (5-10%)	0
Exceptionally Low (<5%)	0

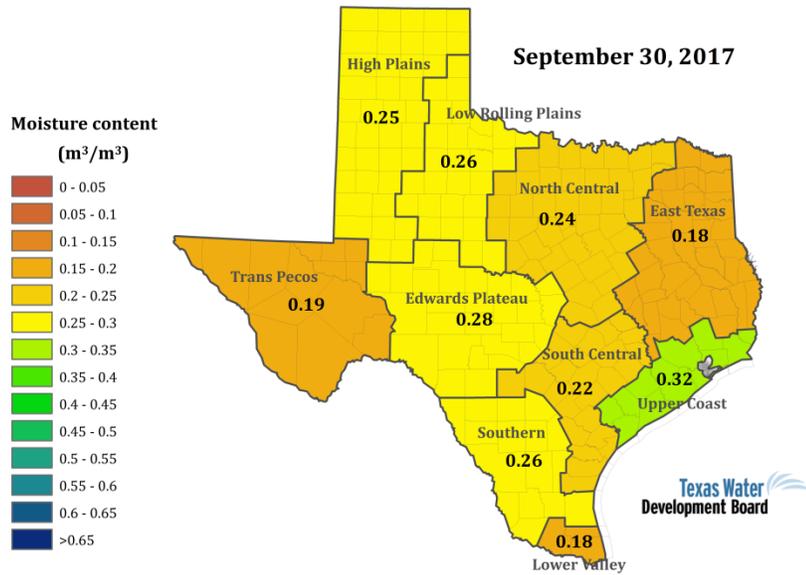
On a regional basis, as shown below, streamflows were near or above normal in all regions except the Trans-Pecos region, in which streamflows were moderately low. Streamflow in the Lower Valley region is not monitored.



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

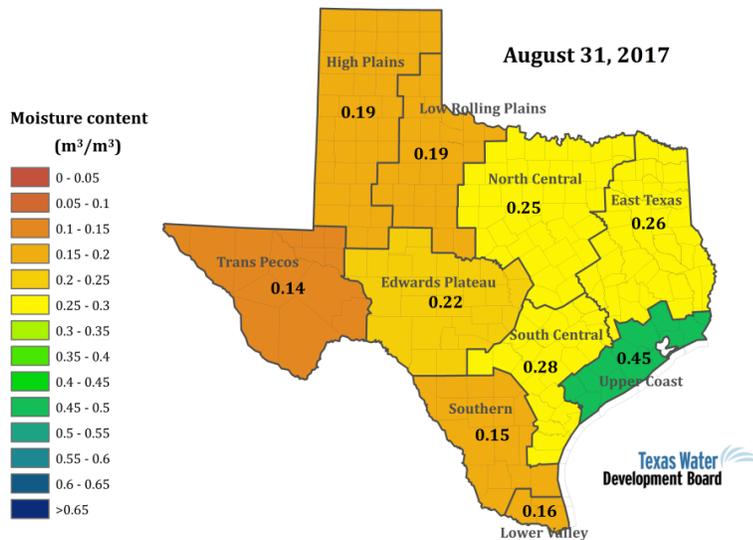
SEPTEMBER 2017 SOIL MOISTURE CONDITIONS

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.

