

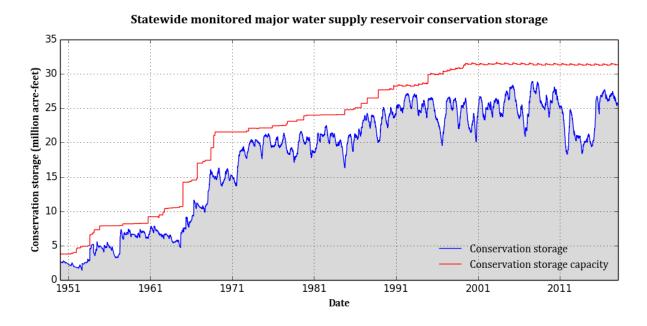


# January 2018 RESERVOIR STORAGE\*

At the end of January 2018, total conservation storage\* in 118 of the state's major water supply reservoirs was 25.8 million acre-feet or 80 percent of total conservation storage capacity. This is approximately 0.14 million acre-feet less than a month ago and 1.1 million acre-feet less than storage at this time last year.

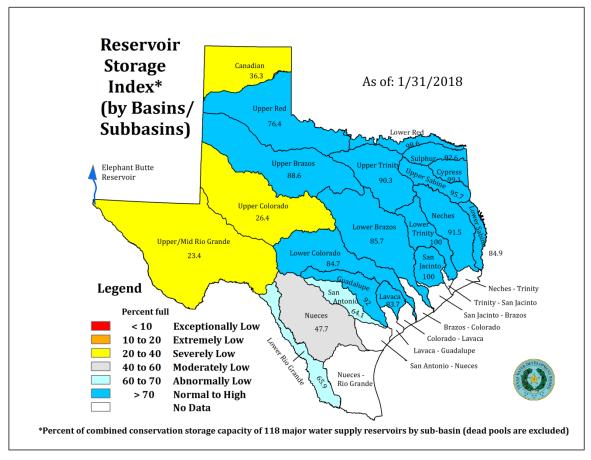
Twenty-two (22) reservoirs held 100 percent of conservation storage capacity, primarily in the North Central (5 reservoirs) and East (15 reservoirs) regions. Two reservoirs, Palo Duro (1 percent) and Twin Buttes (7 percent) remained below 10 percent full.

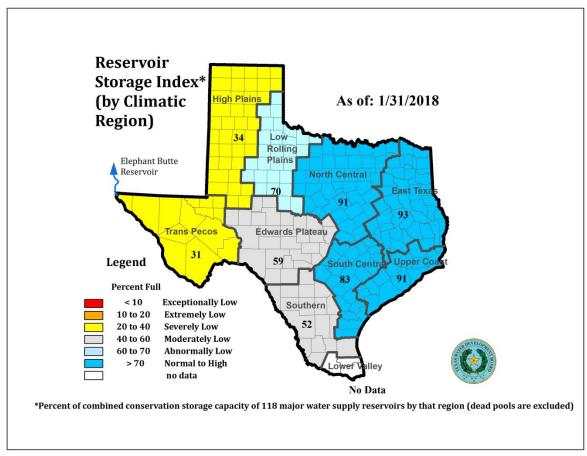
Total combined storage was at or above normal (storage ≥70 percent) in the East (93 percent), Upper Coast (91 percent), North Central (91 percent), South Central (83 percent), and Low Rolling Plains (70 percent) regions. The High Plains (34 percent) and Trans-Pecos (31 percent) regions had the lowest percentage of storage. Overall, storage increased in three and decreased in six regions over the past month.



<sup>\*</sup>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.

