Texas Water Conditions Report

Texas Water Development Board

December 2018

RAINFALL

Rainfall is the primary source influencing water conditions in Texas. Observations from the National Oceanic and Atmospheric Administration – National Weather Service (NOAA-NWS) for December indicate that total rainfall in December [Figure 1(a)] for much of Texas, except for the East Texas, Upper Coast and South Central climate divisions, was above normal [Figure 1(b)], as compared to historical data from 1981–2010. A narrow swath of the state extending from the North Central climate division to the Edwards Plateau and the southwestern region of the Tran Pecos climate division Trans Pecos climate division had much above-normal rainfall [deep blue and purple, Figure 1(b)]. Only isolated areas in the High Plains, Trans Pecos, southern regions of the South Central climate division, and the Lower Valley had below normal rainfall [warm colors, Figure 1(b)].

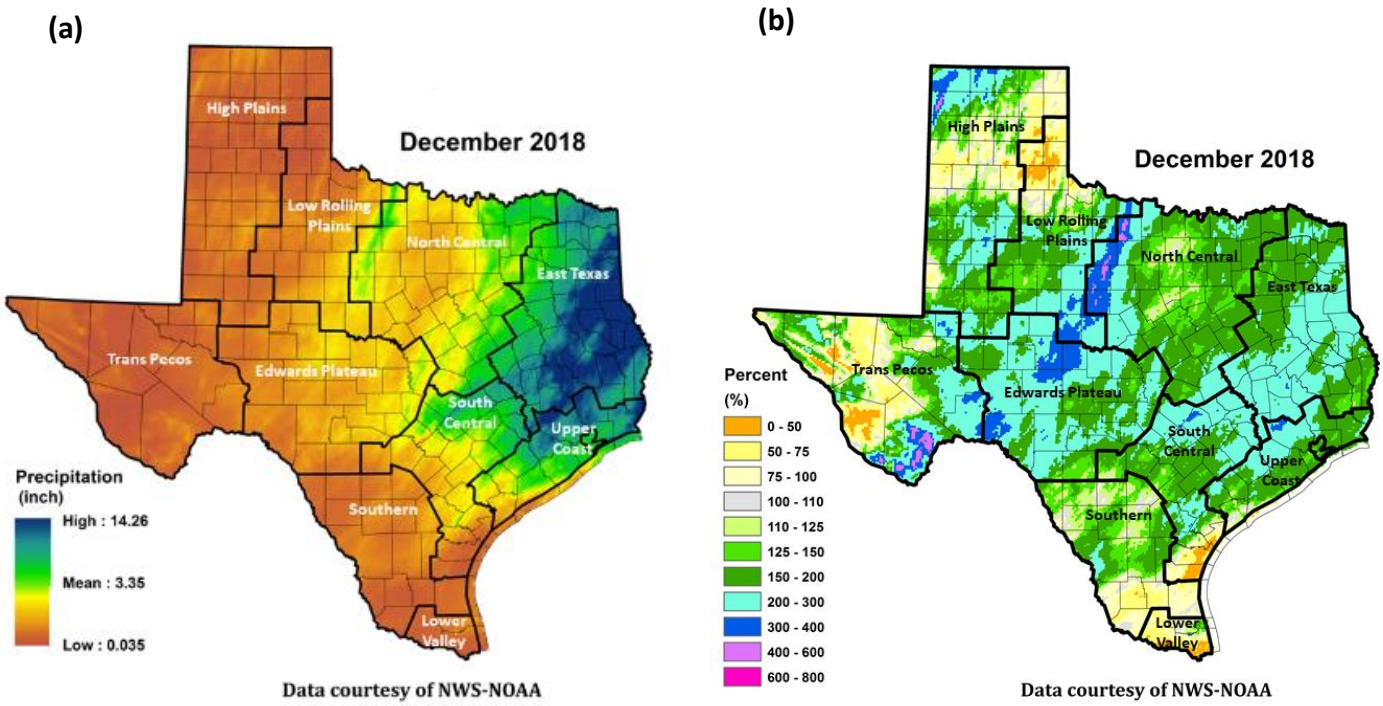

Figure 1: (a) Monthly accumulated rainfall, and (b) Percent of normal rainfall for December 2018

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RESERVOIR STORAGE

At the end of December 2018, total conservation storage* in 118 of the state's major water supply reservoirs plus Elephant Butte Reservoir in New Mexico was 28.21 million acre-feet or 88 percent of total conservation storage capacity (Figure 2). This is approximately 0.24 million acre-feet more than a month ago and 5 million acre-feet more than this time a year ago, continuing an increasing trend that began in September.

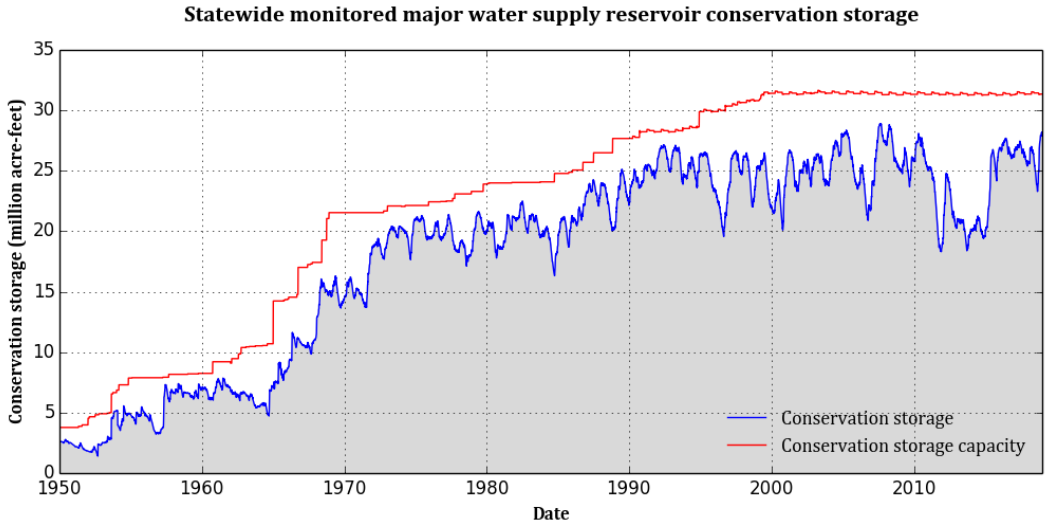

Figure 2: Statewide reservoir conservation storage

Out of 118 reservoirs in the state, 86 reservoirs held 100 percent of conservation storage capacity (Figure 3). Additionally, 9 were above 90 percent full. These high storage reservoirs are in the North, Central, and East Texas regions. However, Palo Duro Reservoir was only 1 percent full and another five reservoirs [Mackenzie (12 percent full), O. C. Fisher (14 percent full), White River (16 percent full) Greenbelt (20 percent full), and E. V. Spence (27 percent full)] remained below 30 percent full. There were 19 reservoirs with low storage (below 70 percent full) located in the Panhandle, West, and South Texas regions. Elephant Butte Reservoir (located in New Mexico) was only 6 percent full.

