Texas Water Conditions Report

Texas Water Development Board

RESERVOIR STORAGE

January 2016

At the end of the month, total storage in 114 of the state's major water supply reservoirs was at 26.90 million acre-feet* or 86% of total conservation storage capacity. This is 4,908 acre-feet more than a month ago and 6.58 million acre-feet more than storage at this time last year.

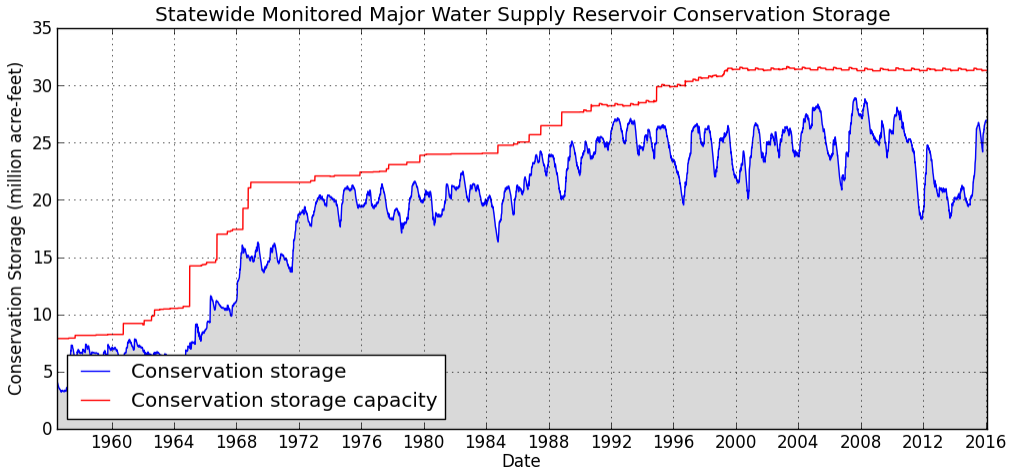
Sixty-five (65) reservoirs held 100% of conservation storage capacity, primarily in the North Central (42) and East (19) regions. Two (2) reservoirs remain below 10% full, Palo Duro (3%) and Twin Buttes (5%).

Total combined storage was greater than 70% in the Upper Coast (100%), East (100%), North Central (98%), South Central (92%), Trans-Pecos (89%), and Low Rolling Plains (75%) regions. Regions with the lowest percentage of storage were the High Plains (24%) and Southern (50%) regions. Storage increased in four regions and decline in five regions over the past month.

Elephant Butte reservoir held 360,902 acre-feet or 18% of storage capacity. This is 39,701 acre-feet more than a month ago.

* Only the Texas share of storage in border reservoirs is counted.

CONSERVATION STORAGE DATA FOR 114 MAJOR RESERVOIRS



Storage is based on the end of the month data in 114 major reservoirs that represent 96% of the total conservation storage capacity of 188 major water supply reservoirs in Texas. Major reservoirs are defined as having a conservation storage capacity of 5,000 acre-feet or greater.

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CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS							
Name of Lake or Reservoir	Conservation Storage Capacity (acre-feet)	Conservation Storage end of Jan 2016 (acre-feet)	(%)	Change since end of Dec 2015 (acre-feet)	(%)	Change since end of Jan 2015 (acre-feet)	(%)
HIGH PLAINS							
Palo Duro Reservoir	61,066	2,014	3	-206	-0	1,057	2
Meredith, Lake (Texas)	500,000	130,963	26	2,513	1	104,708	21
Meredith, Lake (Texas & Oklahoma)	779,556	130,963	17	2,513	0	104,708	13
MacKenzie Reservoir	46,450	7,591	16	14	0	4,211	9
White River Lake	29,880	10,052	34	108	0	8,803	29
TOTAL	**637,396**	**150,620**	**24**	**2,429**	**0**	**118,779**	**19**
LOW ROLLING PLAINS							
Greenbelt Lake	59,968	14,219	24	284	0	6,876	11
N. Fork Buffalo Crk Reservoir	15,400	12,738	83	-936	-6	12,187	79
Kemp, Lake	245,307	212,612	87	6,809	3	145,927	59
Millers Creek Reservoir	26,768	26,768	100	0	0	24,648	92
Alan Henry Reservoir	94,808	90,253	95	-760	-1	19,188	20
Stamford, Lake	51,570	51,570	100	0	0	46,352	90
J B Thomas, Lake	199,931	143,661	72	-1,431	-1	53,427	27
Fort Phantom Hill, Lake	70,030	69,131	99	581	1	47,443	68
Sweetwater, Lake	12,267	1,647	13	137	1	3	0
Colorado City, Lake	30,758	8,673	28	-113	-0	2,071	7
Champion Creek Reservoir	41,580	9,520	23	-58	-0	7,132	17
Abilene, Lake	7,900	2,226	28	721	9	no data	
Coleman, Lake	38,075	30,363	80	478	1	18,342	48
Hords Creek Lake	8,443	4,090	48	9	0	626	7
TOTAL	**902,805**	**677,471**	**75**	**5,721**	**1**	**384,222**	**43**
NORTH CENTRAL							
Nocona, Lake (Farmers Crk)	21,444	21,444	100	0	0	14,667	68
Hubert H Moss Lake	24,058	23,928	99	-130	-1	3,822	16
Texoma, Lake (Texas)	1,258,113	1,243,246	99	-14,867	-1	165,080	13
Texoma, Lake (Texas & Oklahoma)	2,525,281	1,243,246	49	-14,867	-1	165,080	7
*Pat Mayse Lake	113,683	113,683	100	0	0	no data	
Kickapoo, Lake	86,345	86,345	100	0	0	61,545	71
Arrowhead, Lake	230,359	230,359	100	0	0	186,038	81
Bonham, Lake	11,027	11,027	100	0	0	2,783	25
Crook, Lake	9,195	9,164	100	-31	-0	-21	-0
Amon G Carter, Lake	19,266	19,266	100	0	0	9,634	50
Ray Roberts, Lake	788,167	788,167	100	0	0	207,341	26
Jim Chapman Lake (Cooper)	260,332	260,332	100	0	0	159,148	61
Graham, Lake	45,288	45,165	100	-123	-0	27,985	62
*Lost Creek Reservoir	11,950	11,950	100	0	0	4,777	40
Bridgeport, Lake	366,236	366,236	100	0	0	228,064	62
Lewisville Lake	563,228	563,228	100	0	0	173,311	31
Lavon Lake	406,388	406,388	100	0	0	207,389	51
Hubbard Creek Reservoir	318,067	147,849	46	-845	-0	104,516	33
Possum Kingdom Lake	523,873	523,873	100	6,190	1	187,103	36
*Mineral Wells, Lake	6,760	6,760	100	0	0	3,389	50
Weatherford, Lake	17,812	17,812	100	0	0	7,043	40
Eagle Mountain Lake	179,880	179,880	100	0	0	80,271	45
Worth, Lake	33,495	33,495	100	0	0	11,684	35
Grapevine Lake	164,703	164,703	100	0	0	68,677	42
Ray Hubbard, Lake	452,040	452,040	100	829	0	173,335	38
New Terrell City Lake	8,583	8,583	100	0	0	1,470	17
Palo Pinto, Lake	26,766	26,766	100	0	0	24,444	91
Benbrook Lake	85,648	85,648	100	0	0	29,517	34
**Arlington, Lake	40,188	39,967	99	-2,118	-5	9,828	24