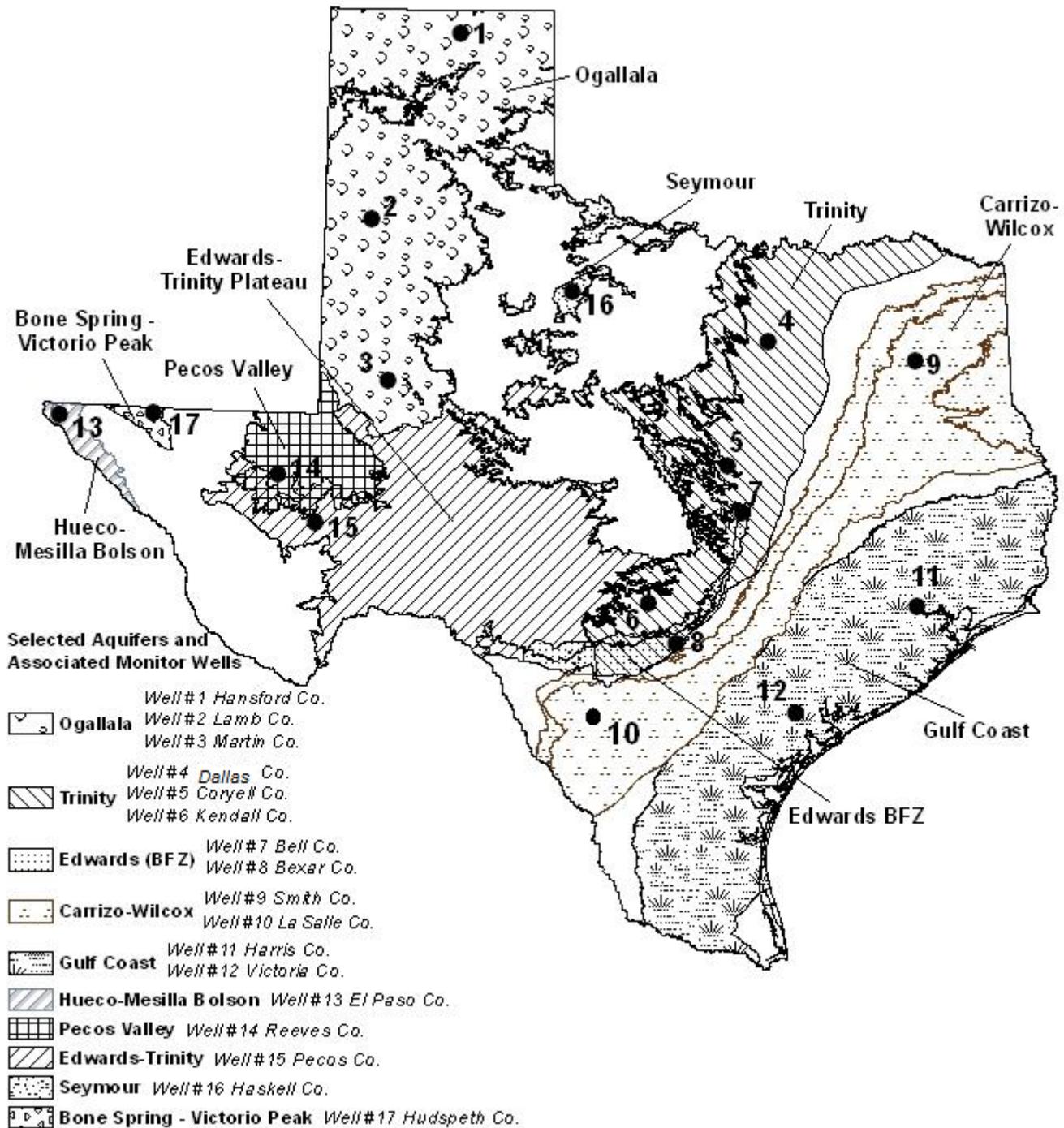
Soil Moisture Condition



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 September 2017), as compared to soil moisture at the end of August 2017 (*bottom image*), increased significantly in south and west Texas, but declined in the eastern half of Texas. Five regions in west Texas, including the High Plains, Low Rolling Plains, Trans-Pecos, Edwards Plateau, Southern, and Lower Valley regions, had the greatest increases, with soil moisture increases from 13% to 73%. Soil moisture content declined 4% to 61% in the North Central, East, South Central, and Upper Coast regions.

September 2017 GROUNDWATER LEVELS IN OBSERVATION WELLS



Water-level measurements were available for all 17 key monitoring wells in the state. Water levels rose in four monitoring wells since the beginning of September, ranging from an increase of 0.25 feet in the El Paso County Hueco-Mesilla Bolson Aquifer well (#13 on map) to 3.37 feet in the Pecos County Edwards-Trinity Aquifer well (#15 on map). Water levels declined in 13 monitoring wells, ranging from a decline of 0.05 feet in the Hansford County Ogallala Aquifer well (#1 on map) to 9.28 feet in the La Salle County Carrizo-Wilcox Aquifer well (#10 on map). The J-17 well (#8 on map) in San Antonio recorded a water level of 66.21 feet below land surface or 664.79 feet above mean sea level. There are currently no restrictions in place for the San Antonio portion of the Edwards (Balcones Fault Zone) Aquifer, with water levels at 4.79 feet above the Stage I critical management level.

