Texas Water Conditions Report

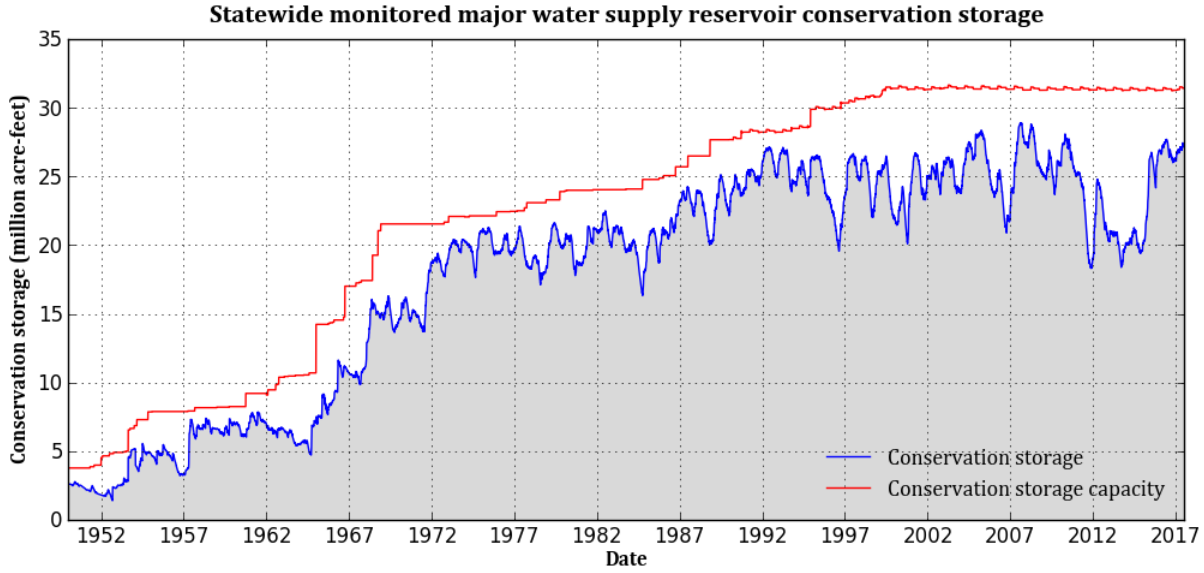
Texas Water Development Board

*June 2017 RESERVOIR STORAGE**

At the end of June 2017, total conservation storage* in 118 of the state's major water supply reservoirs was at 27.3 million acre-feet or 85 percent of total conservation storage capacity. This is approximately 0.07 million acre-feet less than a month ago and 0.29 million acre-feet less than storage at this time last year.

Fifty-one (51) reservoirs held 100 percent of conservation storage capacity, primarily in the North Central (28 reservoirs) and East (17 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), North Central (98 percent), Upper Coast (97 percent), South Central (94 percent), and Low Rolling Plains (79 percent) regions. The High Plains (21 percent), Trans-Pecos (31 percent), and Southern (36 percent) regions had the lowest percentage of storage. Overall, storage increased in two regions but declined in seven 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.

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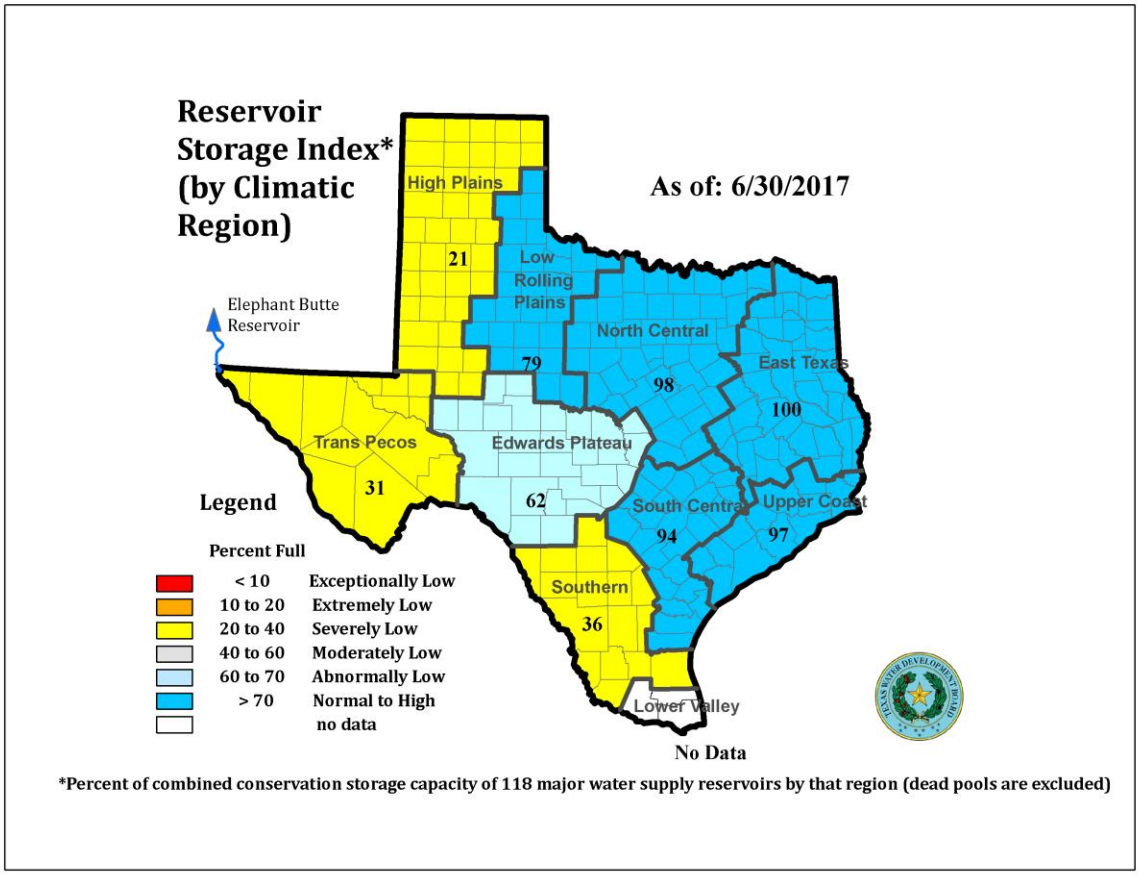
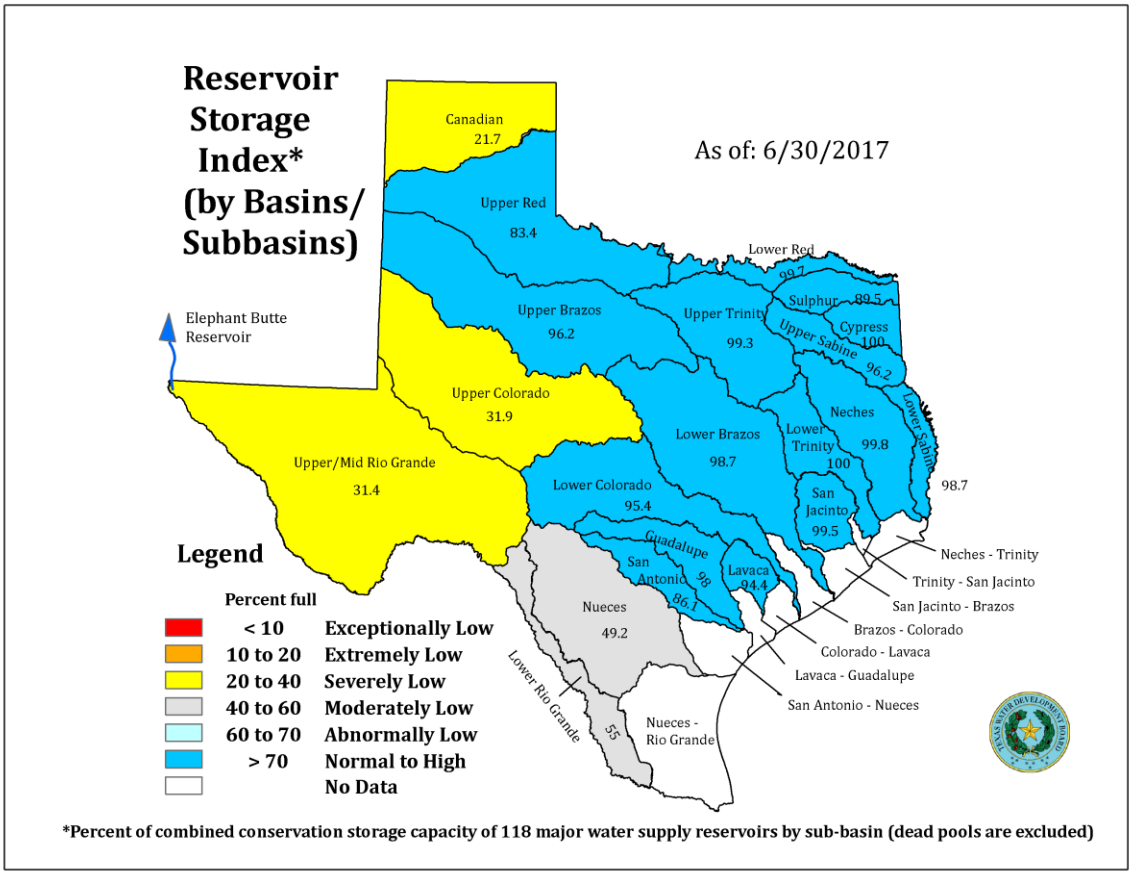
JUNE 2017 RESERVOIR CONDITIONS