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS							
Name of Lake or Reservoir	Conservation Storage Capacity (acre-feet)	Conservation Storage end of Jan 2016 (acre-feet)	(%)	Change since end of Dec 2015 (acre-feet)	(%)	Change since end of Jan 2015 (acre-feet)	(%)
(North Central Continued)							
Joe Pool Lake	175,358	175,358	100	0	0	9,828	6
*Cisco, Lake	25,895	19,874	77	-190	-1	8,046	31
Leon, Lake	26,476	26,446	100	-30	-0	10,146	38
Granbury, Lake	125,756	125,756	100	3,770	3	57,863	46
Pat Cleburne, Lake	26,008	26,008	100	0	0	8,563	33
Waxahachie, Lake	10,780	10,780	100	0	0	2,140	20
Bardwell Lake	46,122	46,122	100	0	0	6,756	15
Proctor Lake	55,457	55,457	100	0	0	39,057	70
Whitney, Lake	553,344	532,931	96	-20,413	-4	174,693	32
Aquilla Lake	43,243	43,243	100	0	0	6,303	15
Navarro Mills Lake	49,827	49,827	100	0	0	6,755	14
*Halbert, Lake	6,033	5,219	87	-415	-7	343	6
Richland-Chambers Reservoir	1,087,839	1,087,839	100	0	0	390,274	36
*Brownwood, Lake	128,839	128,839	100	0	0	65,938	51
Waco, Lake	189,418	187,882	99	-1,536	-1	20,901	11
Limestone, Lake	208,014	208,014	100	0	0	0	0
Belton Lake	435,225	435,225	100	0	0	137,216	32
Stillhouse Hollow Lake	227,771	227,771	100	0	0	79,078	35
Georgetown, Lake	36,823	36,823	100	0	0	11,378	31
Granger Lake	50,779	50,779	100	0	0	0	0
Tawakoni, Lake	871,685	871,685	100	0	0	363,494	42
Mountain Creek, Lake	22,850	22,850	100	0	0	0	0
Squaw Creek, Lake	151,250	151,250	100	0	0	1,608	1
TOTAL	**10,627,686**	**10,413,282**	**98**	**-29,909**	**0**	**3,553,220**	**33**
EAST							
Wright Patman Lake	122,593	122,593	100	0	0	0	0
*Sulphur Springs, Lake	17,747	17,273	97	1,653	9	-474	-3
Cypress Springs, Lake	66,756	66,756	100	0	0	162	0
Bob Sandlin, Lake	190,822	190,822	100	0	0	13,553	7
Caddo, Lake	29,898	29,898	100	0	0	no data	
Martin, Lake	75,726	75,677	100	50	0	-49	-0
Monticello, Lake	34,740	34,740	100	0	0	0	0
Fork Reservoir, Lake	605,061	590,125	98	-14,936	-2	154,327	26
O the Pines, Lake	241,363	241,363	100	0	0	0	0
Cedar Creek Reservoir in Trinity	644,686	644,359	100	-327	-0	148,621	23
Athens, Lake	29,503	29,503	100	0	0	1,323	4
Palestine, Lake	367,303	367,303	100	0	0	0	0
Tyler, Lake	72,073	72,073	100	0	0	0	0
Murvaul, Lake	38,285	38,285	100	0	0	0	0
Jacksonville, Lake	25,670	25,670	100	0	0	0	0
Nacogdoches, Lake	39,522	39,347	100	-175	-0	-175	-0
Houston County Lake	17,113	17,113	100	0	0	0	0
Sam Rayburn Reservoir	2,857,077	2,857,077	100	0	0	0	0
Toledo Bend Reservoir (Texas)	2,236,450	2,236,450	100	0	0	250,163	11
Toledo Bend Reservoir (TX & LA)	4,472,900	2,236,450	50	0	0	250,163	6
*Livingston, Lake	1,785,348	1,785,348	100	0	0	0	0
B A Steinhagen Lake	66,961	58,277	87	4,601	7	3,806	6
Conroe, Lake	410,988	410,796	100	-192	-0	1,342	0
TOTAL	**9,975,685**	**9,950,848**	**100**	**-9,326**	**-0**	**572,599**	**6**
TRANS-PECOS							
Red Bluff Reservoir	151,110	135,046	89	-2,074	-1	-346	-0
TOTAL	**151,110**	**135,046**	**89**	**-2,074**	**-1**	**-346**	**-0**