### JANUARY 2018 RESERVOIR CONDITIONS





<sup>\*</sup>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 January 2018		ce r 2017	Change since end of January 2017				
rame or lane or reservoir	(acre-feet)	(acre-feet) (%)		(acre-feet)** (%)		(acre-feet)** (%)				
HIGH PLAINS										
MacKenzie Reservoir	46,450	6,779	15	-53	-0	-133	-0			
Meredith, Lake	500,000	203,342	41	513	0	85,285	17			
Palo Duro Reservoir	61,066	595	1	-81	-0	-417	-1			
White River Lake	29,880	5,729	19	-205	-1	-1,557	-5			
TOTAL	637,396	216,445	34	174	0	83,178	13			
LOW ROLLING PLAINS										
Abilene, Lake	7,900	4,477	57	-302	-4	-3,256	-41			
Alan Henry Reservoir	94,808	80,081	84	-1,213	-1	-10,329	-11			
Champion Creek Reservoir	41,580	19,287	46	-173	-0	3,597	9			
Coleman, Lake	38,075	33,403	88	-416	-1	-2,398	-6			
Colorado City, Lake	30,758	12,298	40	-146	-0	-2,389	-8			
Fort Phantom Hill, Lake	70,030	61,744	88	-1,553	-2	-7,193	-10			
Greenbelt Lake	59,968	15,247	25	-17	-0	-1,110	-2			
Hords Creek Lake	8,443	5,337	63	-83	-1	-1,592	-19			
J. B. Thomas, Lake	199,931	94,461	47	-2,347	-1	-33,486	-17			
Kemp, Lake	245,307	221,452	90	-1,597	-1	-23,855	-10			
Millers Creek Reservoir	26,768	24,323	91	-313	-1	-2,445	-9			
North Fork Buffalo Creek Reservoir	15,400	11,098	72	-286	-2	-1,204	-8			
Stamford, Lake	51,570	47,653	92	-973	-2	-2,108	-4			
Sweetwater, Lake	12,267	2,362	19	-31	-0	-407	-3			
TOTAL	902,805	633,223	70	-9,450	-1	-88,175	-10			
TOTAL	702,003	NORTH CENTE		2,130	-	00,173	10			
Amon G Carter, Lake	19,266	18,889	98	-307	-2	-377	-2			
Aquilla Lake	43,243	35,653	82	-325	-1	-7,590	-18			
Arlington, Lake	40,188	35,793	89	2,211	6	-2,144	-16			
Arrowhead, Lake	230,359	194,915	85	-1,851	-1	-25,842	-11			
Bardwell Lake	46,122	38,982	85	-946	-2	-7,140	-15			
Belton Lake	435,225	395,641	91	-5,416	-1	-39,584	-9			
Benbrook Lake	85,648	78,838	92	2,001	2	6,703	8			
Bonham, Lake	11,027	9,887	90	-272	-2	1,735	16			
Bridgeport, Lake	366,236	318,510	87	-3,107	-1	-47,726	-13			
*Brownwood, Lake	128,839	106,939	83	-1,775	-1	-21,900	-17			
*Cisco, Lake	29,003	23,779	82	-266	-1	-2,189	-8			
Crook, Lake	9,195	9,195	100	42	0	798	9			
Eagle Mountain Lake	179,880	162,654	90	-4,718	-3	-17,226	-10			
Georgetown, Lake	36,823	26,003	71	1,047	3	-10,820	-29			
Graham, Lake	45,288	42,464	94	-697	-2	-2,824	-6			
Granbury, Lake	132,949	129,229	97	-1,446	-1	-3,720	-3			
Granger Lake	51,822	51,822	100	0	0	0	0			
Grapevine Lake	164,703	159,479	97	-2,176	-1	-5,224	-3			
*Halbert, Lake	6,033	5,556	92	-11	-0	156	3			
Hubbard Creek Reservoir	318,067	271,603	85	-2,481	-1	-38,395	-12			
Hubert H Moss Lake	24,058	21,864	91	-186	-1	-1,957	-8			
Jim Chapman Lake (Cooper)	260,332	230,562	89	-7,172	-3	30,107	12			
Joe Pool Lake	175,358	169,233	97	-885	-1	-6,125	-3			
Kickapoo, Lake	86,345	72,661	84	-638	-1	-6,588	-8			
Lavon Lake	406,388	352,233	87	-3,247	-1	2,275	1			
Leon, Lake	27,762	22,955	83	-368	-1	-399	-1			
Lewisville Lake	563,228	518,787	92	-6,503	-1	-44,441	-8			
Limestone, Lake	203,780	154,345	76	-4,762	-2	-42,786	-21			
*Lost Creek Reservoir	11,950	11,510	96	-104	-1	-440	-4			
*Mineral Wells, Lake	5,273	4,489	85	-87	-2	-784	-15			
Mountain Creek, Lake	22,850	22,850	100	0	0	0	0			