*Percent of combined conservation storage capacity of 118 major water supply reservoirs by that region (dead pools are excluded)



*Percent of combined conservation storage capacity of 118 major water supply reservoirs by sub-basin (dead pools are excluded)

*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 (acre-feet)	Conservation storage end of June 2017 (acre-feet)	(%)	Change since end of May 2017 (acre-feet)**	(%)	Change since end of June 2016 (acre-feet)**	(%)
HIGH PLAINS							
MacKenzie Reservoir	46,450	6,926	15	-60	-0	-304	-1
Meredith, Lake	500,000	120,993	24	-2,351	-0	-10,832	-2
Palo Duro Reservoir	61,066	704	1	-115	-0	-1,081	-2
White River Lake	29,880	6,337	21	-288	-1	-2,820	-9
TOTAL	**637,396**	**134,960**	**21**	**-2,814**	**-0**	**-15,037**	**-2**
LOW ROLLING PLAINS							
Abilene, Lake	7,900	7,340	93	-381	-5	-553	-7
Alan Henry Reservoir	94,808	85,431	90	-1,138	-1	-4,796	-5
Champion Creek Reservoir	41,580	21,673	52	760	2	10,562	25
Coleman, Lake	38,075	37,246	98	-613	-2	-649	-2
Colorado City, Lake	30,758	14,306	47	-320	-1	6,204	20
Fort Phantom Hill, Lake	70,030	70,030	100	0	0	0	0
Greenbelt Lake	59,968	16,278	27	-330	-1	698	1
Hords Creek Lake	8,443	6,660	79	-277	-3	-1,401	-17
J. B. Thomas, Lake	199,931	115,337	58	-1,181	-1	-19,411	-10
Kemp, Lake	245,307	245,307	100	0	0	0	0
Millers Creek Reservoir	26,768	26,768	100	1,668	6	198	1
North Fork Buffalo Creek Reservoir	15,400	12,391	80	-30	-0	-105	-1
Stamford, Lake	51,570	51,570	100	5,967	12	0	0
Sweetwater, Lake	12,267	2,872	23	-76	-1	-32	-0
TOTAL	**902,805**	**713,209**	**79**	**4,049**	**0**	**-9,285**	**-1**
NORTH CENTRAL							
Amon G Carter, Lake	19,266	18,948	98	-290	-2	-318	-2
Aquilla Lake	43,243	43,243	100	0	0	0	0
Arlington, Lake	40,188	37,314	93	1,671	4	-642	-2
Arrowhead, Lake	230,359	214,437	93	-557	-0	-9,733	-4
Bardwell Lake	46,122	46,122	100	0	0	0	0
Belton Lake	435,225	435,225	100	0	0	0	0
Benbrook Lake	85,648	76,666	90	9,689	11	-8,982	-10
Bonham, Lake	11,027	8,012	73	-68	-1	-2,628	-24
Bridgeport, Lake	366,236	366,236	100	3,953	1	0	0
*Brownwood, Lake	128,839	128,196	100	-643	-0	-643	-0
*Cisco, Lake	29,003	26,474	91	974	3	-1,929	-7
Crook, Lake	9,195	8,924	97	-135	-1	83	1
Eagle Mountain Lake	179,880	176,282	98	4,228	2	-3,598	-2
Georgetown, Lake	36,823	31,161	85	-3,090	-8	-5,662	-15
Graham, Lake	45,288	45,190	100	2,053	5	297	1
Granbury, Lake	132,949	132,949	100	3,400	3	0	0
Granger Lake	51,822	51,822	100	0	0	0	0
Grapevine Lake	164,703	164,703	100	1,169	1	0	0
*Halbert, Lake	6,033	5,214	86	119	2	-137	-2
Hubbard Creek Reservoir	318,067	311,456	98	5,383	2	1,896	1
Hubert H Moss Lake	24,058	23,799	99	204	1	86	0
Jim Chapman Lake (Cooper)	260,332	207,135	80	4,301	2	-52,663	-20
Joe Pool Lake	175,358	175,358	100	3,690	2	0	0
Kickapoo, Lake	86,345	74,856	87	485	1	-11,489	-13
Lavon Lake	406,388	396,554	98	11,589	3	-9,834	-2
Leon, Lake	27,762	27,762	100	4,547	16	471	2
Lewisville Lake	563,228	563,228	100	13,951	2	0	0
Limestone, Lake	203,780	199,459	98	-4,321	-2	-3,701	-2
*Lost Creek Reservoir	11,950	11,648	97	-8	-0	-226	-2
*Mineral Wells, Lake	5,273	5,273	100	176	3	0	0
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 (acre-feet)	Conservation storage end of June 2017 (acre-feet)	(%)	Change since end of May 2017 (acre-feet)**	(%)	Change since end of June 2016 (acre-feet)**	(%)
		(North Central continued)					
Navarro Mills Lake	49,827	49,827	100	142	0	0	0
New Terrell City Lake	8,583	8,583	100	0	0	0	0
Nocona, Lake (Farmers Crk)	21,444	21,004	98	-280	-1	-440	-2
Palo Pinto, Lake	26,766	26,766	100	2,133	8	0	0
Pat Cleburne, Lake	26,008	24,966	96	-62	-0	-1,042	-4
*Pat Mayse Lake	113,683	113,683	100	0	0	0	0
Possum Kingdom Lake	523,873	523,873	100	2,447	0	0	0
Proctor Lake	54,762	54,762	100	0	0	0	0
Ray Hubbard, Lake	439,559	437,679	100	10,493	2	-1,880	-0
Ray Roberts, Lake	788,167	787,033	100	6,219	1	-1,134	-0
Richland-Chambers Reservoir	1,087,839	1,087,839	100	11,534	1	0	0
Squaw Creek, Lake	151,250	151,250	100	0	0	0	0
Stillhouse Hollow Lake	227,771	227,771	100	0	0	0	0
Tawakoni, Lake	871,685	812,765	93	15,504	2	-58,920	-7
Texoma, Lake (Texas)	1,258,113	1,258,113	100	0	0	0	0
Texoma, Lake (Texas & Oklahoma)	2,525,281	2,644,610	100	-77,853	-3	-73,142	-3