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS							
Name of Lake or Reservoir	Conservation Storage Capacity (acre-feet)	Conservation Storage end of Jan 2016 (acre-feet)	(%)	Change since end of Dec 2015 (acre-feet)	(%)	Change since end of Jan 2015 (acre-feet)	(%)
EDWARDS PLATEAU							
Oak Creek Reservoir	39,210	13,662	35	1,249	3	7,721	20
E V Spence Reservoir	517,272	50,136	10	-564	-0	39,424	8
O C Fisher Lake	115,742	18,941	16	-502	-0	18,200	16
*O H Ivie Reservoir	554,340	69,732	13	-822	-0	-9,990	-2
Twin Buttes Reservoir	182,454	9,874	5	441	0	3,769	2
Nasworthy	9,615	7,721	80	-48	-0	489	5
Brady Creek Reservoir	28,808	10,678	37	103	0	2,892	10
Buchanan, Lake	860,607	705,186	82	17,402	2	406,942	47
Inks, Lake	13,962	13,058	94	143	1	188	1
Lyndon B Johnson, Lake	115,249	111,371	97	857	1	1,040	1
*Amistad Reservoir (Texas)	1,840,849	1,232,966	67	4,227	0	79,424	4
*Amistad Reservoir (TX & Mexico)	3,275,532	1,232,966	38	4,227	0	79,424	2
TOTAL	**4,278,108**	**2,243,325**	**52**	**22,486**	**1**	**550,099**	**13**
SOUTH CENTRAL							
Travis, Lake	1,113,348	1,050,317	94	18,307	2	676,094	61
*Austin, Lake	23,972	22,849	95	-278	-1	-886	-4
Somerville Lake	147,104	147,104	100	0	0	0	0
Canyon Lake	378,781	377,547	100	-1,234	-0	85,773	23
Medina Lake	254,823	162,356	64	-47	-0	153,995	60
*Coleto Creek Reservoir	31,040	29,445	95	1,141	4	9,176	30
TOTAL	**1,949,068**	**1,789,618**	**92**	**17,889**	**1**	**924,152**	**47**
UPPER COAST							
Houston, Lake	120,686	120,686	100	0	0	0	0
Texana, Lake	159,566	158,556	99	-918	-1	16,083	10
TOTAL	**280,252**	**279,242**	**100**	**-918**	**-0**	**16,083**	**6**
SOUTHERN							
Choke Canyon Reservoir	695,262	232,163	33	-2,162	-0	59,855	9
Corpus Christi, Lake	256,961	206,639	80	-5,690	-2	86,541	34
*Falcon Reservoir (Texas)	1,551,007	820,801	53	6,462	0	315,835	20
*Falcon Reservoir (TX & Mexico)	2,646,817	820,801	31	6,462	0	315,835	12
TOTAL	**2,503,230**	**1,259,603**	**50**	**-1,390**	**-0**	**462,231**	**18**
STATEWIDE TOTAL							
STATEWIDE TOTAL	**31,305,340**	**26,899,055**	**86**	**4,908**	**0**	**6,581,039**	**21**
Elephant Butte Reservoir	1,973,358	360,844	18	39,643	2	70,587	4

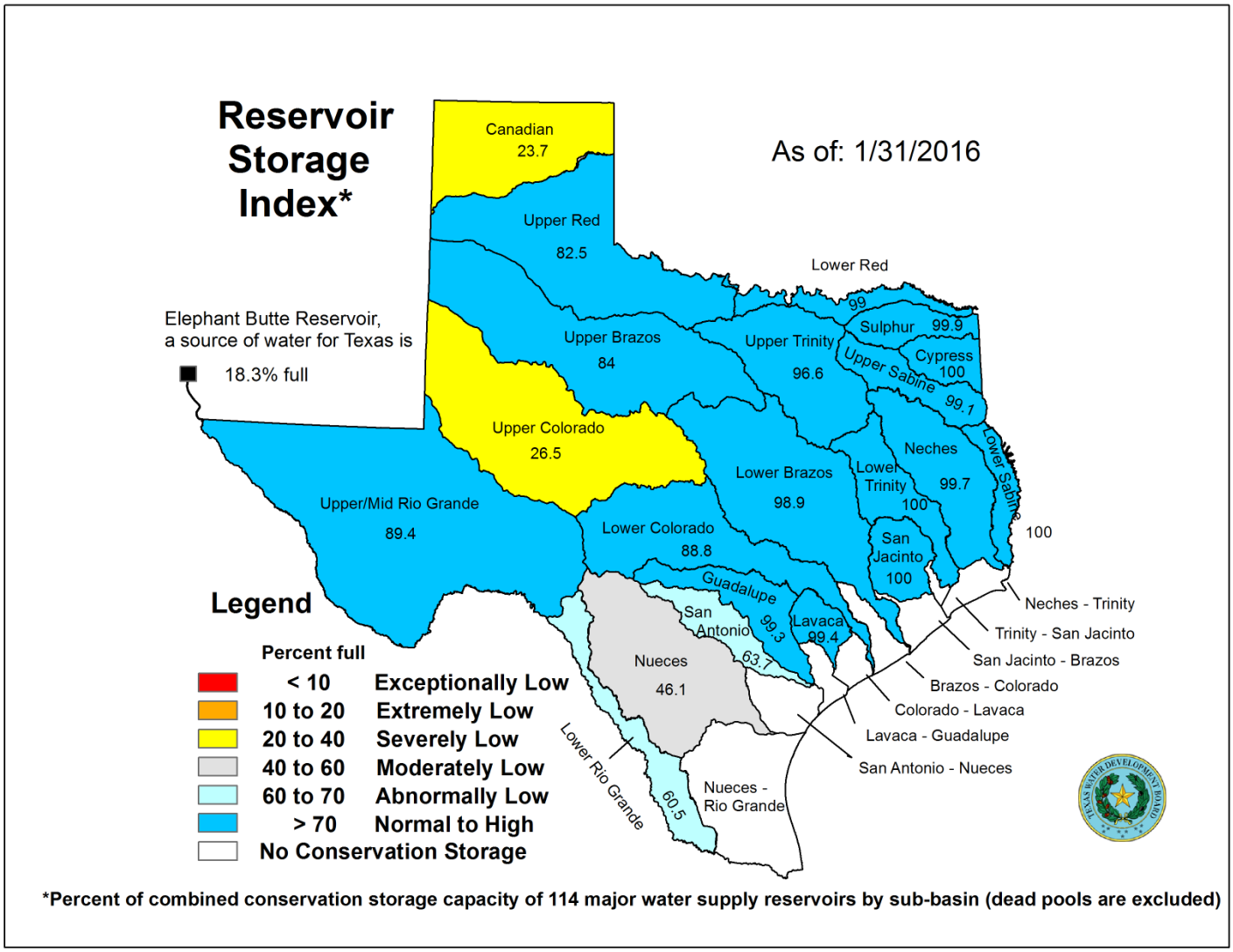
* Conservation volume is used as conservation storage capacity, because the dead storage is unknown

** Lake Arlington did not have a reading on Jan 31, 2016. The data is therefore estimated based on the Jan 30 and Feb 01 readings.