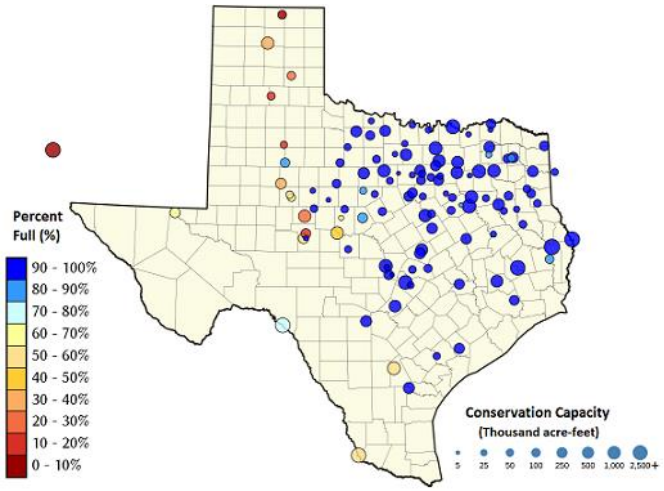

Figure 3: Reservoir conservation storage expressed as percent full (%)

*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.

Total regionally-combined conservation storage was at or above-normal (storage ≥70 percent full) in the Upper Coast (100 percent full), East Texas (99 percent full), North Central (100 percent full), South Central (100 percent full), and Low Rolling Plains (76 percent full) regions (Figure 3). The High Plains (32 percent full) and Trans-Pecos (15 percent full) regions had the lowest storage. Combined conservation storage by river basin or sub-basin depicts a similar picture (Figure 4). Storage in all basins/sub-basins are normal to high (>70 percent full), except the Upper/Mid Rio Grande, which was ranked as extremely low, the Canadian River basin, which was ranked as severely low, the Upper Colorado, the Lower Rio Grande, which were ranked as moderately low, and the Nueces, which was ranked as abnormally low.