Waco, Lake	189,418	189,418	100	0	0	0	0
Waxahachie, Lake	10,780	10,761	100	224	2	-19	-0
Weatherford, Lake	17,812	17,617	99	958	5	87	0
Whitney, Lake	553,344	538,255	97	40,328	7	-15,089	-3
Worth, Lake	33,495	31,965	95	1,838	5	-1,086	-3
TOTAL	**10,621,419**	**10,410,426**	**98**	**153,948**	**1**	**-188,875**	**-2**
		EAST					
Athens, Lake	29,503	29,503	100	0	0	0	0
B A Steinhagen Lake	66,961	61,375	92	2,605	4	-2,971	-4
Bob Sandlin, Lake	190,822	190,822	100	0	0	0	0
Caddo, Lake		no data		no data		160,924	84
Cedar Creek Reservoir in Trinity	644,686	644,686	100	4,572	1	2,943	0
Cherokee, Lake	40,094	40,094	100	0	0	no data	
Conroe, Lake	410,988	408,115	99	-2,873	-1	0	0
Cypress Springs, Lake	66,756	66,691	100	-65	-0	870	1
Fork Reservoir, Lake	605,061	604,001	100	-1,060	-0	7,108	1
Houston County Lake	17,113	17,113	100	0	0	39	0
Jacksonville, Lake	25,670	25,670	100	0	0	0	0
*Livingston, Lake	1,785,348	1,785,348	100	0	0	0	0
Martin, Lake	75,726	74,444	98	-1,134	-1	147	0
Monticello, Lake	34,740	34,740	100	750	2	548	2
Murvaul, Lake	38,285	38,250	100	-35	-0	547	1
Nacogdoches, Lake	39,522	38,249	97	-1,273	-3	43	0
O' the Pines, Lake	268,566	268,566	100	0	0	0	0
Palestine, Lake	367,303	367,303	100	0	0	1,153	0
Sam Rayburn Reservoir	2,857,077	2,857,077	100	58,342	2	0	0
Striker, Lake	16,934	16,934	100	0	0	no data	
*Sulphur Springs, Lake	17,747	17,455	98	2,016	11	-292	-2
Toledo Bend Reservoir (Texas)	2,236,450	2,207,158	99	-29,292	-1	-29,292	-1
Toledo Bend Reservoir (Texas & Louisiana)	4,472,900	4,418,415	99	-74,421	-2	-61,752	-1
Tyler, Lake	72,073	72,073	100	0	0	752	1
Wright Patman Lake	231,496	231,496	100	-60,815	-26	0	0
TOTAL	**10,138,921**	**10,097,163**	**100**	**-28,262**	**-0**	**142,519**	**1**

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of lake or reservoir	Conservation storage capacity (acre-feet)	Conservation storage end of June 2017 (acre-feet)	(%)	Change since end of May 2017 (acre-feet)**	(%)	Change since end of June 2016 (acre-feet)**	(%)
TRANS-PECOS							
Elephant Butte Reservoir (Texas)	852,491	203,989	24	-12,391	-1	74,225	9
Elephant Butte Reservoir (Texas & New Mexico)	1,973,358	472,197	24	-28,684	-1	171,816	9
Red Bluff Reservoir	151,110	110,873	73	-9,597	-6	-16,221	-11
TOTAL	**1,003,601**	**314,862**	**31**	**-21,988**	**-2**	**58,004**	**6**
EDWARDS PLATEAU							
*Amistad Reservoir (Texas)	1,840,849	1,424,722	77	-24,763	-1	46,214	3
*Amistad Reservoir (Texas & Mexico)	3,275,532	1,613,823	49	6,538	0	-354,539	-11
Brady Creek Reservoir	28,808	18,324	64	-112	-0	2,773	10
Buchanan, Lake	816,904	805,422	99	-3,028	-0	-10,180	-1
E. V. Spence Reservoir	517,272	76,064	15	569	0	20,739	4
Inks, Lake	13,962	12,975	93	180	1	8	0
Lyndon B Johnson, Lake	115,249	110,881	96	489	0	550	0
Marble Falls, Lake	6,901	6,804	99	-21	-0	-43	-1
Nasworthy	9,615	7,890	82	-220	-2	-779	-8
Oak Creek Reservoir	39,210	22,395	57	-536	-1	2,869	7
O. C. Fisher Lake	119,445	15,295	13	-718	-1	-4,867	-4
*O. H. Ivie Reservoir	554,340	129,500	23	-6,525	-1	-4,293	-1
Twin Buttes Reservoir	182,454	21,258	12	-1,696	-1	2,405	1
TOTAL	**4,245,009**	**2,651,530**	**62**	**-36,381**	**-1**	**55,396**	**1**
SOUTH CENTRAL							
*Austin, Lake	23,972	22,696	95	62	0	-385	-2
Canyon Lake	378,781	373,370	99	-3,766	-1	-5,411	-1
*Coleto Creek Reservoir	31,040	28,158	91	-317	-1	-2,882	-9
Medina Lake	254,823	219,504	86	-7,886	-3	-35,319	-14
Somerville Lake	147,104	147,104	100	0	0	0	0
Travis, Lake	1,113,348	1,043,332	94	-35,451	-3	-70,016	-6
TOTAL	**1,949,068**	**1,834,164**	**94**	**-47,358**	**-2**	**-114,013**	**-6**
UPPER COAST							
Houston, Lake	120,686	120,686	100	0	0	0	0
Texana, Lake	159,566	150,682	94	-4,320	-3	-7,050	-4
TOTAL	**280,252**	**271,368**	**97**	**-4,320**	**-2**	**-7,050**	**-3**
SOUTHERN							
Choke Canyon Reservoir	662,820	238,569	36	-10,001	-2	-4,609	-1
Corpus Christi, Lake	256,961	213,542	83	-13,811	-5	30,213	12
*Falcon Reservoir (Texas)	1,551,007	442,348	29	-61,033	-4	-235,592	-15
*Falcon Reservoir (Texas & Mexico)	2,646,817	627,619	24	-70,559	-3	-267,921	-10
TOTAL	**2,470,788**	**894,459**	**36**	**-84,845**	**-3**	**-209,988**	**-8**
STATEWIDE TOTAL							
STATEWIDE TOTAL	**32,249,259**	**27,322,141**	**85**	**-67,971**	**-0**	**-288,329**	**-1**