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 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. Figures shown are for the Texas share of conservation storage in all reservoirs.

JANUARY RESERVOIR CONDITIONS



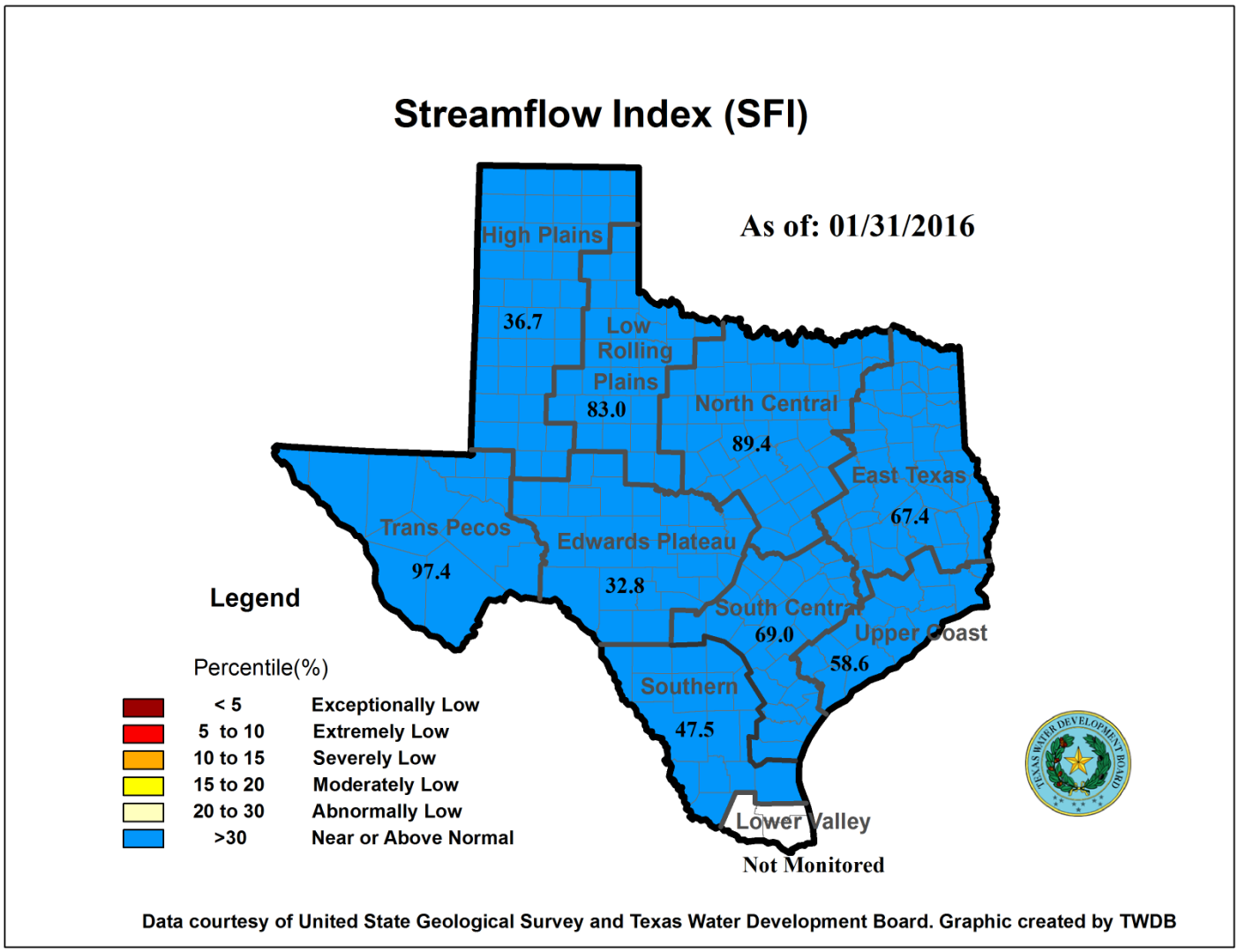
*Percent of combined conservation storage capacity of 114 major water supply reservoirs by sub-basin (dead pools are excluded)