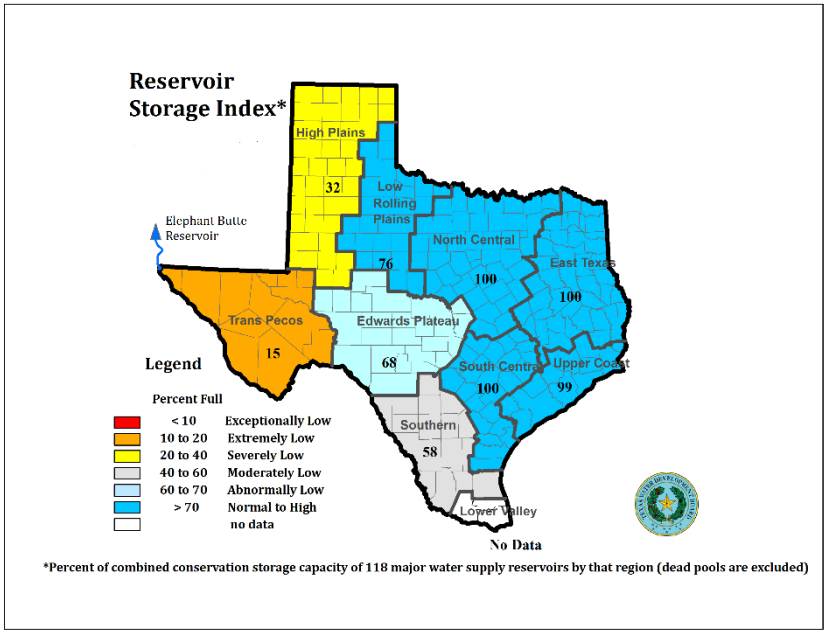

Figure 3: Reservoir Storage Index by climate division at 12/31/2018

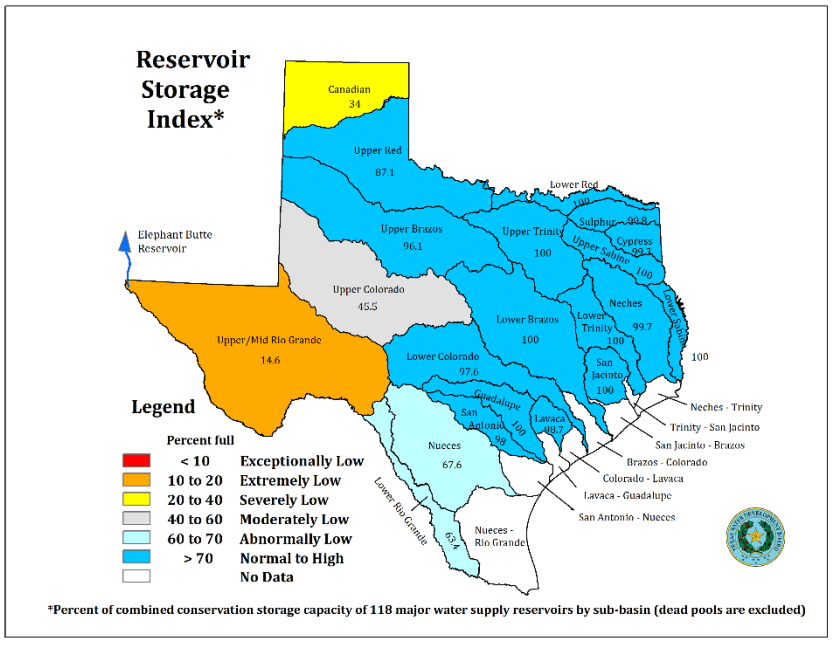

Figure 4: Reservoir Storage Index by river basin/sub-basin at 12/31/2018

*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	Storage capacity (acre-feet)	Storage at end-December 2018 (acre-feet)	(%)	Storage change from end-November 2018 (acre-feet)	(%)	Storage change from end-December 2017 (acre-feet)**	(%)
HIGH PLAINS							
Mackenzie Reservoir	46,450	5,789	12	-57	0	-1,043	-2
Meredith, Lake	500,000	190,515	38	-639	0	-12,460	-2
Palo Duro Reservoir	61,066	400	1	-8	0	-320	-2
White River Lake	29,880	4,827	16	-13	0	-1,107	-4
TOTAL	**637,396**	**201,531**	**32**	**-717**	**0**	**-14,930**	**-2**
LOW ROLLING PLAINS							
Abilene, Lake	7,900	7,900	100	0	0	3,121	40
Alan Henry Reservoir	96,207	83,901	87	-843	-1	1,445	2
Champion Creek Reservoir	41,580	28,980	70	-33	0	9,520	23
Coleman, Lake	38,075	38,075	100	252	1	4,273	11
Colorado City, Lake	30,758	15,557	51	-74	0	3,113	10
Fort Phantom Hill, Lake	70,030	70,030	100	0	0	6,770	10
Greenbelt Lake	59,968	12,250	20	-21	0	-2,932	-5
Hords Creek Lake	8,443	5,584	66	187	2	167	2
J. B. Thomas, Lake	199,931	74,058	37	-1,305	-1	-22,750	-11
Kemp, Lake	245,307	245,307	100	0	0	22,258	9
Millers Creek Reservoir	26,768	26,768	100	0	0	2,132	8
North Fork Buffalo Creek Reservoir	15,400	15,400	100	67	0	3,962	26
Stamford, Lake	51,570	51,570	100	0	0	2,944	6
Sweetwater, Lake	12,267	12,267	100	0	0	9,874	80
TOTAL	**904,204**	**687,647**	**76**	**-1,770**	**0**	**43,897**	**5**
EAST							
Athens, Lake	29,503	29,503	100	0	0	276	1
B A Steinhagen Lake	66,961	55,538	83	-5,331	-8	-8,290	-12
Bob Sandlin, Lake	190,822	190,822	100	0	0	7,101	4
Caddo, Lake	29,898	29,898	100	0	0	0	0
Cedar Creek Reservoir in Trinity	644,686	644,686	100	327	0	62,369	10
Cherokee, Lake	40,094	40,094	100	0	0	0	0
Conroe, Lake	410,988	410,988	100	0	0	0	0
Cypress Springs, Lake	66,756	66,756	100	0	0	3,165	5
Fork Reservoir, Lake	605,061	605,061	100	15,713	3	26,749	4
Houston County Lake	17,113	17,113	100	0	0	0	0
Jacksonville, Lake	25,670	25,670	100	0	0	0	0
*Livingston, Lake	1,785,348	1,785,348	100	719	0	0	0
Martin, Lake	75,726	75,726	100	0	0	12,935	17
Monticello, Lake	34,740	30,856	89	1,011	3	-3,376	-10
Murvaul, Lake	38,285	38,285	100	0	0	445	1
Nacogdoches, Lake	39,522	39,522	100	501	1	3,152	8
O' the Pines, Lake	241,363	241,363	100	0	0	0	0
Palestine, Lake	367,303	367,303	100	0	0	0	0
Sam Rayburn Reservoir	2,857,077	2,857,077	100	0	0	303,862	11
Striker, Lake	16,934	16,934	100	0	0	0	0
*Sulphur Springs, Lake	17,747	16,890	95	2,109	12	-857	-5
Toledo Bend Reservoir (Texas)	2,236,450	2,236,450	100	131,560	6	338,414	15
Toledo Bend Reservoir (Texas & Louisiana)	4,472,900	4,633,384	100	419,504	9	833,212	19
Tyler, Lake	72,073	72,073	100	0	0	0	0
Wright Patman Lake	122,593	122,593	100	0	0	0	0
TOTAL	**10,032,713**	**10,016,549**	**100**	**146,609**	**1**	**745,945**	**7**

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS							
Name of lake or reservoir	Storage capacity (acre-feet)	Storage at end-December 2018 (acre-feet)	(%)	Storage change from end-November 2018 (acre-feet)	(%)	Storage change from end-December 2017 (acre-feet)**	(%)
NORTH CENTRAL							
Amon G Carter, Lake	19,266	19,266	100	0	0	85	0
Aquilla Lake	43,243	43,243	100	0	0	7,183	17
Arlington, Lake	40,188	40,188	100	96	0	6,606	16
Arrowhead, Lake	230,359	230,359	100	1,881	1	32,797	14
Bardwell Lake	46,122	46,122	100	0	0	6,253	14
Belton Lake	435,225	435,225	100	0	0	34,168	8
Benbrook Lake	85,648	85,648	100	0	0	8,742	10
Bonham, Lake	11,027	11,027	100	116	1	868	8
Bridgeport, Lake	366,236	366,236	100	1,630	0	44,619	12
*Brownwood, Lake	128,839	128,839	100	0	0	20,185	16
*Cisco, Lake	29,003	24,540	85	1,020	4	495	2
Crook, Lake	9,195	9,195	100	83	1	42	0
Eagle Mountain Lake	179,880	179,880	100	344	0	12,674	7
Georgetown, Lake	36,823	36,823	100	0	0	11,867	32
Graham, Lake	45,288	45,288	100	0	0	2,127	5
Granbury, Lake	132,949	131,079	99	-1,788	-1	404	0
Granger Lake	51,822	51,822	100	0	0	0	0
Grapevine Lake	164,703	164,703	100	0	0	3,048	2
*Halbert, Lake	6,033	5,736	95	369	6	191	3
Hubbard Creek Reservoir	313,298	313,298	100	784	0	39,214	13
Hubert H Moss Lake	24,058	24,058	100	151	1	2,029	8
Jim Chapman Lake (Cooper)	260,332	260,332	100	356	0	22,766	9
Joe Pool Lake	175,358	175,358	100	0	0	5,240	3
Kickapoo, Lake	86,345	86,345	100	0	0	13,046	15
Lavon Lake	406,388	406,388	100	0	0	50,908	13
Leon, Lake	27,762	27,762	100	297	1	4,439	16
Lewisville Lake	563,228	563,228	100	0	0	37,938	7
Limestone, Lake	203,780	203,780	100	496	0	44,673	22
*Lost Creek Reservoir	11,950	11,950	100	9	0	365	3
*Mineral Wells, Lake	5,273	5,273	100	0	0	693	13
Mountain Creek, Lake	22,850	22,850	100	0	0	0	0
Navarro Mills Lake	49,827	49,827	100	0	0	8,691	17
New Terrell City Lake	8,583	8,583	100	0	0	739	9
Nocona, Lake (Farmers Crk)	21,444	21,444	100	0	0	2,201	10
Palo Pinto, Lake	26,766	26,766	100	0	0	4,667	17
Pat Cleburne, Lake	26,008	26,008	100	0	0	4,266	16
*Pat Mayse Lake	113,683	113,683	100	0	0	no data	
Possum Kingdom Lake	538,139	528,005	98	-8,524	-2	12,593	2
Proctor Lake	54,762	54,762	100	0	0	12,266	22
Ray Hubbard, Lake	439,559	439,141	100	-418	0	17,032	4
Ray Roberts, Lake	788,167	788,167	100	0	0	33,020	4
Richland-Chambers Reservoir	1,087,839	1,087,839	100	0	0	108,277	10
Squaw Creek, Lake	151,250	151,250	100	0	0	0	0
Stillhouse Hollow Lake	227,771	227,771	100	0	0	21,488	9
Tawakoni, Lake	871,685	871,685	100	0	0	22,719	3
Texoma, Lake (Texas)	1,258,113	1,258,113	100	0	0	0	0
Texoma, Lake (Texas & Oklahoma)	2,525,281	2,798,498	100	166,985	7	228,076	9
Waco, Lake	189,418	189,418	100	0	0	28,480	15
Waxahachie, Lake	10,780	10,780	100	0	0	1,714	16