* 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:

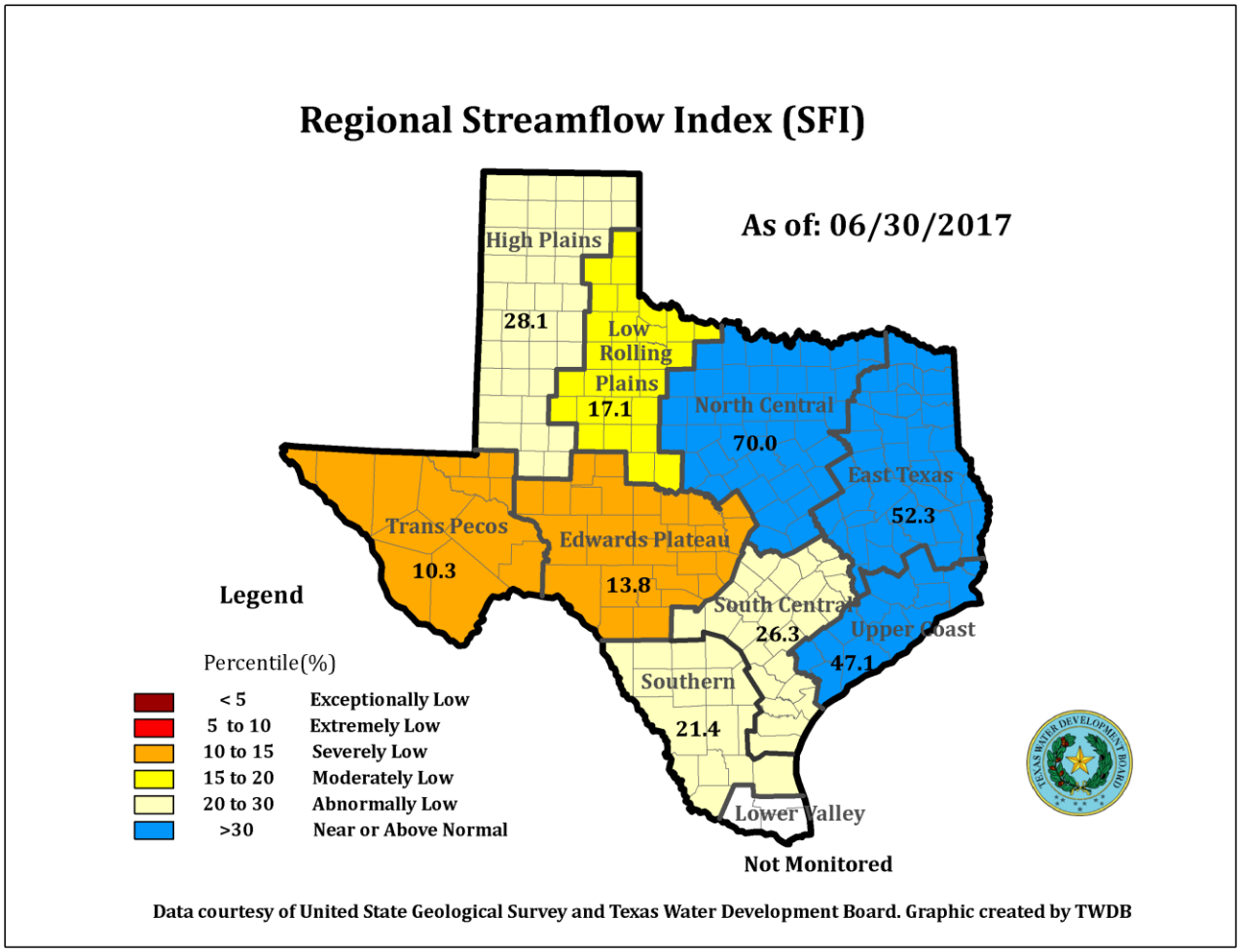
Conservation storage capacity is the space available to store water above the lowest outlet and below the top of conservation pool, or normal maximum operating level. Conservation storage refers to the volume of water held within the conservation storage space. Not included is any water in flood control 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.

JUNE 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 two index stations and decreased at 27 stations.

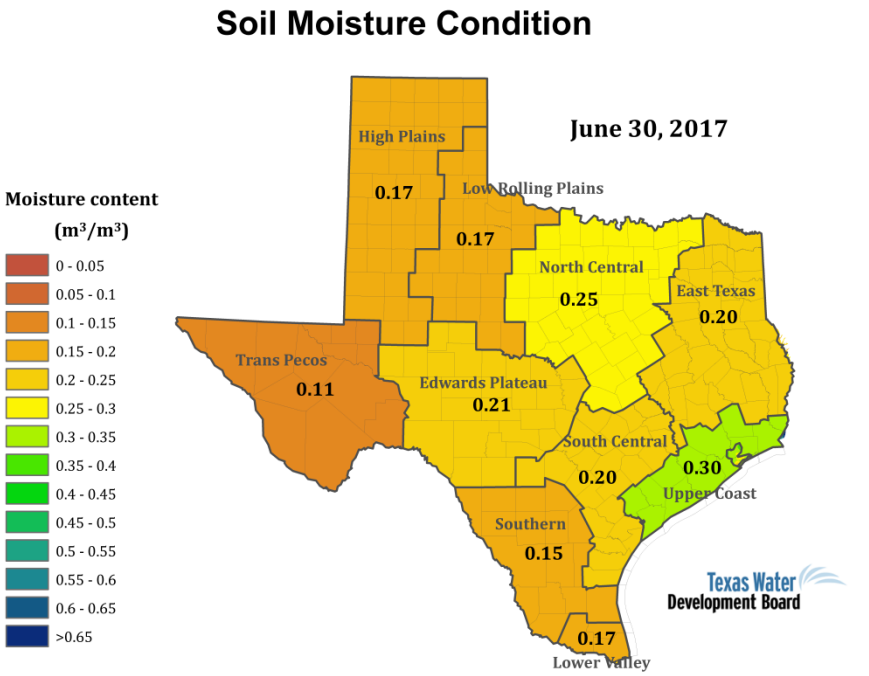
Streamflow Status	Number of Stations
Near or Above Normal (>30%)	13
Abnormally Low (20-30%)	5
Moderately Low (15-20%)	2
Severely Low (10-15%)	1
Extremely Low (5-10%)	3
Exceptionally Low (<5%)	5

On a regional basis, as shown below, flows were near or above normal in North Central, East, and Upper Coast regions, abnormally low in High Plains, South Central, and Southern regions, moderately low in Low Rolling Plains region, and severely low in Trans-Pecos and Edwards Plateau regions. Streamflow in the Lower Valley region is not monitored.