JANUARY STREAMFLOW CONDITIONS

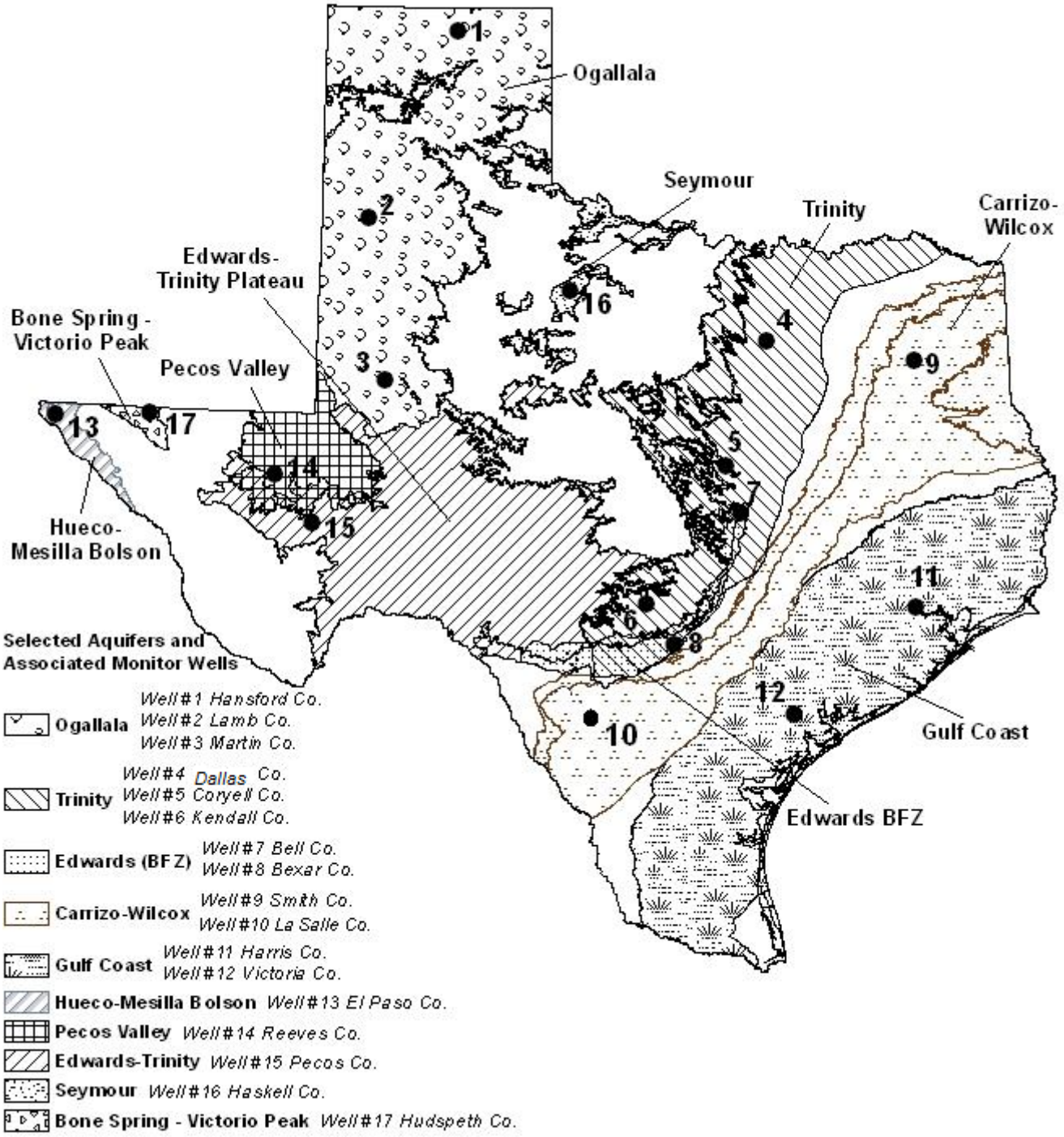
The computed 30-day mean flow status for 29 reporting index stations monitored this month is presented below:

Flow Status	Number of Stations
Normal to High (>30%)	25
Abnormally Low (20-30%)	0
Moderately Low (15-20%)	1
Severely Low (10-15%)	1
Extremely Low (5-10%)	0
Exceptionally Low (<5%)	2

Flows went up at five index stations and down at 23 stations. On a regional basis, flows in this month at index stations were near or above normal in all nine regions. Streamflow in the Lower Valley region is not monitored.



JANUARY 2016 GROUNDWATER LEVELS IN OBSERVATION WELLS



January 2016

Water-level measurements were available for all of 17 key monitoring wells in the state. Water levels rose in 10 monitoring wells since the beginning of January, ranging from 0.01 feet in the Bell County Edwards (BFZ) Aquifer well to 6.55 feet in the Pecos County Edwards-Trinity (Plateau) Aquifer well. Water levels declined in seven monitoring wells, ranging from -0.07 feet in the Martin County Ogallala Aquifer well to -2.52 feet in the LaSalle County Carrizo-Wilcox Aquifer well. The J-17 well in San Antonio recorded a water level of 64.41 feet below land surface or 666.59 feet above mean sea level. There are no restrictions currently in place for the San Antonio portion of the Edwards BFZ, with water levels at 6.81 feet above Stage I critical management levels.

***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.**

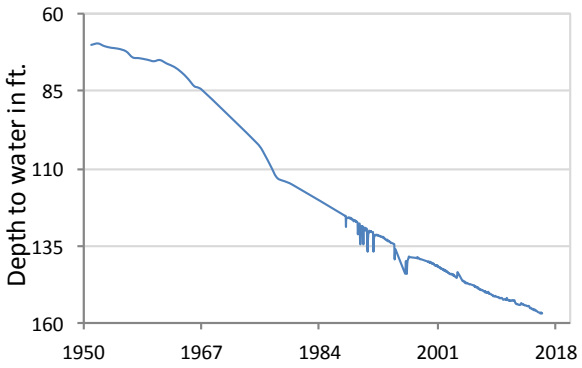
Water-level changes by month, year, and historical period-of-record in key monitoring wells in Texas

Monitoring Well	January 2016	December 2015	Month Change	Year Change	Historical Change	First Measured
(1) Hansford 0354301	156.68	156.77	0.09	-1.15	-86.56	1951
(2) Lamb 1053602	146.29	146.38	-0.09	-1.3	-118.23	1951
(3) Martin 2739903	142.32	142.39	-0.07	0.35	-37.5	1964
(4) Dallas 3319101	495.87	496.2	-0.33	-5.82	-274.2	1954
(5) Coryell 4035404	507.72	506.11	1.61	-3.31	-214.11	1955
(6) Kendall 6802609	122.57	117.26	5.31	15.59	-57.26	1975
(7) Bell 5804816	119.34	119.33	0.01	5.65	3.8	2008
(8) Bexar 6837203	64.11	64.41	-0.3	21.3	-17.77	1932
(9) Smith 3430907	434.55	434.18	0.37	1.32	-68.18	1987
(10) La Salle 7738103	472.14	474.66	-2.52	23.55	-221.59	2003
(11) Harris 6514409	189.37	189.27	0.1	0.96	-53.77*	1956
(12) Victoria 8017502	35.14	35.28	-0.14	1.67	-1.28	1958
(13) El Paso 4913301	295.65	295.9	-0.25	-0.32	-64	1964
(14) Reeves 4644501	154.46	152.89	1.57	-1.73	-60.8	1952
(15) Pecos 5216802	193.38	186.83	6.55	5.36	60.5	1976
(16) Haskell 2135748	47.13	46.89	0.24	1.87	-5.56	2002
(17) Hudspeth 4807516	138.06	135.21	2.85	-0.76	-31.29	1966