CONSERVATIO	ON STORAGE DA	TA FOR SELE	ECTED 1	MAJOR TEXAS	RESEF	RVOIRS				
Name of lake or reservoir	Conservation storage capacity	Conservation storage end of January 2018		Change since end of December		Change since end of January 2017				
	(acre-feet)	(acre-feet)	(acre-feet) (%)		(%)	(acre-feet)**	(%)			
(North Central continued)										
Navarro Mills Lake	49,827	40,700	82	-480	-1	-9,127	-18			
New Terrell City Lake	8,583	8,045	94	201	2	-435	-5			
Nocona, Lake (Farmers Crk)	21,444	18,975	88	-255	-1	-2,189	-10			
Palo Pinto, Lake	26,766	21,495	80	-604	-2	-3,630	-14			
Pat Cleburne, Lake	26,008	21,092	81	-650	-2	-3,658	-14			
*Pat Mayse Lake	113,683	113,683	100	no data		13,044	11			
Possum Kingdom Lake	523,873	498,387	95	-4,628	-1	-25,323	-5			
Proctor Lake	54,762	41,647	76	-646	-1	-12,059	-22			
Ray Hubbard, Lake	439,559	417,057	95	-5,254	-1	-2,624	-1			
Ray Roberts, Lake	788,167	747,438	95	-7,709	-1	-40,729	-5			
Richland-Chambers Reservoir	1,087,839	965,288	89	-14,274	-1	-99,126	-9			
Squaw Creek, Lake	151,250	151,250	100	0	0	0	0			
Stillhouse Hollow Lake	227,771	202,240	89	-4,103	-2	-25,531	-11			
Tawakoni, Lake	871,685	843,893	97	-5,073	-1	67,543	8			
Texoma, Lake (Texas)	1,258,113	1,243,246	99	-14,867	-1	9,205	1			
Texoma, Lake (Texas &	2,525,281	2,486,499	98	-83,923	-3	18,410	1			
Oklahoma)										
Waco, Lake	189,418	157,951	83	-2,987	-2	-30,738	-16			
Waxahachie, Lake	10,780	9,262	86	196	2	-1,518	-14			
Weatherford, Lake	17,812	15,265	86	-282	-2	-1,954	-11			
Whitney, Lake	553,344	455,927	82	-3,205	-1	-30,929	-6			
Worth, Lake	33,495	27,454	82	-1,522	-5	-5,426	-16			
TOTAL	10,621,419	9,697,615	91	-110,587	-1	-499,651	-5			
		EAST								
Athens, Lake	29,503	29,503	100	184	1	0	0			
B A Steinhagen Lake	66,961	66,961	100	3,030	5	8,290	12			
Bob Sandlin, Lake	190,822	190,130	100	6,409	3	-692	-0			
Caddo, Lake	29,898	29,898	100	0	0	7,234	24			
Cedar Creek Reservoir in Trinity	644,686	579,863	90	-2,454	-0	-63,515	-10			
Cherokee, Lake	40,094	40,094	100	0	0	no data				
Conroe, Lake	410,988	410,988	100	0	0	0	0			
Cypress Springs, Lake	66,756	62,176	93	-1,415	-2	-4,450	-7			
Fork Reservoir, Lake	605,061	574,753	95	-3,559	-1	27,207	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	0	0	0	0			
Martin, Lake	75,726	63,103	83	312	0	-7,283	-10			
Monticello, Lake	34,740	29,467	85	-4,765	-14	-5,273	-15			
Murvaul, Lake	38,285	38,079	99	239	1	1,698	4			
Nacogdoches, Lake	39,522	36,802	93	432	1	-2,046	-5			
O' the Pines, Lake	241,363	241,363	100	0	0	0	0			
Palestine, Lake	367,303	366,380	100	-462	-0	-923	-0			
Sam Rayburn Reservoir	2,857,077	2,565,869	90	16,864	1	-124,266	-4			
Striker, Lake	16,934	16,934	100	0	0	193	1			
*Sulphur Springs, Lake	17,747	17,747	100	0	0	2,999	17			
Toledo Bend Reservoir (Texas)	2,236,450	1,898,036	85	0	0	-126,108	-6			
		2 900 177	85	0	0	-252,216	-6			
Toledo Bend Reservoir (Texas &	4,472,900	3,800,172	03	<u> </u>	_	202,210	Ü			
Toledo Bend Reservoir (Texas & Louisiana)										
Toledo Bend Reservoir (Texas &	4,472,900 72,073 122,593	72,073 122,593	100 100	0	0 0	0	0			