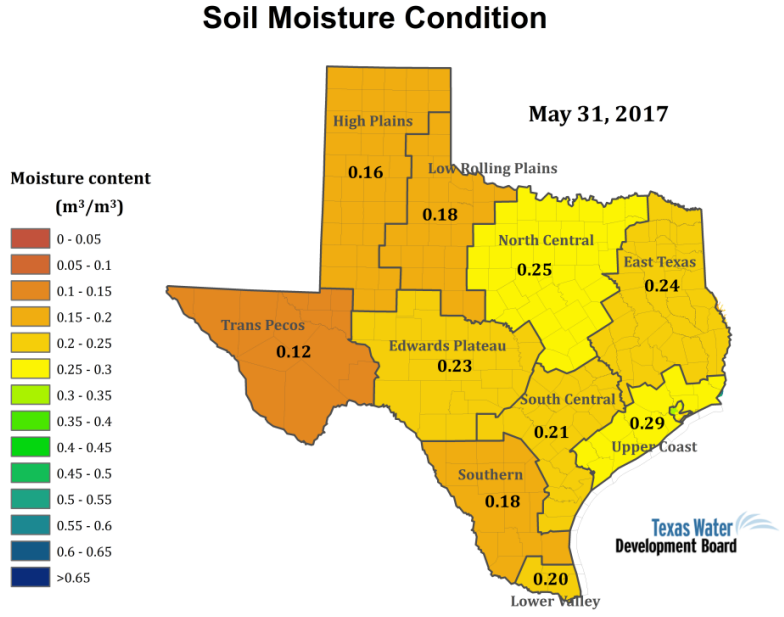


*Streamflow Index is defined as the percentile flow that exceeds a given percent of observed flows.

JUNE 2017 SOIL MOISTURE CONDITIONS



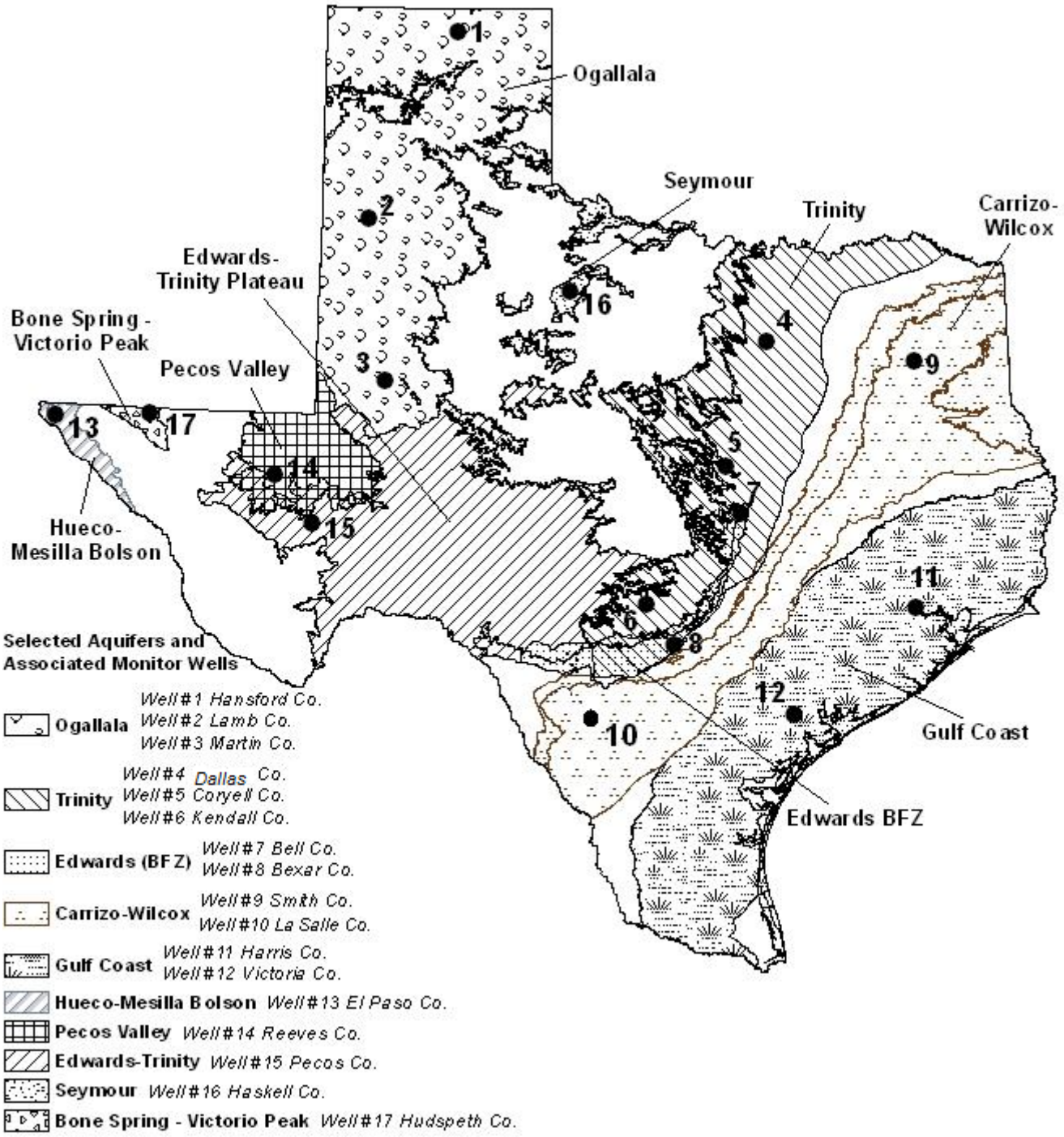
Data from NASA Soil Moisture Active Passive (SMAP) Level 4 - Model - Value Added Version 2
Soil moisture content is shown as volume of water per unit volume of bulk soil. Root zone: 0 to 1 meter depth.



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*, June 30, 2017), as compared to soil moisture at the end of May 2017 (*bottom image*), declined in Trans-Pecos, Low Rolling Plains, East Texas, Edwards Plateau, South Central, Southern, and Lower Valley regions. Soil moisture increased in High Plains and Upper Coast regions and remained the un-changed in the North Central region.