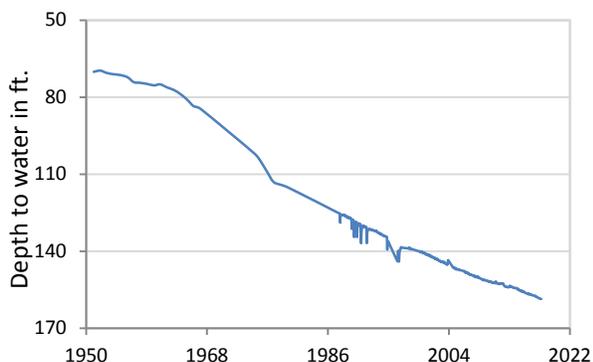
*IDs used in this publication on the aquifer map to indicate the monitoring well location (IDs 1 - 17) are different than the TWDB's six- or seven-digit state well identification number.

Monitoring Well	September	August	Month Change	Year Change	Historical Change	First Measured
(1) Hansford 0354301	158.56	158.51	-0.05	-1.33	-88.44	1951
(2) Lamb 1053602	147.84	147.74	-0.10	-0.86	-119.67	1951
(3) Martin 2739903	142.51	142.82	0.31	2.21	-37.62	1964
(4) Dallas 3319101	492.41	491.64	-0.77	2.42	-270.41	1954
(5) Coryell 4035404	527.01	525.44	-1.57	-11.57	-235.01	1955
(6) Kendall 6802609	134.38	130.68	-6.28	-2.45	-70.68	1975
(7) Bell 5804816	123.08	122.73	-0.35	-2.83	0.43	2008
(8) Bexar 6837203	66.21	65.81	-0.40	-13.50	-19.57	1932
(9) Smith 3430907	433.45	432.93	-0.52	2.20	-133.45	1987
(10) La Salle 7738103	495.38	486.10	-9.28	-36.55	-242.31	2003
(11) Harris 6514409	191.53	189.94	-1.59	-0.02	-56.03*	1947**
(12) Victoria 8017502	32.31	31.47	-0.84	1.87	1.69	1958
(13) El Paso 4913301	293.79	294.04	0.25	.80	-61.89	1964
(14) Reeves 4644501	166.20	167.07	0.87	-3.25	-74.11	1952
(15) Pecos 5216802	213.61	216.98	3.37	-1.34	33.27	1976
(16) Haskell 2135748	47.10	46.90	-0.20	-0.38	-4.10	2002
(17) Hudspeth 4807516	155.45	154.63	-0.82	-2.53	-51.53	1966

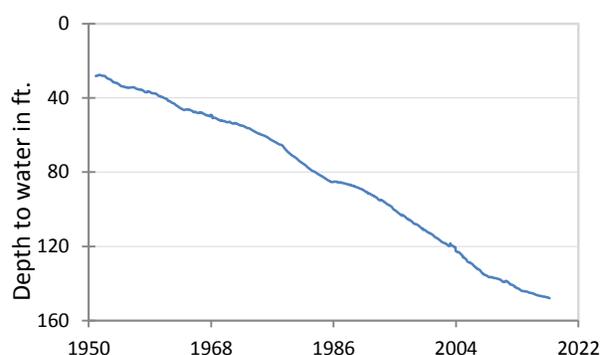
*Change since the original measurement of 135.5 feet below land surface in 1947 (**measurement not shown on the hydrograph)