CONSERVATIO	N STORAGE DA	TA FOR SELE	CTED	MAJOR TEXAS	RESEF	RVOIRS				
	Conservation	pacity end of January 2018 et) (acre-feet) (%)		Change since		Change sine				
Name of lake or reservoir	storage capacity			end of December		end of January				
	(acre-feet)			(acre-feet)**	(%)	(acre-feet)**	(%)			
TRANS-PECOS										
Elephant Butte Reservoir (Texas)	852,491	197,834	23	15,801	2	89,754	11			
Elephant Butte Reservoir (Texas & New Mexico)	1,973,358	457,949	23	36,577	2	207,765	11			
Red Bluff Reservoir	151,110	110,509	73	no data		-23,223	-15			
TOTAL	1,003,601	308,343	31	15,801	2	66,531	7			
		EDWARDS PLAT	<b>EAU</b>							
*Amistad Reservoir (Texas)	1,840,849	1,391,890	76	-1,588	-0	-138,694	-8			
*Amistad Reservoir (Texas & Mexico)	3,275,532	2,005,554	61	3,850	0	-136,454	-4			
Brady Creek Reservoir	28,808	15,755	55	-224	-1	-2,484	-9			
Buchanan, Lake	860,607	761,958	89	-1,908	-0	-55,164	-6			
E. V. Spence Reservoir	517,272	64,538	12	-1,141	-0	-5,380	-1			
Inks, Lake	13,962	7,771	56	-5,174	-37	-5,106	-37			
Lyndon B Johnson, Lake	115,249	110,697	96	-123	-0	23,463	20			
Marble Falls, Lake	6,901	6,787	98	-6	-0	-38	-1			
Nasworthy	9,615	8,196	85	523	5	523	5			
Oak Creek Reservoir	39,210	19,014	48	-331	-1	-2,710	-7			
O. C. Fisher Lake	119,445	11,699	10	-368	-0	-5,846	-5			
*O. H. Ivie Reservoir	554,340	105,742	19	-2,515	-0	-27,132	-5			
Twin Buttes Reservoir	182,454	12,258	7	-829	-0	-11,031	-6			
TOTAL	4,288,712	2,516,305	59	-13,684	-0	-229,599	-5			
		SOUTH CENTR	AL	•						
*Austin, Lake	23,972	22,772	95	-62	-0	12,815	53			
Canyon Lake	378,781	348,784	92	-2,738	-1	-29,997	-8			
*Coleto Creek Reservoir	31,040	28,134	91	-584	-2	1,611	5			
Medina Lake	254,823	163,435	64	-6,135	-2	-71,141	-28			
Somerville Lake	147,104	147,104	100	0	0	no data				
Travis, Lake	1,113,348	899,390	81	-5,059	-0	-213,958	-19			
TOTAL	1,949,068	1,609,619	83	-14,578	-1	-300,670	-15			
	, ,	UPPER COAS		,		,				
Houston, Lake	120,686	120,686	100	0	0	0	0			
Texana, Lake	159,566	133,529	84	-7,291	-5	-25,945	-16			
TOTAL	280,252	254,215	91	-7,291	-3	-25,945	-9			
101112		SOUTHERN		.,=						
Choke Canyon Reservoir	662,820	199,457	30	-3,383	-1	-65,713	-10			
Corpus Christi, Lake	256,062	238,912	93	-6,572	-3	2,303	1			
*Falcon Reservoir (Texas)	1,551,007	843,116	54	-10,180	-1	235,566	15			
*Falcon Reservoir (Texas & Mexico)	2,646,817	1,413,529	53	-37,851	-1	634,487	24			
TOTAL	2,469,889	1,281,485	52	-20,135	-1	172,156	7			
		STATEWIDE TO	TAL							
STATEWIDE TOTAL	32,185,855	25,798,193	80	-144,935	-0	-1,109,110	-3			

<sup>\*</sup> Conservation volume is used as conservation storage capacity, because the dead storage is unknown.