June 2017 GROUNDWATER LEVELS IN OBSERVATION WELLS



Water-level measurements were available for all the 17 key monitoring wells in the state. Water levels rose in five monitoring wells since the beginning of June, ranging from an increase of 0.08 feet in the Haskell County Seymour Aquifer well (#16 on map) to 0.60 feet in the Harris County Gulf Coast Aquifer well (#11 on map). Water levels declined in eleven monitoring wells, ranging from a decline of 0.03 feet in the El Paso County Hueco-Mesilla Bolson Aquifer well (#13 on map) to 7.26 feet in the Pecos County Edwards-Trinity (Plateau) Aquifer well (#15 on map). The J-17 well (#8 on map) in San Antonio recorded a water level of 66.91 feet below land surface or 664.09 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 3.3 feet above the Stage I critical management level.

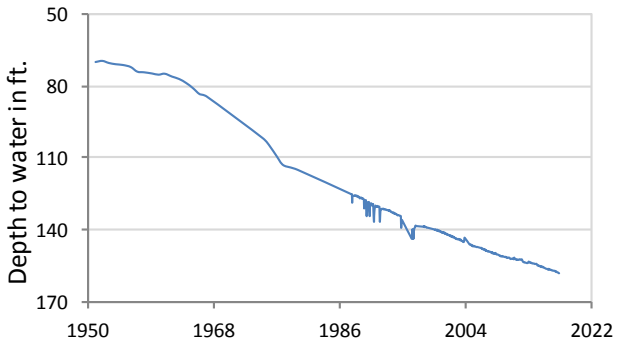
***IDs used in this publication on the aquifer map to indicate the monitoring well location (IDs 1 - 17) are different than the TWDB's six- or seven-digit state well identification number.**

Monitoring Well	June	May	Month Change	Year Change	Historical Change	First Measured
(1) Hansford 0354301	158.27	158.27	0.00	-1.19	-88.15	1951
(2) Lamb 1053602	147.46	147.41	-0.05	-0.84	-119.29	1951
(3) Martin 2739903	143.26	143.58	0.32	0.33	-38.37	1964
(4) Dallas 3319101	491.67	492.17	0.50	2.50	-269.67	1954
(5) Coryell 4035404	516.06	516.34	0.28	-10.24	-224.06	1955
(6) Kendall 6802609	117.14	114.46	-2.68	-8.70	-57.14	1975
(7) Bell 5804816	121.89	121.30	-0.59	-4.70	1.62	2008
(8) Bexar 6837203	66.91	59.91	-7.00	-11.10	-20.27	1932
(9) Smith 3430907	431.32	430.51	-0.81	2.35	-131.32	1987
(10) La Salle 7738103	474.62	470.57	-4.05	-15.89	-221.55	2003
(11) Harris 6514409	190.37	190.97	0.60	-1.09	-54.87*	1947**
(12) Victoria 8017502	32.05	31.03	-1.02	4.15	1.95	1958
(13) El Paso 4913301	294.80	294.77	-0.03	0.50	-62.90	1964
(14) Reeves 4644501	167.75	165.51	-2.24	-2.97	-75.66	1952
(15) Pecos 5216802	217.79	210.53	-7.26	-2.80	29.09	1976
(16) Haskell 2135748	46.34	46.42	0.08	0.06	-3.34	2002
(17) Hudspeth 4807516	152.48	NA	NA	-2.99	-48.56	1966

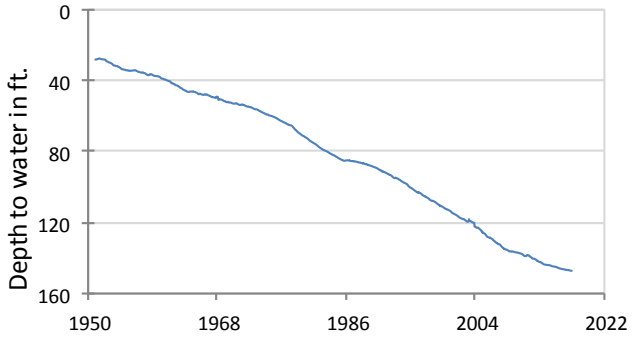
*Change since the original measurement of 135.5 feet below land surface in 1947 (**measurement not shown on the hydrograph)

June 2017 GROUNDWATER LEVELS IN OBSERVATION WELLS

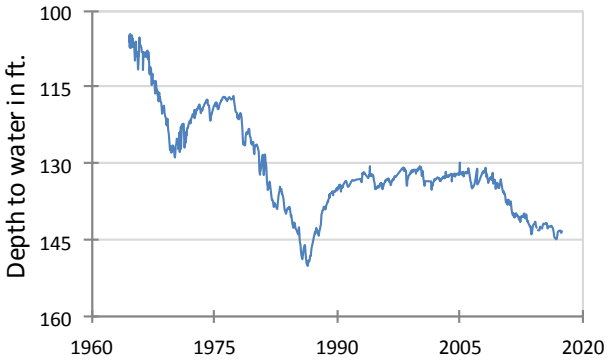
(1) State Well ID 03-54-301
Near Spearman, Hansford County
Ogallala Aquifer



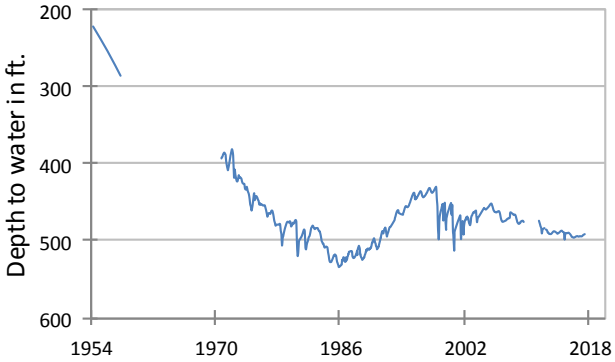
(2) State Well ID 10-53-602
Near Earth, Lamb County
Ogallala Aquifer



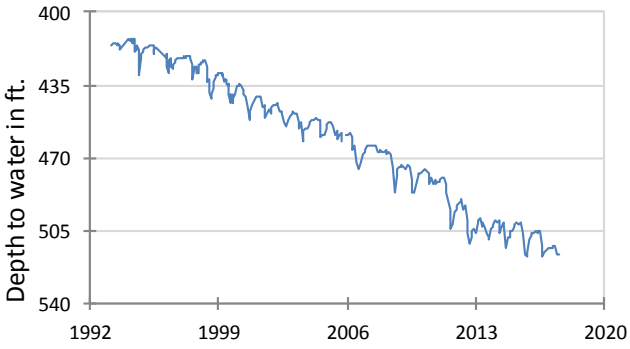
(3) State Well ID 27-39-903
Northwest Martin County
Ogallala Aquifer



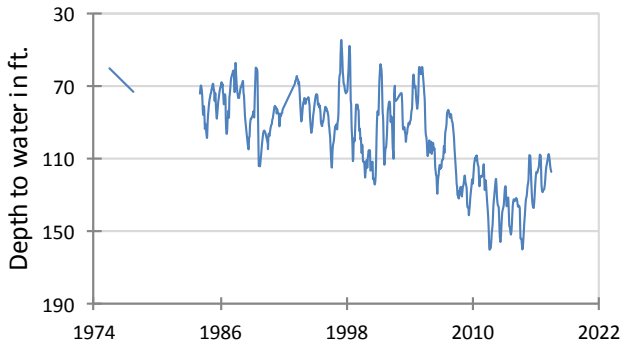
(4) State Well ID 33-19-101
Southeast Dallas, Dallas County
Twin Mountains Formation-Trinity Aquifer