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS							
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NORTH CENTRAL *continued*							
Weatherford, Lake	17,812	17,812	100	228	1	2,285	13
Whitney, Lake	553,344	553,344	100	4,086	1	94,212	17
Worth, Lake	33,495	33,495	100	1,226	4	4,519	13
TOTAL	**10,630,916**	**10,613,734**	**100**	**2,442**	**0**	**792,834**	**7**
TRANS-PECOS							
Elephant Butte Reservoir (Texas)	852,491	49,463	6	10,998	1	-132,570	-16
Elephant Butte Reservoir (Total Storage)	1,973,358	114,498	6	25,458	1	-306,874	-16
Red Bluff Reservoir	151,110	97,027	64	2,754	2	-13,967	-9
TOTAL	**1,003,601**	**146,490**	**15**	**13,752**	**1**	**-146,537**	**-15**
EDWARDS PLATEAU							
*Amistad Reservoir (Texas)	1,840,849	1,350,527	73	31,616	2	-42,611	-2
*Amistad Reservoir (Texas & Mexico)	3,275,532	1,924,805	59	46,181	1	-75,446	-2
Brady Creek Reservoir	28,808	28,808	100	0	0	12,817	44
Buchanan, Lake	860,607	825,162	96	5,870	1	61,296	7
E. V. Spence Reservoir	517,272	138,429	27	3,136	1	72,750	14
Inks, Lake	13,962	13,013	93	31	0	68	0
Lyndon B Johnson, Lake	115,249	100,845	88	-8,091	-7	-9,975	-9
Marble Falls, Lake	6,901	5,984	87	-771	-11	-809	-12
Nasworthy	9,615	8,682	90	-38	0	1,009	10
Oak Creek Reservoir	39,210	39,210	100	0	0	19,891	51
O. C. Fisher Lake	119,445	17,308	14	-20	0	5,241	4
*O. H. Ivie Reservoir	554,340	267,211	48	15,243	3	158,954	3
Twin Buttes Reservoir	182,454	103,940	57	9,969	5	90,815	50
TOTAL	**4,288,712**	**2,899,119**	**68**	**56,945**	**1**	**369,446**	**9**
SOUTH CENTRAL							
*Austin, Lake	23,972	22,926	96	-139	-1	92	0
Canyon Lake	378,781	378,781	100	0	0	27,259	7
*Coleto Creek Reservoir	31,040	31,040	100	0	0	2,322	7
Medina Lake	254,823	249,693	98	9,334	4	80,171	31
Somerville Lake	147,104	147,104	100	0	0	0	0
Travis, Lake	1,113,348	1,113,348	100	0	0	208,899	19
TOTAL	**1,949,068**	**1,942,892**	**100**	**9,195**	**0**	**318,743**	**16**
UPPER COAST							
Houston, Lake	120,686	120,686	100	0	0	0	0
Texana, Lake	159,566	157,458	99	-1,189	-1	16,638	10
TOTAL	**280,252**	**278,144**	**99**	**-1,189**	**0**	**16,638**	**6**
SOUTHERN							
Choke Canyon Reservoir	662,820	364,693	55	1418	0	161853	24
Corpus Christi, Lake	256,062	256,062	100	0	0	10578	4
*Falcon Reservoir (Texas)	1,551,007	799,992	52	16,823	1	-43220	-3
*Falcon Reservoir (Texas & Mexico)	2,646,817	1,188,210	45	46,042	2	-262515	-10
TOTAL	**2,469,889**	**1,420,747**	**58**	**18,241**	**1**	**129,211**	**5**
STATEWIDE TOTOL							
STATEWIDE TOTAL	**32,196,751**	**28,206,853**	**88**	**243,508**	**1**	**2,255,247**	**7**

* Total volume below elevation of conservation pool top is used as conservation storage capacity, because the dead pool storage is unknown.

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

^ Estimated values. Real-time storage values are not available for certain federally operated reservoirs due to the ongoing Federal Government shutdown.

Note:

Conservation storage capacity is the space available to store water above the lowest outlet and below the top of the 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 the 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.

STREAMFLOW CONDITIONS

Daily streamflow percentiles* for 29 stream gauges, minimally impacted by development, is presented in Figure 6 (below). Daily streamflow was in the 90th percentile or greater at 12 stream gauges and at or below the 20th percentile at four stream gauges.

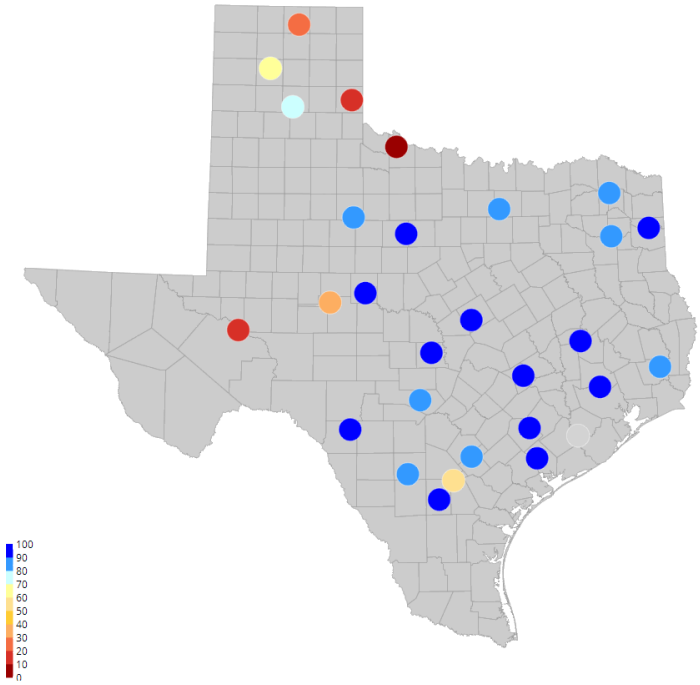
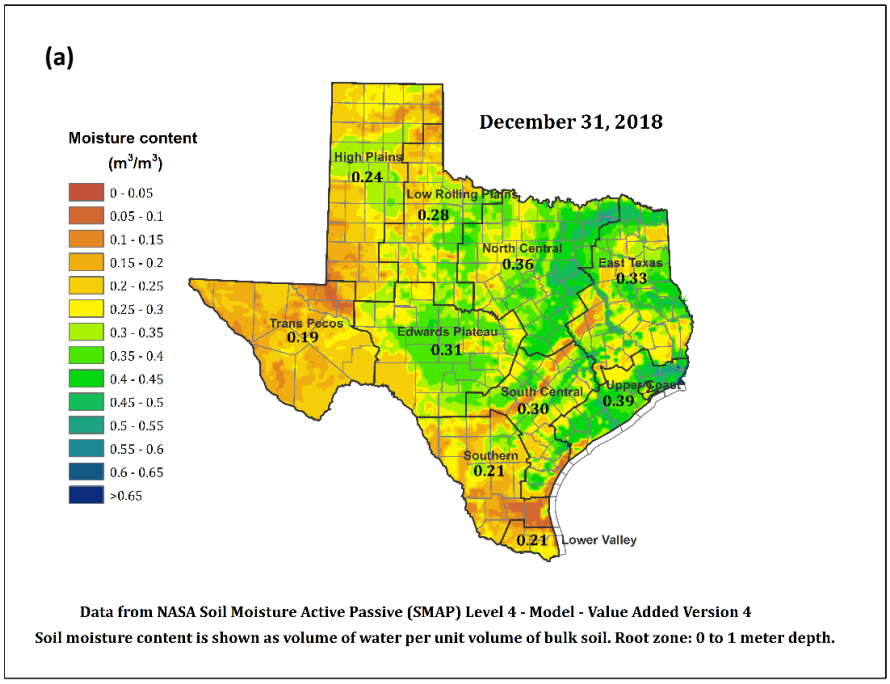


Figure 6: Daily streamflow percentile at 12/31/2018

*A 30-day moving average flow is calculated from the historical mean daily flow records. For each day, the 30-day average flow is presented as a percentile of the historical record for that calendar day.

SOIL MOISTURE CONDITIONS

Soil moisture at the end of December 2018 **[**Figure 7(a)] was mostly moderate [> 0.20 cubic meters of water per bulk cubic meter soil (m^3/m^3)] in all climate divisions of the state except the Trans Pecos where the area averaged soil moisture was 0.19 m^3/m^3. On a regional basis, and compared to conditions at the end of November 2018 [Figure 7(b)], average moisture content decreased in seven climate divisions, varying from 0.01 to 0.04 m^3/m^3. The Low Rolling Plains, Trans Pecos and Southern divisions had decreases in soil moisture; whereas, the Low Rolling Plains, North Central, East Texas, South Center, and Upper Coast had increases in soil moisture. East Texas had the greatest increase of 0.04 m^3/m^3 in soil moisture.