September 2017 GROUNDWATER LEVELS IN OBSERVATION WELLS

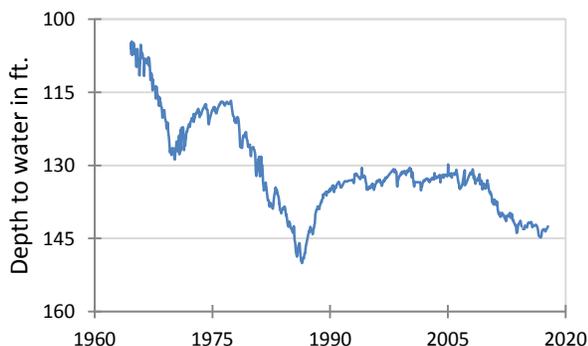
(1) State Well ID 03-54-301
Near Spearman, Hansford County
Ogallala Aquifer



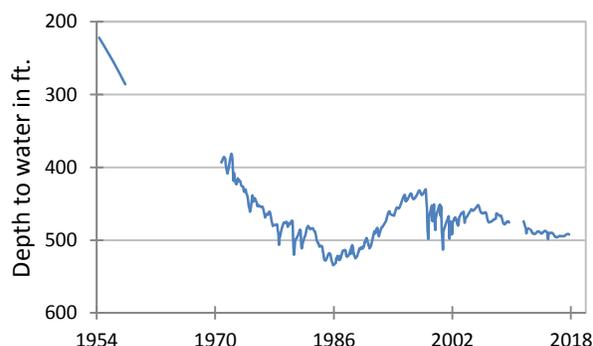
(2) State Well ID 10-53-602
Near Earth, Lamb County
Ogallala Aquifer



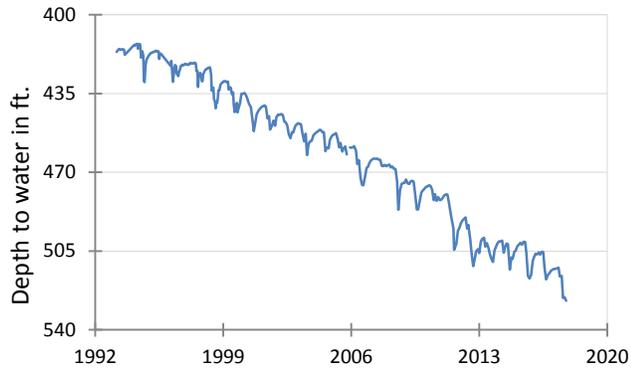
(3) State Well ID 27-39-903
Northwest Martin County
Ogallala Aquifer



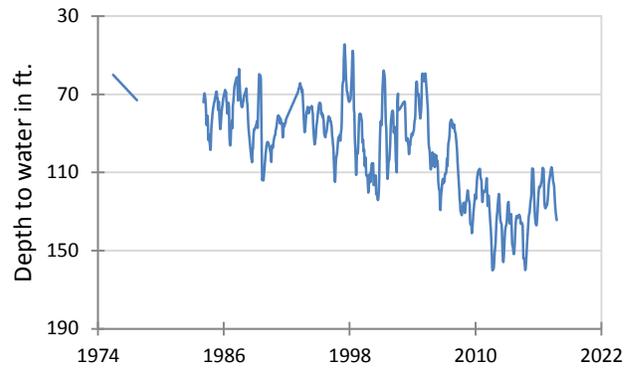
(4) State Well ID 33-19-101
Southeast Dallas, Dallas County
Twin Mountains Formation-Trinity Aquifer



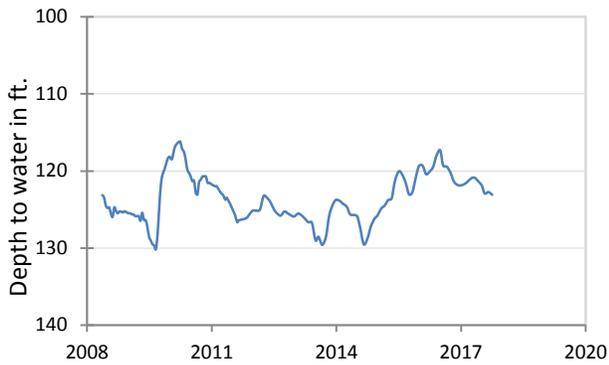
(5) State Well ID 40-35-404
Gatesville, Coryell County
Hosston Formation-Trinity Aquifer