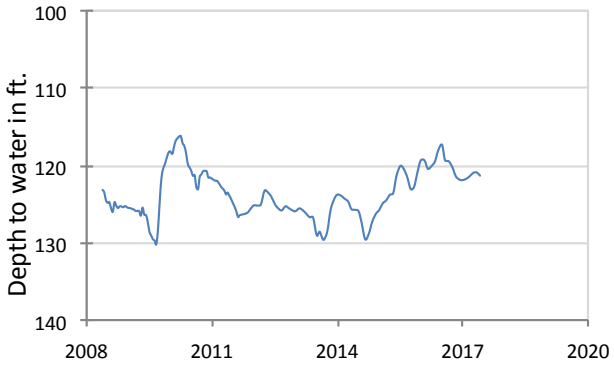
(5) State Well ID 40-35-404
Gatesville, Coryell County
Hosston Formation-Trinity Aquifer



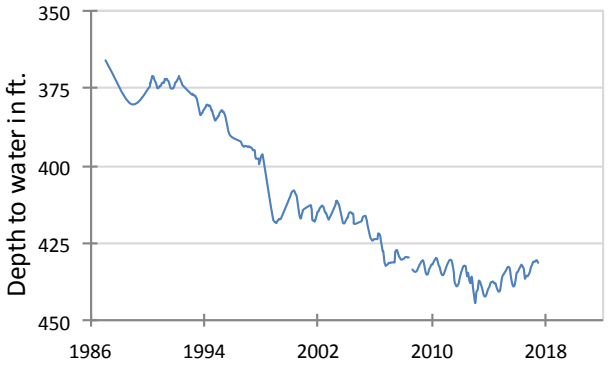
(6) State Well ID 68-02-609
Waring, Kendall County
Cow Creek Formation-Trinity Aquifer



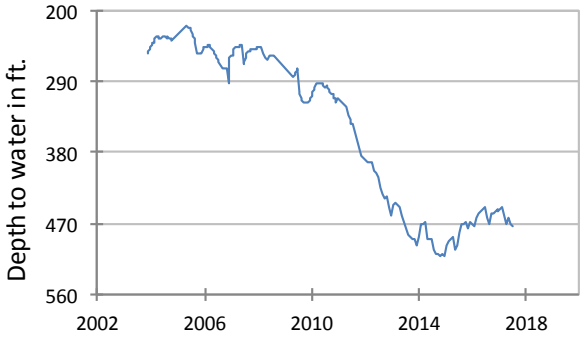
(7) State Well ID 58-04-816
Near Salado, Bell County
Edwards (Balcones Fault Zone) Aquifer



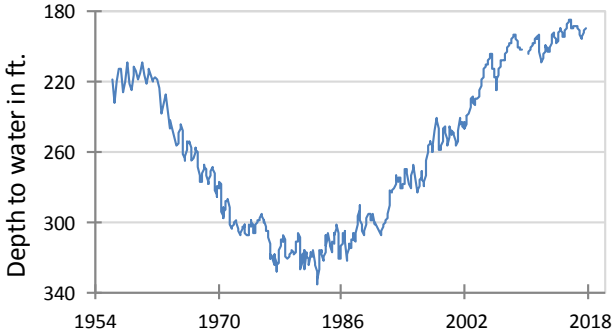
(9) State Well ID 34-30-907
Red Springs, Smith County
Carrizo-Wilcox Aquifer



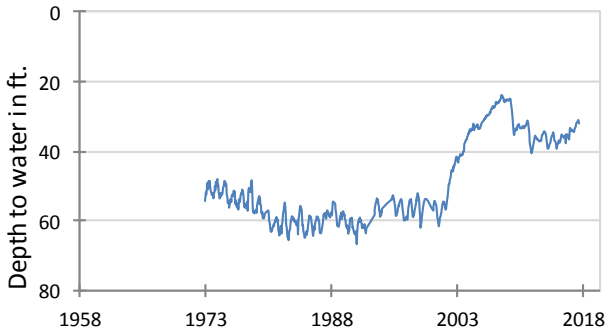
(10) State Well ID 77-38-103
Near Cotulla, La Salle County
Carrizo-Wilcox Aquifer



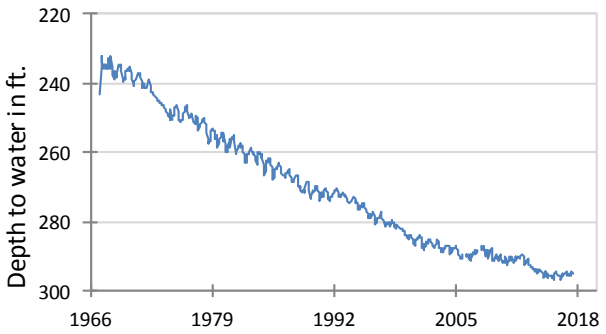
(11) State Well ID 65-14-409
Alief, Harris County
Evangeline Formation-Gulf Coast Aquifer



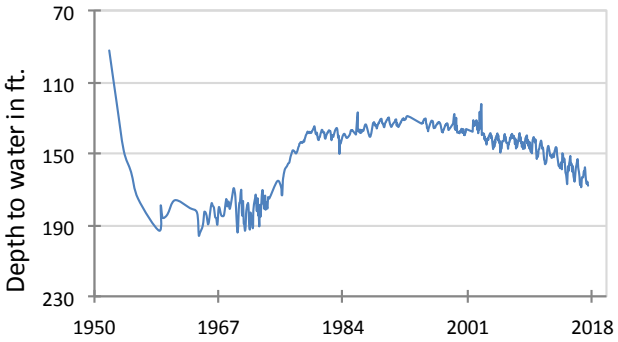
(12) State Well ID 80-17-502
Near Bloomington, Victoria County
Lissie Formation-Gulf Coast Aquifer



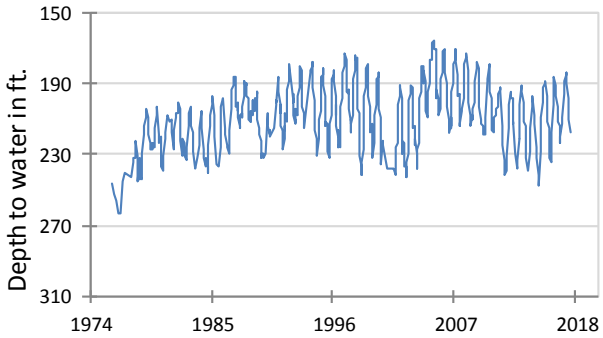
(13) State Well ID 49-13-301
El Paso, El Paso County
Hueco-Mesilla Bolson Aquifer