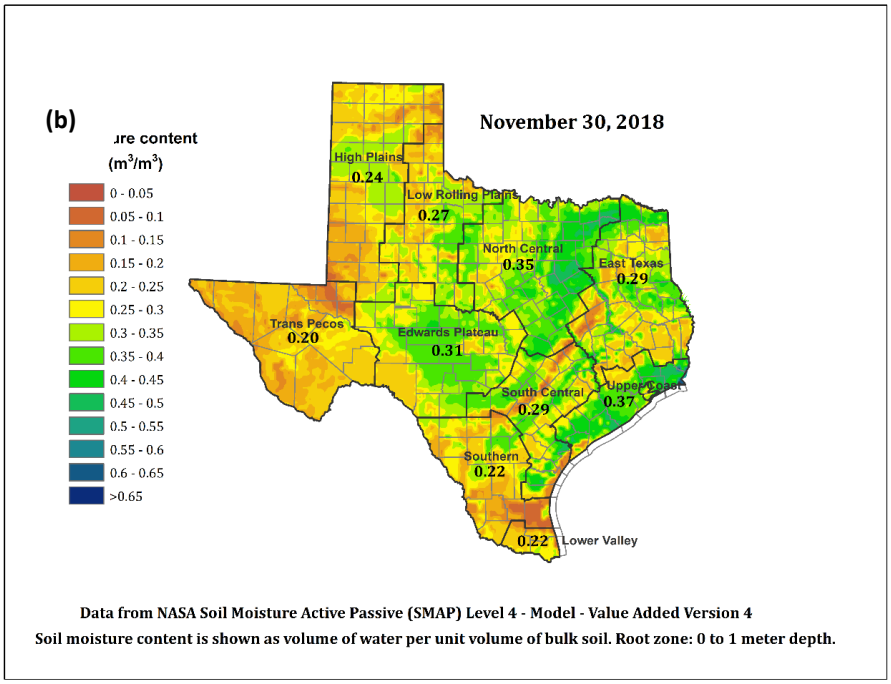
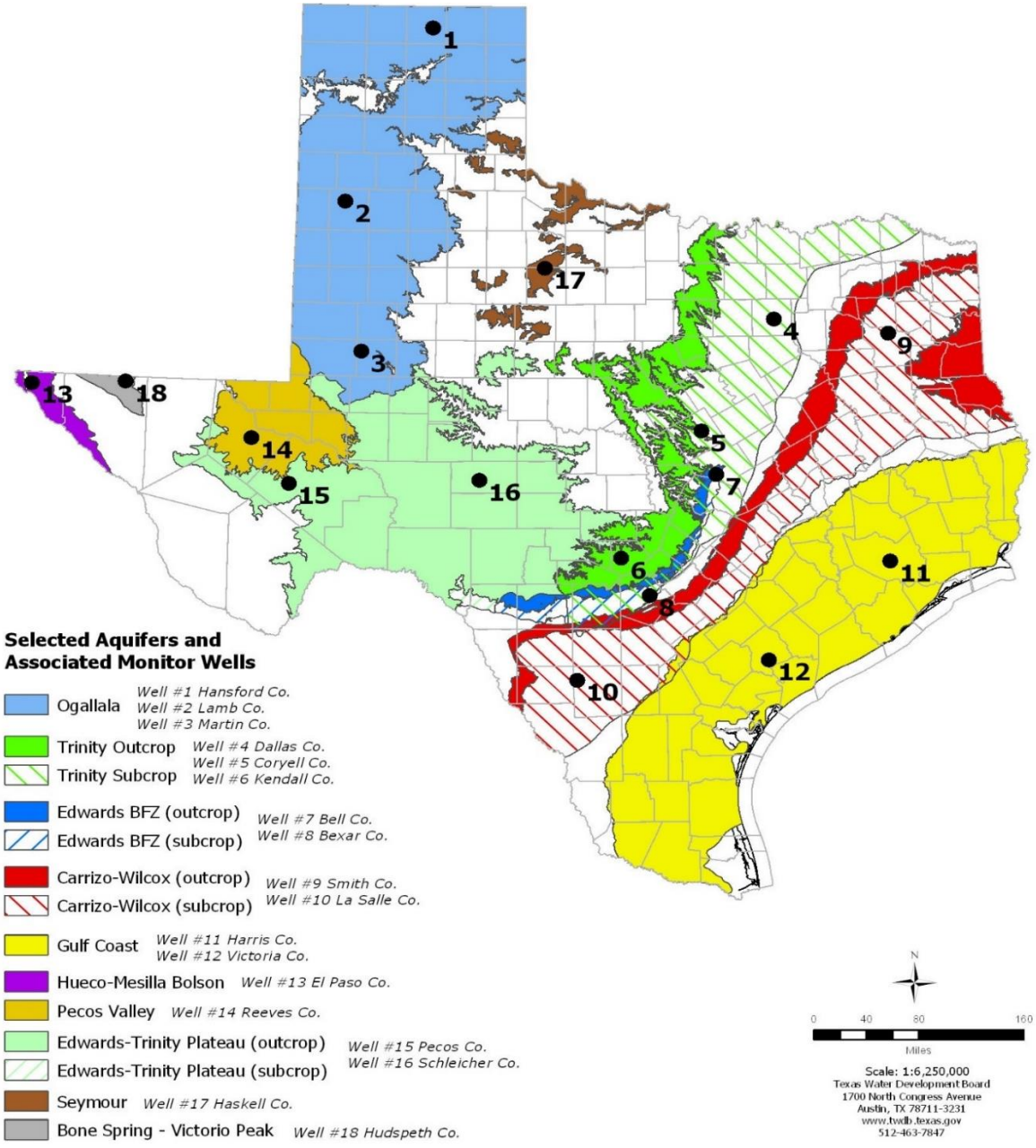


Figure 7: Root zone soil moisture conditions for December 2018 (a) and November 2018 (b)

December 2018 GROUNDWATER LEVELS IN OBSERVATION WELLS

Water-level measurements were available for all 18 key monitoring wells in the state. Water levels rose in 14 monitoring wells since the beginning of December, ranging from an increase of 0.11 feet in the Dallas County Trinity Aquifer well (#4 on map) to 11.20 feet in the La Salle County Carrizo-Wilcox Aquifer well (#10 on map). Water levels declined in 4 monitoring wells, ranging from a decline of -0.16 feet in the Lamb County Ogallala Aquifer well (#2 on map) to -3.46feet in the Schleicher County Edwards-Trinity Plateau Aquifer well (#16 on map). The J-17 well (#8 on map) in San Antonio recorded a water level of 44.81 feet below land surface or 685.79 feet above mean sea level. Water levels rose 26.19 feet above the Stage 1 critical management level for the San Antonio portion of the Edwards (Balcones Fault Zone) Aquifer.