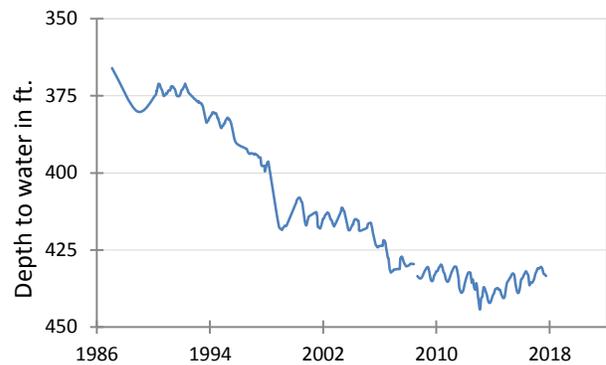
(6) State Well ID 68-02-609
Waring, Kendall County
Cow Creek Formation-Trinity Aquifer



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



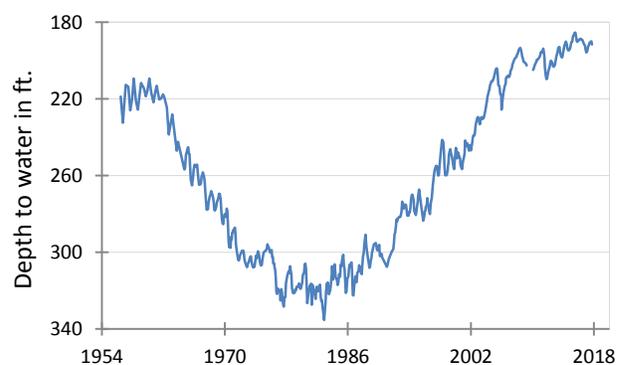
(9) State Well ID 34-30-907
Red Springs, Smith County
Carrizo-Wilcox Aquifer



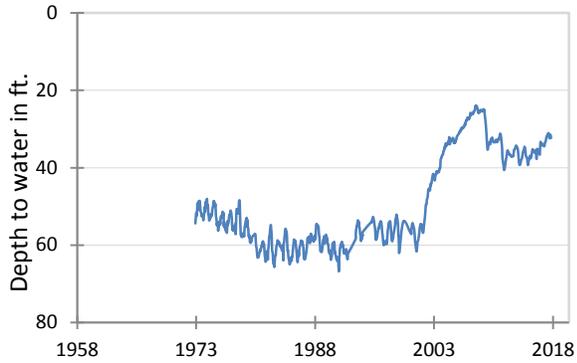
(10) State Well ID 77-38-103
Near Cotulla, La Salle County
Carrizo-Wilcox Aquifer



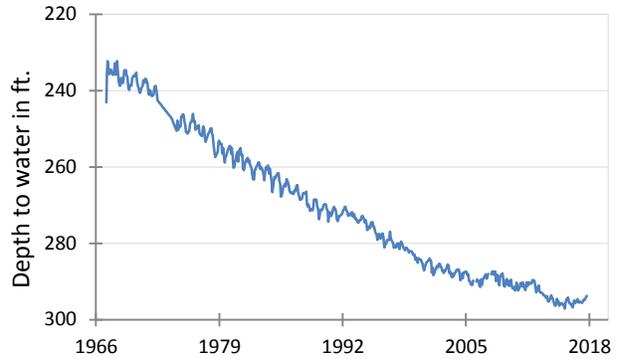
(11) State Well ID 65-14-409
Alief, Harris County
Evangeline Formation-Gulf Coast Aquifer