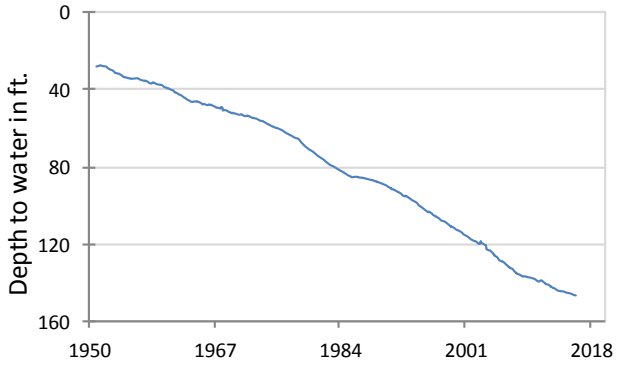
*change since the original measurement of 135.5 feet below land surface in 1947 (measurement not shown on the hydrograph)

JANUARY GROUNDWATER LEVELS IN OBSERVATION WELLS

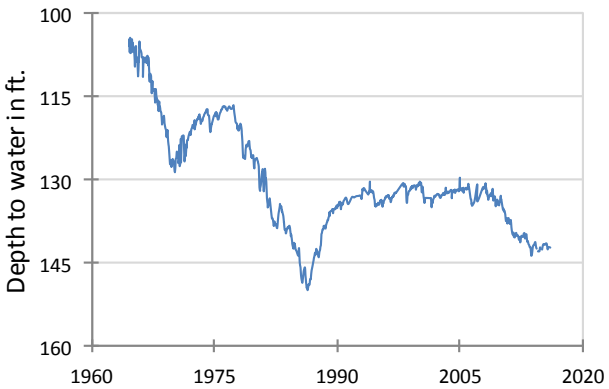
(1) State Well ID 03-54-301
Near Spearman, Hansford County
Ogallala Aquifer



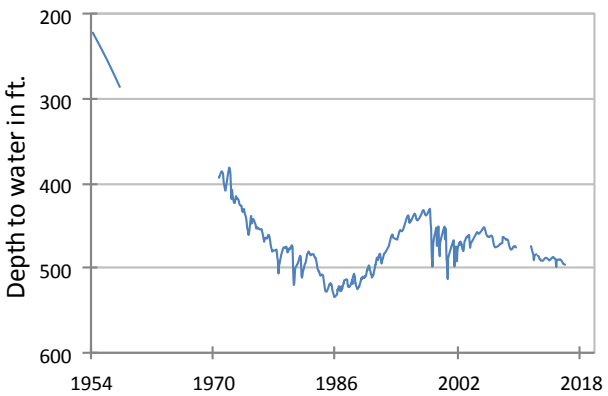
(2) State Well ID 10-53-602
Near Earth, Lamb County
Ogallala Aquifer



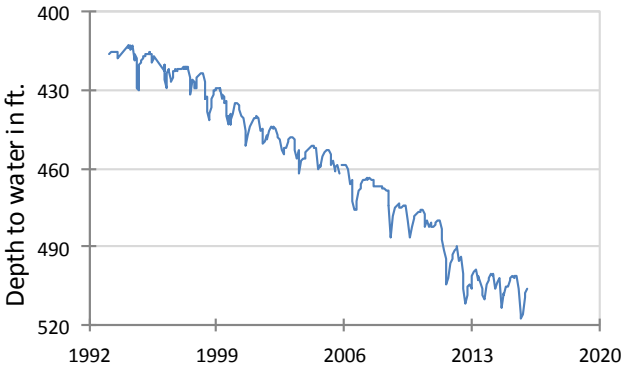
(3) State Well ID 27-39-903
Northwest Martin County
Ogallala Aquifer



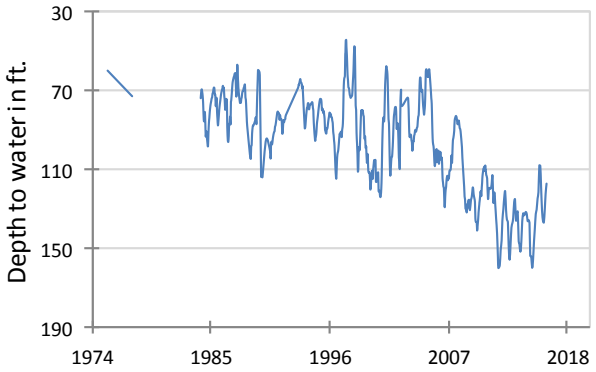
(4) State Well ID 33-19-101
Southeast Dallas, Dallas County
Twin Mountains Formation-Trinity Aquifer



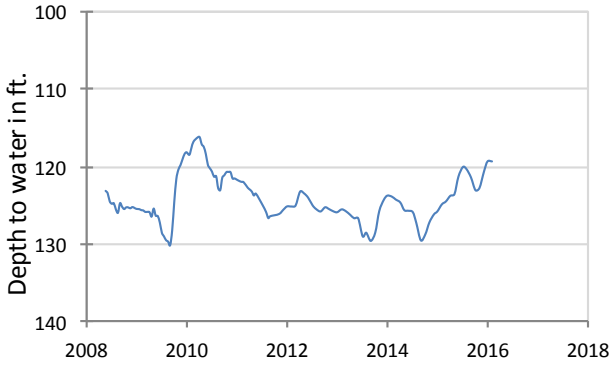
(5) State Well ID 40-35-404
Gatesville, Coryell County
Hosston Formation-Trinity Aquifer



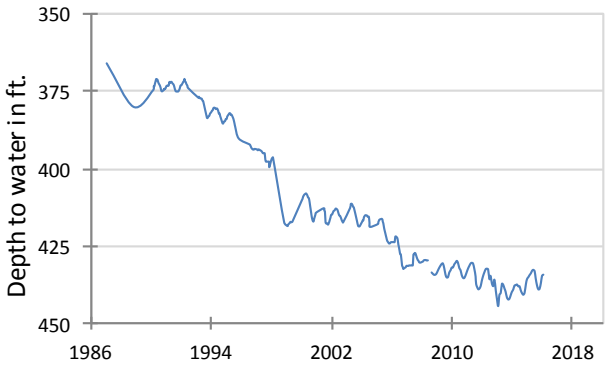
(6) State Well ID 68-02-609
Waring, Kendall County
Cow Creek Formation-Trinity Aquifer