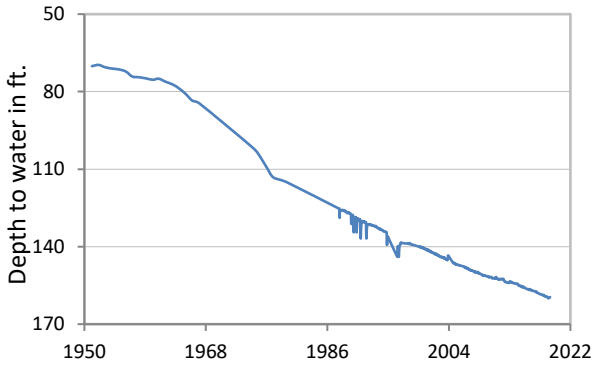
***Well numbers used in this publication on the aquifer map to indicate the monitoring well location (numbers 1 - 17) are different than the TWDB's seven-digit state well number.**

Monitoring Well	December	November	Month Change	Year Change	Historical Change	First Measured
(1) Hansford 0354301	159.52	159.81	*0.29*	*-0.68*	*-89.40*	1951
(2) Lamb 1053602	149.51	149.35	*-0.16*	*-1.40*	*-121.34*	1951
(3) Martin 2739903	144.45	143.64	*-0.81*	*-0.32*	*-39.56*	1964
(4) Dallas 3319101	498.87	498.98	*0.11*	*-4.94*	*-276.87*	1954
(5) Coryell 4035404	526.56	526.88	*0.32*	*-3.95*	*-234.56*	1955
(6) Kendall 6802609	127.70	130.13	*2.43*	*4.27*	*-67.70*	1975
(7) Bell 5804816	120.87	122.06	*1.19*	*2.91*	*2.64*	2008
(8) Bexar 6837203	44.81	46.21	*1.40*	*19.60*	*1.83*	1932
(9) Smith 3430907	435.04	436.14	*1.10*	*-3.16*	*-135.04*	1977
(10) La Salle 7738103	509.32	520.52	*11.20*	*-24.47*	*-256.25*	2003
(11) Harris 6514409	191.00	192.45	*1.45*	*1.87*	*-55.50**	1947**
(12) Victoria 8017502	34.95	35.43	*0.48*	*-3.79*	*-0.95*	1958
(13) El Paso 4913301	294.67	294.50	*-0.17*	*-0.14*	*-62.77*	1964
(14) Reeves 4644501	163.64	166.20	*2.56*	*-1.31*	*-71.55*	1952
(15) Pecos 5216802	184.97	191.71	*6.74*	*2.79*	*61.91*	1976
(16) Schleicher 5512134	265.05	261.59	*-3.46*	*43.82*	*36.85*	2003
(17) Haskell 2135748	46.17	46.37	*0.20*	*0.50*	*-3.17*	2002
(18) Hudspeth 4807516	143.17	147.02	*3.85*	*-0.91*	*-39.25*	1966

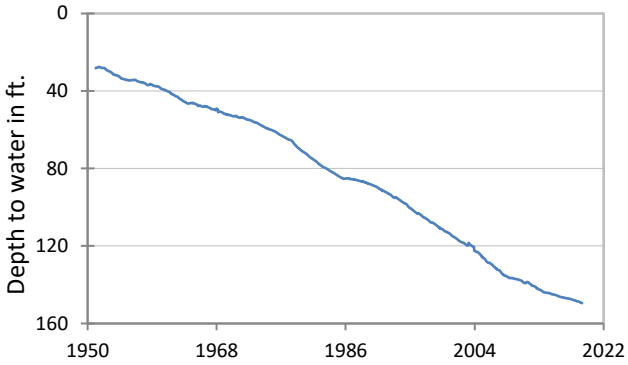
***Change since the original measurement of 135.5 feet below land surface in 1947 (**measurement not shown on the hydrograph)**

December 2018 OBSERVATION WELL HYDROGRAPHS

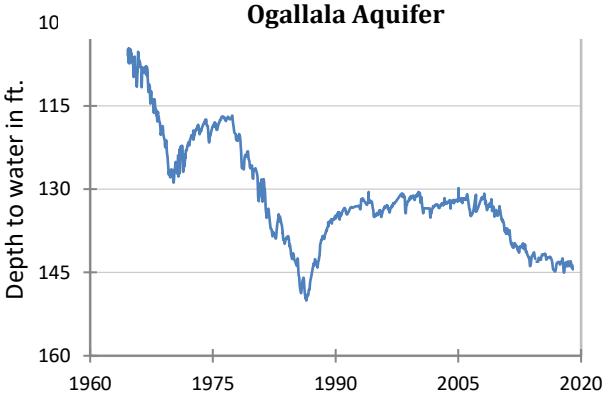
(1) State Well #03-54-301
Near Spearman, Hansford County
Ogallala Aquifer



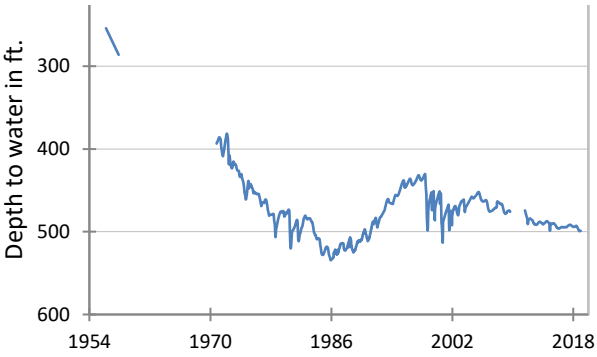
(2) State Well #10-53-602
Near Earth, Lamb County
Ogallala Aquifer



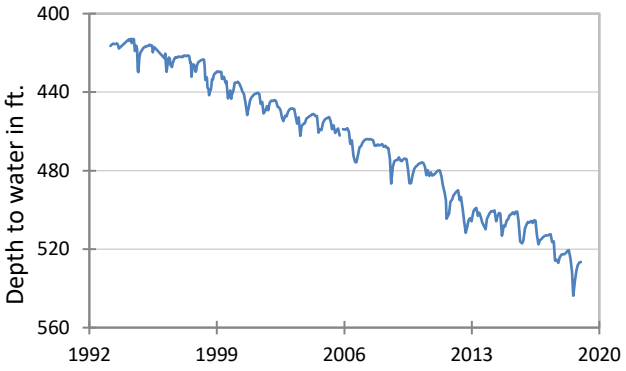
(3) State Well #27-39-903
Northwest Martin County
Ogallala Aquifer



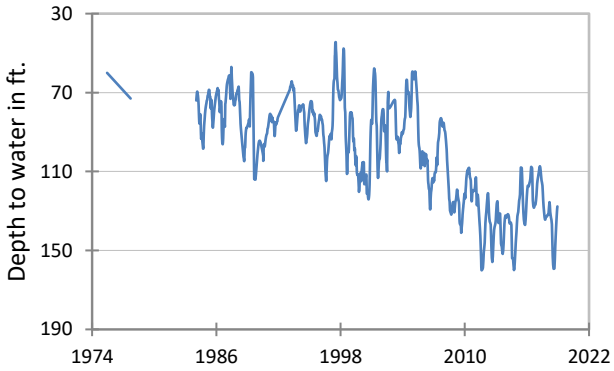
(4) State Well #33-19-101
Southeast Dallas, Dallas County
Twin Mountains Formation-Trinity Aquifer