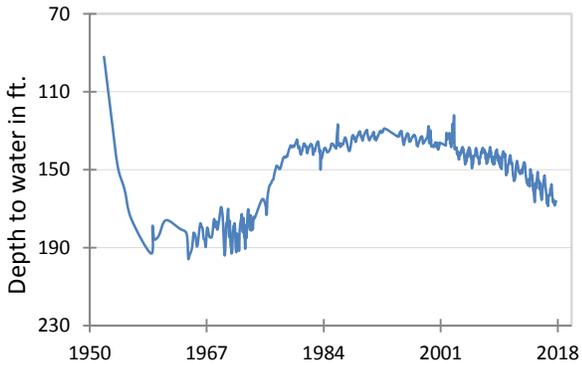
(12) State Well ID 80-17-502
Near Bloomington, Victoria County
Lissie Formation-Gulf Coast Aquifer



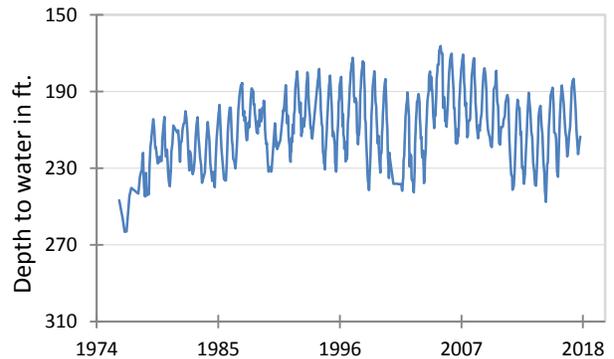
(13) State Well ID 49-13-301
El Paso, El Paso County
Hueco-Mesilla Bolson Aquifer



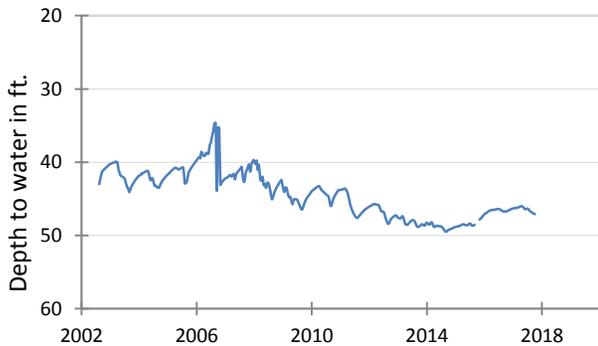
(14) State Well ID 46-44-501
Near Pecos, Reeves County
Pecos Valley Aquifer



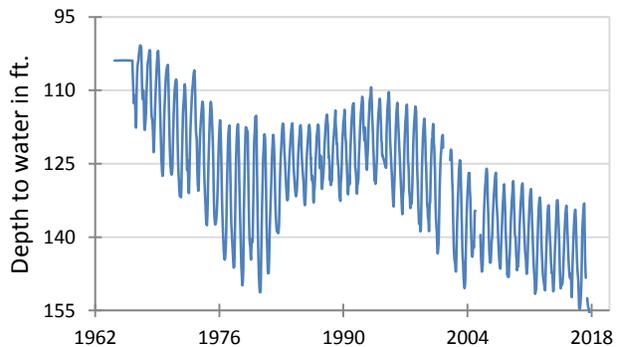
(15) State Well ID 52-16-802
Fort Stockton, Pecos County
Edwards-Trinity (Plateau) Aquifer



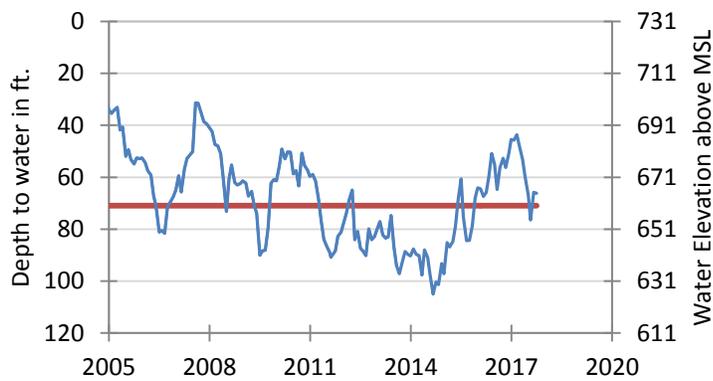
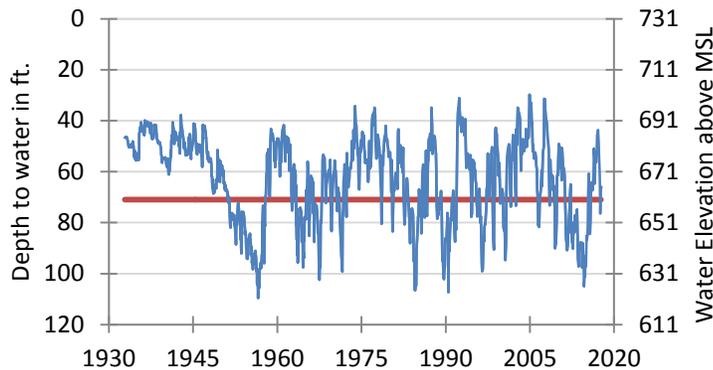
(16) State Well ID 21-35-748
Near O'Brien, Haskell County
Seymour Aquifer