#### 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 \* (current conservation storage - past conservation storage)/conservation storage capacity.

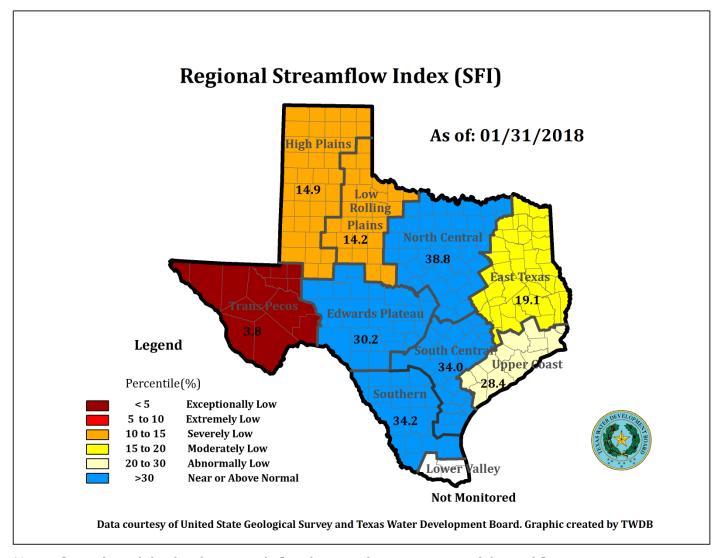
<sup>\*\*</sup>Monthly and yearly changes do not include reservoirs that did not have data in last month or last year, respectively.

### JANUARY 2018 STREAMFLOW CONDITIONS

The computed 30-day mean flow status for 29 reporting index stations monitored this month is presented below. Mean flow increased at 4 index stations, decreased at 23 stations, and remained unchanged at 2 stations.

Streamflow Status	Number of Stations
Near or Above Normal (>30%)	11
Abnormally Low (20-30%)	5
Moderately Low (15-20%)	2
Severely Low (10-15%)	3
Extremely Low (5-10%)	2
Exceptionally Low (<5%)	6

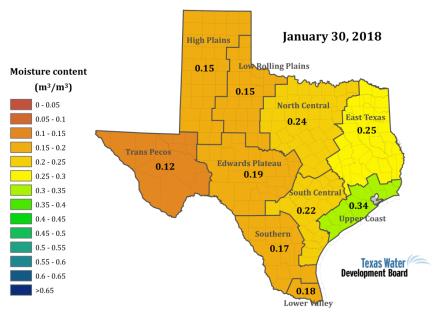
On a regional basis, as shown below, streamflows were near or above normal in North Central, Edwards Plateau, South Central, and Southern regions, exceptionally low in the Trans Pecos region, severely low in the High Plains and Low Rolling Plains regions, moderately low in the East Texas region, and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



<sup>\*</sup>Streamflow Index is defined as the percentile flow that exceeds a given percent of observed flows.

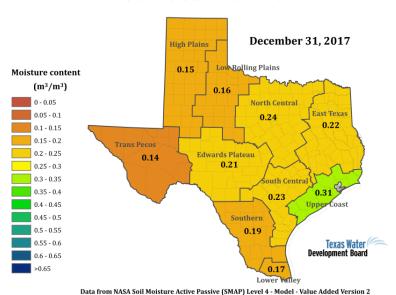
### JANUARY 2018 SOIL MOISTURE CONDITIONS