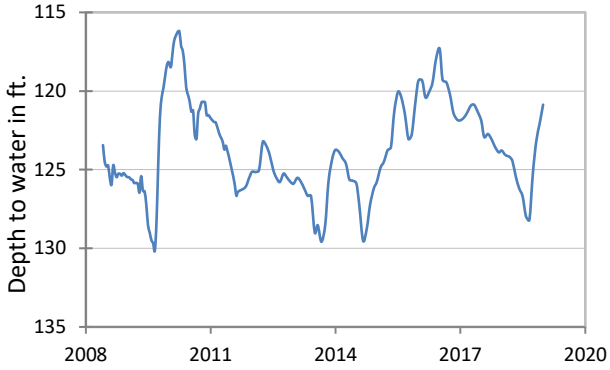
(5) State Well #40-35-404
Gatesville, Coryell County
Hosston Formation-Trinity Aquifer



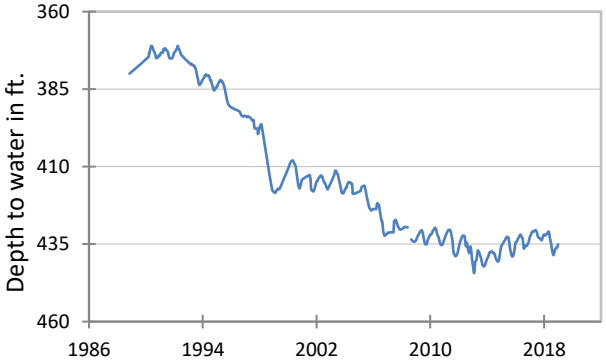
(6) State Well #68-02-609
Waring, Kendall County
Cow Creek Formation-Trinity Aquifer



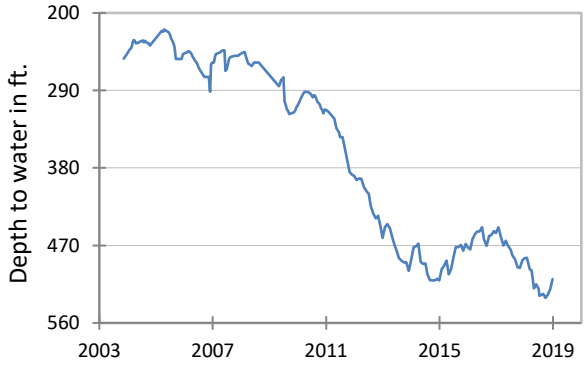
(7) State Well #58-04-816
Near Salado, Bell County
Edwards (Balcones Fault Zone) Aquifer



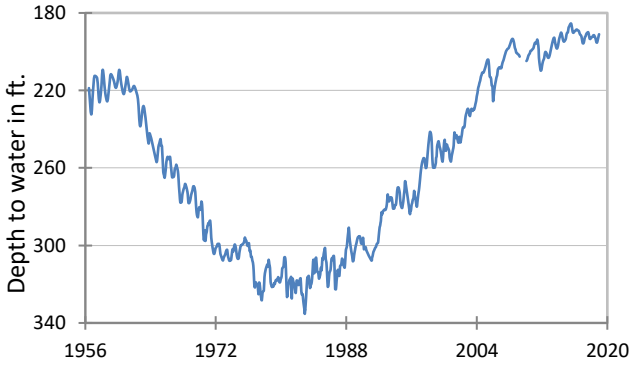
(9) State Well #34-30-907
Red Springs, Smith County
Carrizo-Wilcox Aquifer



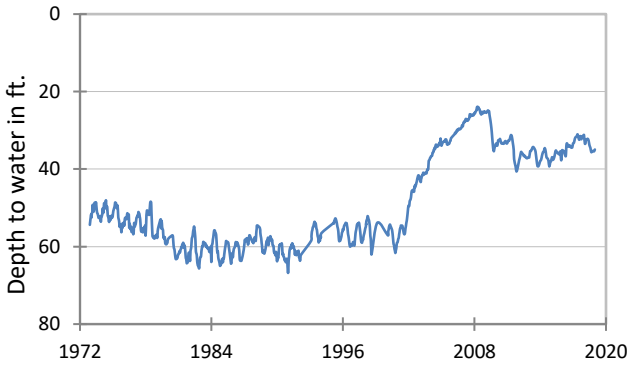
(10) State Well #77-38-103
Near Cotulla, La Salle County
Carrizo-Wilcox Aquifer



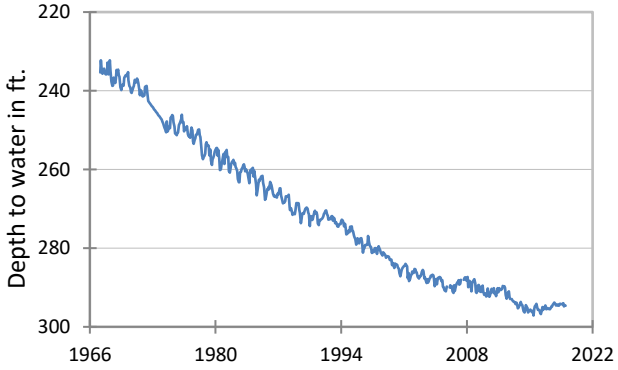
(11) State Well #65-14-409
Alief, Harris County
Evangeline Formation-Gulf Coast Aquifer



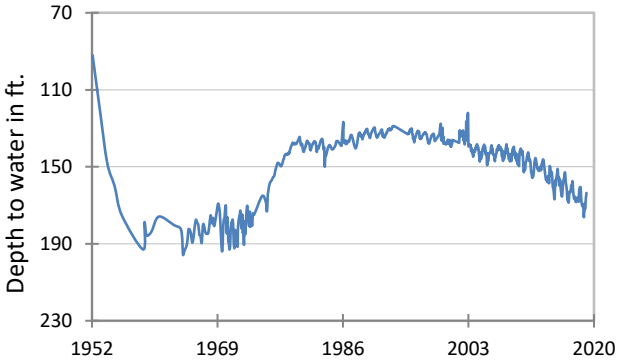
(12) State Well #80-17-502
Near Bloomington, Victoria County
Lissie Formation-Gulf Coast Aquifer



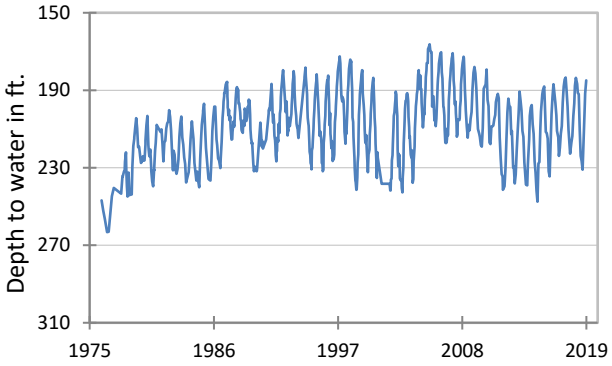
(13) State Well #49-13-301
El Paso, El Paso County
Hueco-Mesilla Bolson Aquifer



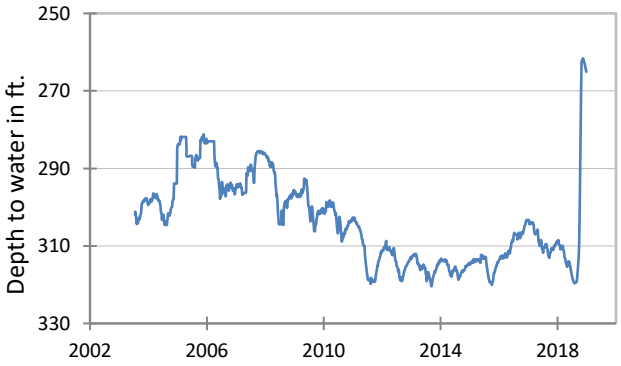
(14) State Well #46-44-501
Near Pecos, Reeves County
Pecos Valley Aquifer