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

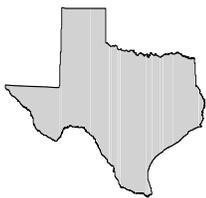


**(8) State Well ID 68-37-203 (J-17)
In San Antonio, Bexar County
Edwards (Balcones Fault Zone) Aquifer**



The late September water-level measurement in this Edwards (Balcones Fault Zone) Aquifer well, elevation 731 feet above mean sea level, was 66.21 feet below land surface, or 664.79 feet above mean sea level. This was 0.40 feet below last month's measurement, 13.50 feet below last year's measurement, and 19.57 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. *****



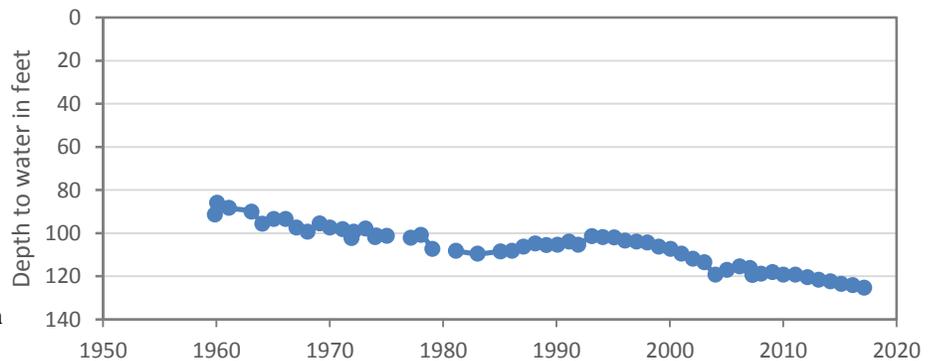
HYDROGRAPH OF THE MONTH

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

The Capitan Reef Complex Aquifer is a minor aquifer located in Culberson, Hudspeth, Jeff Davis, Brewster, Pecos, Reeves, Ward, and Winkler counties. It is exposed in mountain ranges of far West Texas; elsewhere, it occurs in the subsurface. Water is contained in solution cavities and fractures that are unevenly distributed within these formations. Overall, the aquifer contains water of marginal quality, yielding small to large quantities of slightly saline to saline groundwater containing 1,000 to greater than 5,000 milligrams per liter of total dissolved solids. Water of the freshest quality, with total dissolved solids between 300 and 1,000 milligrams per liter, is present in the west near areas of recharge where the reef rock is exposed in several mountain ranges. Although most of the groundwater pumped from the aquifer in Texas is used for oil and gas activities in Ward, Winkler, and Pecos counties, a small amount is used to irrigate salt-tolerant crops in Pecos, Culberson, and Hudspeth counties.

Capitan Reef Complex Aquifer

Well #4717206, 750 feet deep
Unused Well, Hudspeth County



The first recorded water-level measurement for this unused well was 91.42 feet below land surface, measured in 1959. The TWDB has consistently measured this well every year since 1975. The lowest recorded water-level measurement was 125.32 feet below land surface in 2017, and the highest recorded water-level measurement was 85.95 feet below land surface in 1960. The water level for this well has been in a steady decline most likely due nearby irrigation.