#### **Soil Moisture Condition**



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

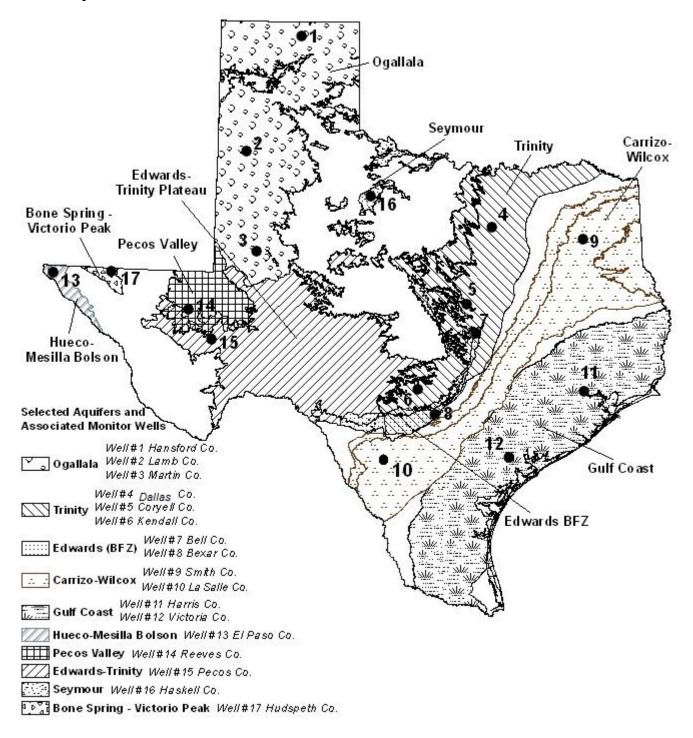
#### **Soil Moisture Condition**



Soil moisture content is shown as volume of water per unit volume of bulk soil. Root zone: 0 to 1 meter depth.

Soil moisture at the end of January 2018 (*top image*), as compared to soil moisture at the end of December 2017 (*bottom image*), increased in three climate regions ranging from 10 - 124 percent, declined in five climate regions ranging from 4 – 14 percent, and remained unchanged in two climate regions.

## JANUARY 2018 GROUNDWATER LEVELS IN OBSERVATION WELLS



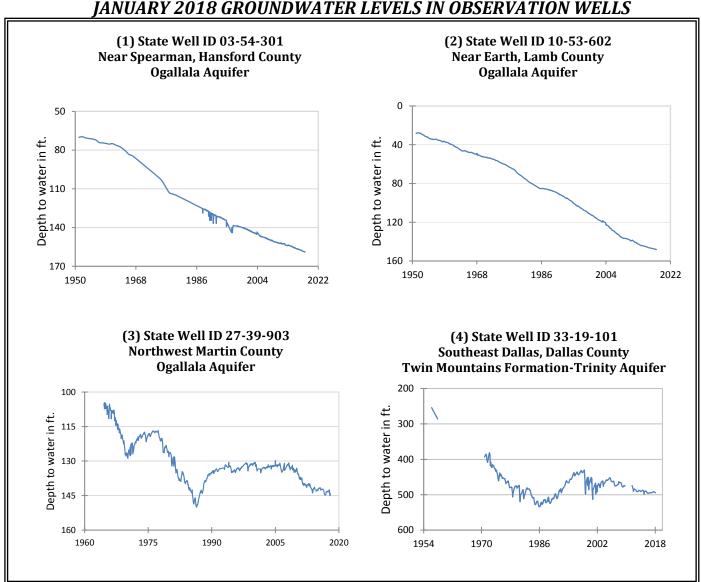
Water-level measurements were available for all 17 key monitoring wells in the state. Water levels rose in 10 monitoring wells since the beginning of January, ranging from an increase of 0.06 feet in the Haskell County Seymour Aquifer well (#16 on map) to 4.12 feet in the Pecos County Edwards-Trinity (Plateau) Aquifer well (#15 on map). Water levels declined in 7 monitoring wells, ranging from a decline of 0.03 feet in the Coryell County Trinity Aquifer well (#5 on map) to 2.90 feet in the Bexar County Edwards (BFZ) Aquifer well (#8 on map). The J-17 well (#8 on map) in San Antonio recorded a water level of 67.31 feet below land surface or 663.50 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 3.50 feet above the Stage I critical management level.

<sup>\*</sup>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.