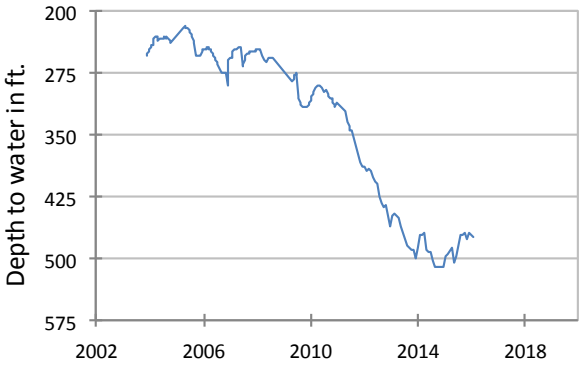
(7) State Well ID 58-04-816
Near Salado, Bell County
Edwards (BFZ) Aquifer



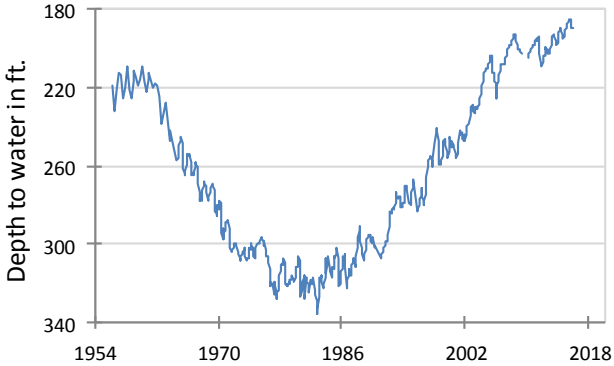
(9) State Well ID 34-30-907
Red Springs, Smith County
Carrizo-Wilcox Aquifer



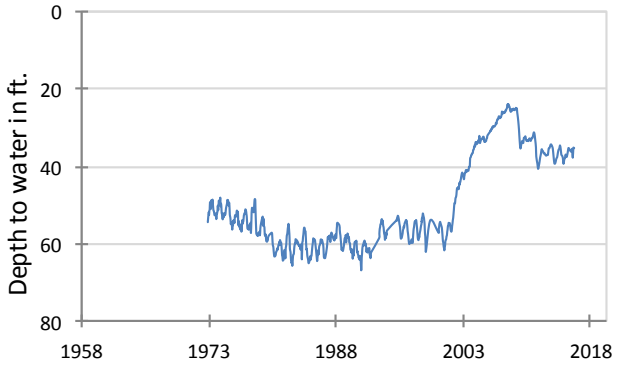
(10) State Well ID 77-38-103
Near Cotulla, La Salle County
Carrizo-Wilcox Aquifer



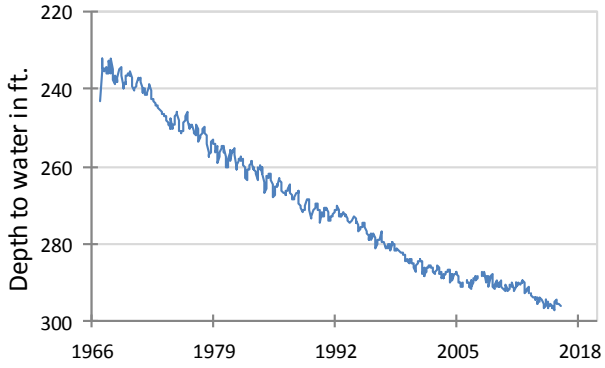
(11) State Well ID 65-14-409
Alief, Harris County
Evangeline Formation-Gulf Coast Aquifer



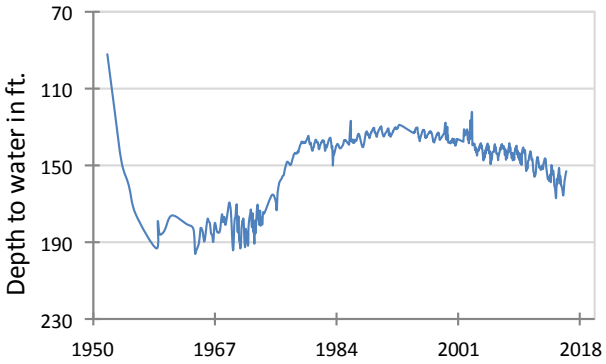
(12) State Well ID 80-17-502
Near Bloomington, Victoria County
Lissie Formation-Gulf Coast Aquifer



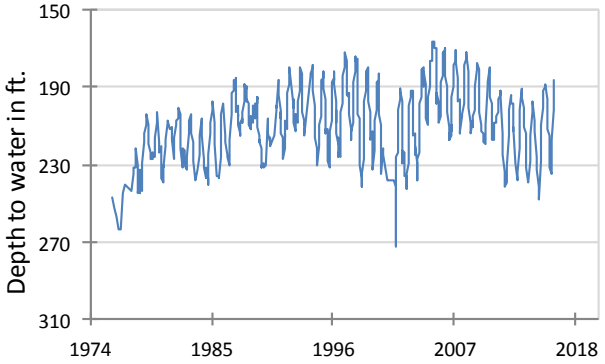
(13) State Well ID 49-13-301
El Paso, El Paso County
Hueco-Mesilla Bolson Aquifer



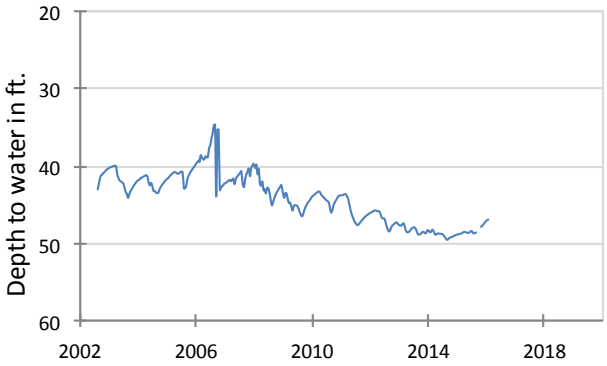
(14) State Well ID 46-44-501
Near Pecos, Reeves County
Pecos Valley Aquifer