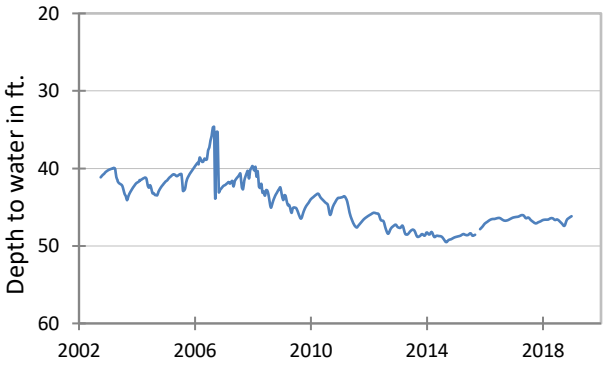
(15) State Well #52-16-802
Fort Stockton, Pecos County
Edwards-Trinity (Plateau) Aquifer



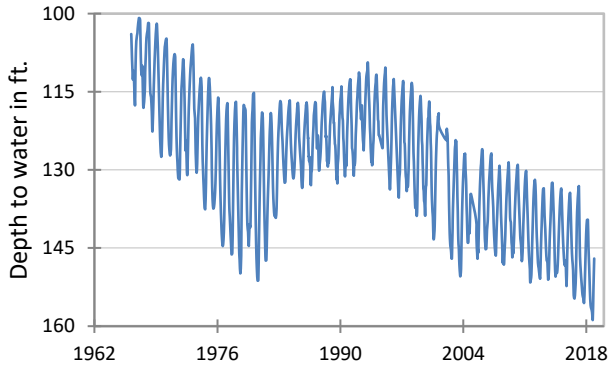
(16) State Well #55-12-134
Eldorado, Schleicher County
Trinity Aquifer



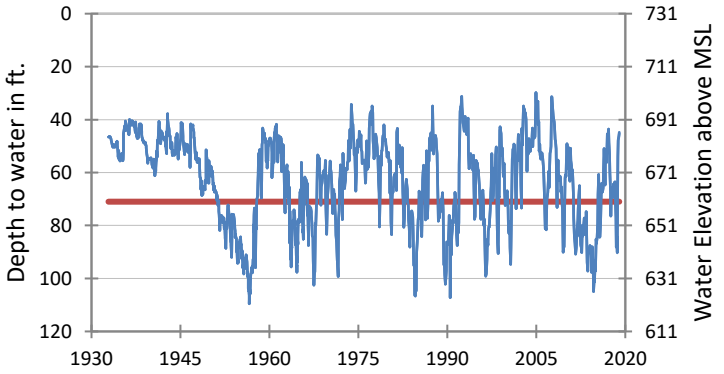
(17) State Well #21-35-748
Near O'Brien, Haskell County
Seymour Aquifer

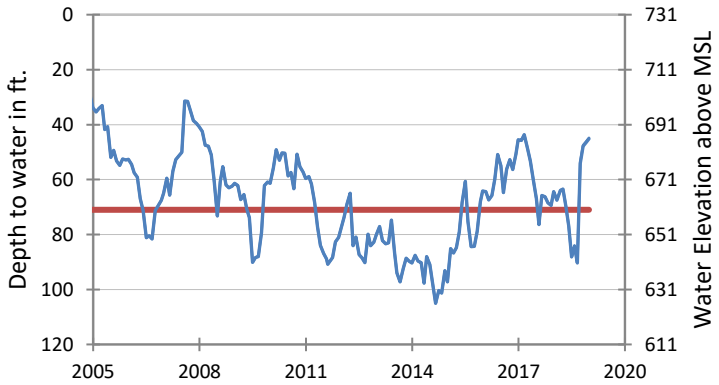


(18) State Well #48-07-516
Dell City, Hudspeth County
Bone Spring - Victorio Peak Aquifer



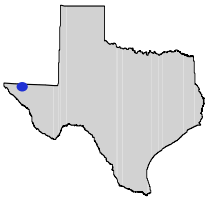
(8) State Well #68-37-203 (J-17)
San Antonio, Bexar County
Edwards (Balcones Fault Zone) Aquifer





The late December water-level measurement in this Edwards (Balcones Fault Zone) Aquifer well, elevation 731 feet above mean sea level, was 46.21 feet below land surface, or 685.79 feet above mean sea level. This was 1.40 feet above last month's measurement, 19.60 feet above last year's measurement and 1.83 feet below the initial measurement recorded in 1932.

Water levels below the red line indicate periods in which Edwards Aquifer Authority Stage 1 drought restrictions are in effect.

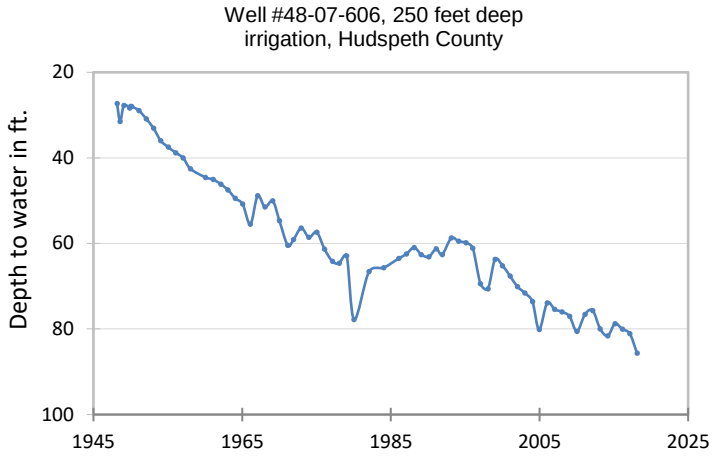


HYDROGRAPH OF THE MONTH

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

Bone Springs – Victorio Peak Aquifer

The Bone Springs – Victorio Peak Aquifer is a minor aquifer located in Northern Hudspeth County. The principal water-bearing units in the aquifer are the Permian aged Bone Springs and Victorio Peak limestones. The formations produce groundwater from solution cavities developed along joints and fracture planes. Water is generally slightly saline, with total dissolved solids of 1,000 to 3,000 milligrams per liter. In the Dell Valley area, total dissolved solids increase to 3,000 to 10,000 milligrams per liter. Since the late 1940s, pumping has been the number one means of discharge for the aquifer. Water levels have declined in the Dell Valley area from 5 to 60 feet, with an average of about 30 feet over a period of about 55 years. These declines are most likely due to pumping for irrigation. Water levels over the last 30 years have been relatively constant, except for the last few years, during which, water levels have declined because of drought.



The initial measurement of 27.29 feet below land surface was observed by the USGS in March of 1948. Since then, USGS and the TWDB have taken near-yearly water level measurements. The period of record reveals a steady decline in water level of about 60 feet over 70 years (equivalent to about 0.85 feet per year). This gradual decline is largely the result of pumping for irrigation.

Far away, with view of Guadalupe Mountains to the east (left), and close-up (right) images of well #48-07-606.