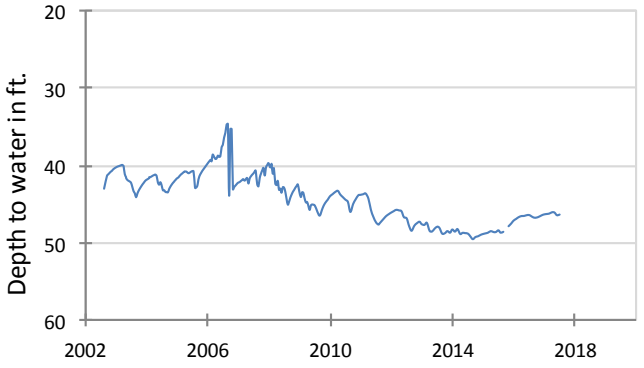
(14) State Well ID 46-44-501
Near Pecos, Reeves County
Pecos Valley Aquifer



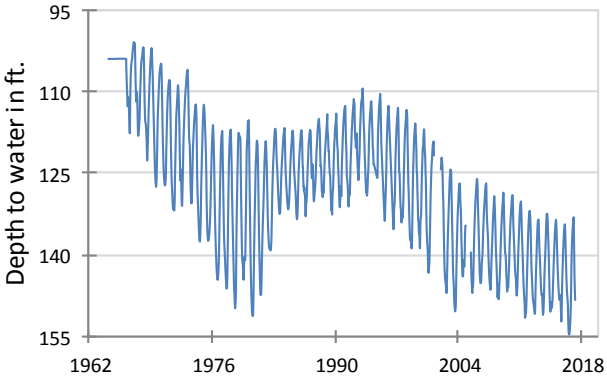
(15) State Well ID 52-16-802
Fort Stockton, Pecos County
Edwards-Trinity (Plateau) Aquifer



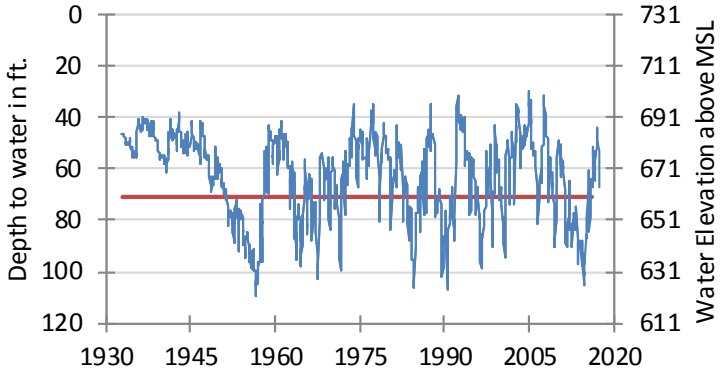
(16) State Well ID 21-35-748
Near O'Brien, Haskell County
Seymour Aquifer

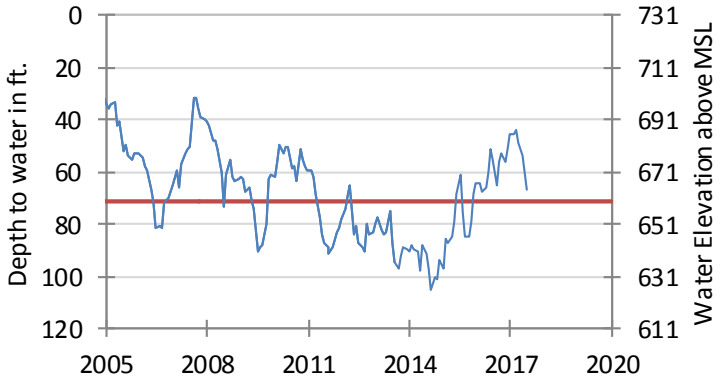


(17) State Well ID 48-07-516
Dell City, Hudspeth County
Bone Spring - Victorio Peak Aquifer



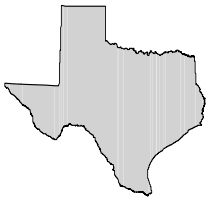
(8) State Well ID 68-37-203 (J-17)
In San Antonio, Bexar County
Edwards (Balcones Fault Zone) Aquifer





The late June water-level measurement in this Edwards (Balcones Fault Zone) Aquifer well, elevation 731 feet above mean sea level, was 66.91 feet below land surface, or 664.09 feet above mean sea level. This was 7.00 feet below last month's measurement, 11.10 feet below last year's measurement, and 20.27 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. *****



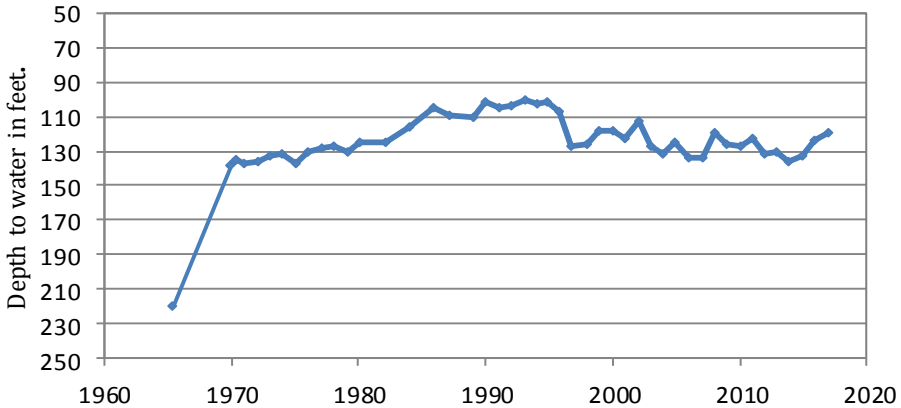
HYDROGRAPH OF THE MONTH

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

Edwards-Trinity (High Plains) Aquifer

The Edwards-Trinity (High Palins) Aquifer is a minor aquifer that underlies about 9,000 square miles of the Ogallala Aquifer in western Texas and eastern New Mexico. Its water-producing units include sandstone of the Antlers Formation (Trinity Group) and limestone of the overlying Comanche Peak and Edwards formations. Recharge to the aquifer is primarily due to downward leakage from the younger Ogallala Aquifer. Groundwater typically contains more total dissolved solids than does the overlying Ogallala Aquifer. It generally is slightly saline, with total dissolved solids ranging from 1,000 to 2,000 milligrams per liter, but can range from 400 to more than 3,000 milligrams per liter. Groundwater is poorest in quality, with total dissolved solids in excess of 20,000 milligrams per liter, where the aquifer is overlain by saline lakes or the gypsum-rich Tahoka and Double Lakes formations. The main use of the aquifer is for irrigation, which accounts for 95% of the usage. Water-level declines have occurred in some irrigated areas.

Well #2344208, 271 feet deep
Unused Well, Northwestern Garza County



The first recorded water-level measurement for this unused well was 220 feet below land surface, measured in 1965 by the TWDB, and it remains the lowest recorded in the period of record. The TWDB has consistently measured this well every year since 1969. The highest recorded water level measurement in 1993 was 100.46 feet below land surface. The water level has remained relatively stable with minor fluctuations since 1969.