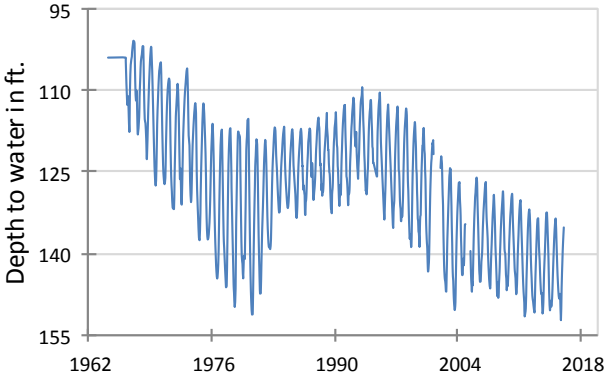
(15) State Well ID 52-16-802
Fort Stockton, Pecos County
Edwards-Trinity (Plateau) Aquifer



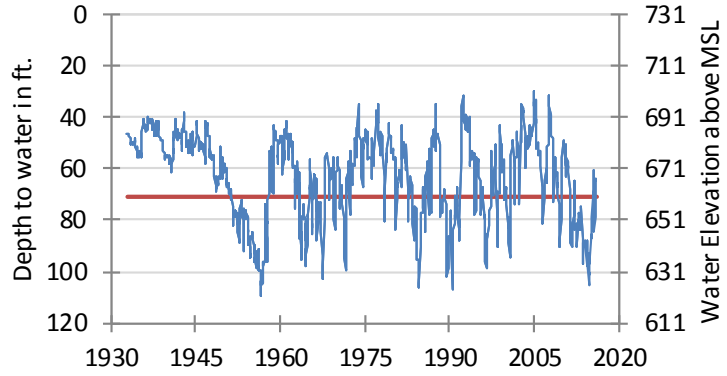
(16) State Well ID 21-35-748
Near O'Brien, Haskell County
Seymour Aquifer

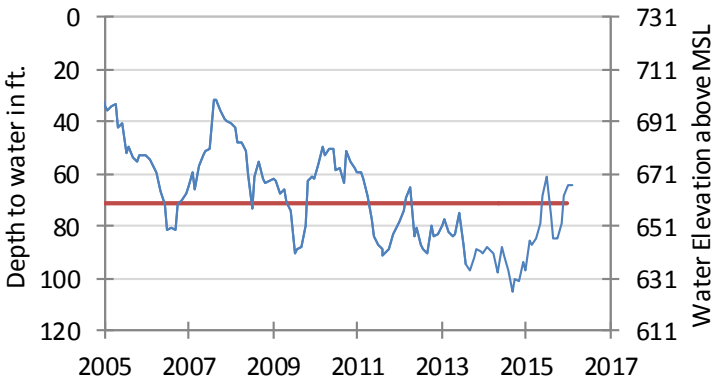


(17) State Well ID 48-07-516
Dell City, Hudspeth County
Bone Spring - Victorio Peak Aquifer



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

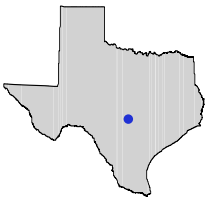




The late January water-level measurement in this Edwards (BFZ) Aquifer well, elevation 731 feet above mean sea level, was 64.41 feet below land surface, or 666.59 feet above mean sea level. This was -0.3 feet below last month's measurement, 21.3 feet above last year's measurement, and 17.77 feet below 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.**

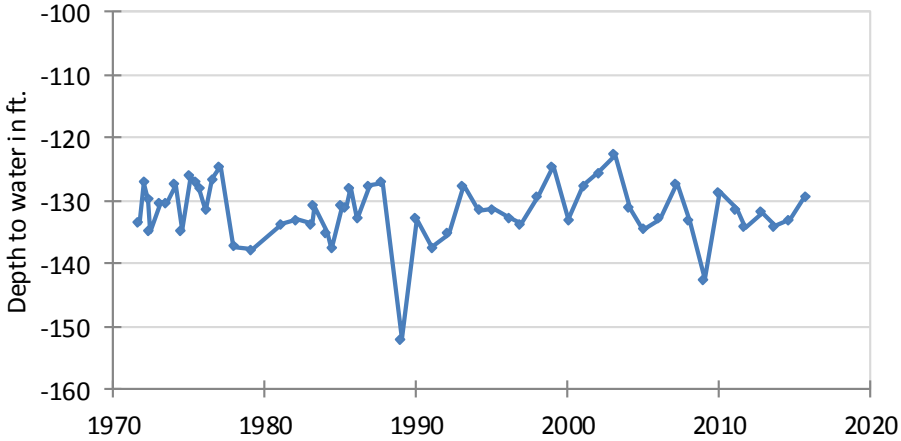
HYDROGRAPH OF THE MONTH



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

Edwards (Balcones Fault Zone) Aquifer

Well # 6701305, 500 feet deep
domestic, eastern Hays County



The Edwards (Balcones Fault Zone) Aquifer is a major aquifer in the south-central part of Texas. It consists primarily of partially dissolved limestone that creates a highly permeable aquifer. Aquifer thickness ranges from 200 to 600 feet, and freshwater saturated thickness averages 560 feet in the southern part of the aquifer. The groundwater, although hard, is generally fresh and contains less than 500 milligrams per liter of total dissolved solids. Water from the aquifer is primarily used for municipal, irrigation, and recreational purposes. The majority of San Antonio's water supply comes from the Edwards (Balcones Fault Zone) Aquifer. Several well- known springs are fed from the aquifer including Comal Springs in Comal County, which is the largest spring in the state, and San Marcos Springs in Hays County which is the second largest. Because of the aquifer's highly permeable nature, water levels and spring flows respond quickly to rainfall, drought, and pumping.

TWDB has been measuring this well every year since the initial measurement of 133.53 below land surface in 1971. Historically, the water level has remained relatively stable with minor fluctuations of 10 feet, which is typically experienced by many Edwards (BFZ) Aquifer wells. A larger decline in 1989, when the water level reached an historic low of 152.03 feet below land surface, may reflect a dry spell or a measurement taken when the water level had not fully recovered from pumping.