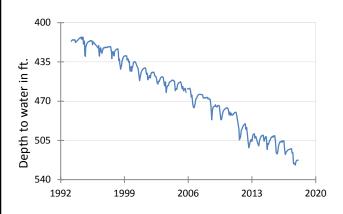
Monitoring Well	January	December	Month Change	Year Change	Historical Change	First Measured
(1) Hansford 0354301	158.69	158.84	0.15	-0.91	-88.57	1951
(2) Lamb 1053602	148.16	148.11	-0.05	-0.97	-119.99	1951
(3) Martin 2739903	143.39	144.13	0.74	-0.15	-38.50	1964
(4) Dallas 3319101	494.30	493.93	- <i>0.37</i>	0.21	-272.30	1954
(5) Coryell 4035404	522.64	522.61	-0.03	-9.69	-230.64	1955
(6) Kendall 6802609	131.84	131.97	0.13	-19.13	-71.84	1975
(7) Bell 5804816	124.07	123.78	-0.29	-2.37	<i>-0.56</i>	2008
(8) Bexar 6837203	67.31	64.41	-2.90	-21.60	-20.67	1932
(9) Smith 3430907	432.18	431.88	-0.30	-0.28	-132.18	1987
(10) La Salle 7738103	484.19	484.85	0.66	-35.30	-231.12	2003
(11) Harris 6514409	192.44	192.87	0.43	3.18	<i>-56.94</i> *	1947**
(12) Victoria 8017502	33.50	31.16	-2.34	-0.34	0.50	1958
(13) El Paso 4913301	294.31	294.53	0.22	1.16	-62.41	1964
(14) Reeves 4644501	160.80	162.33	1.53	-3.35	-68.71	1952
(15) Pecos 5216802	183.64	187.76	4.12	0.85	63.24	1976
(16) Haskell 2135748	46.61	46.67	0.06	-0.35	-3.61	2002
(17) Hudspeth 4807516	139.63	142.26	2.63	-1.82	-35.71	1966

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

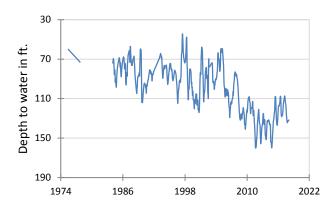
# JANUARY 2018 GROUNDWATER LEVELS IN OBSERVATION WELLS



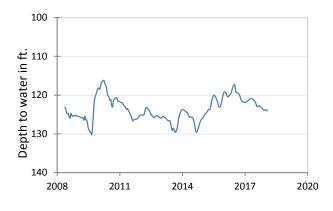
(5) State Well ID 40-35-404 Gatesville, Coryell County Hosston Formation-Trinity Aquifer



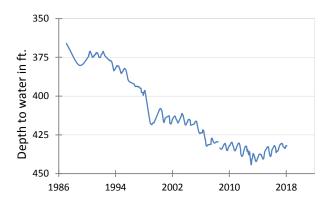
(6) State Well ID 68-02-609 Waring, Kendall County Cow Creek Formation-Trinity Aquifer



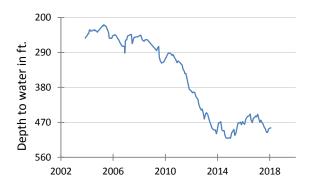
(7) State Well ID 58-04-816 Near Salado, Bell County Edwards (Balcones Fault Zone) Aquifer



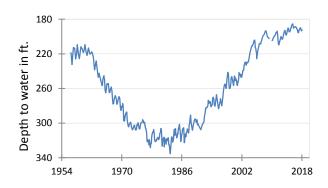
(9) State Well ID 34-30-907 Red Springs, Smith County Carrizo-Wilcox Aquifer



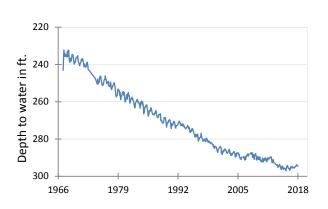
(10) State Well ID 77-38-103 Near Cotulla, La Salle County Carrizo-Wilcox Aquifer



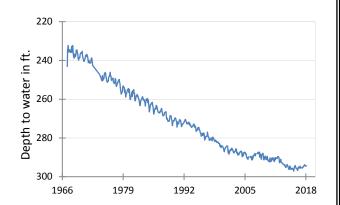
(11) State Well ID 65-14-409 Alief, Harris County Evangeline Formation-Gulf Coast Aquifer



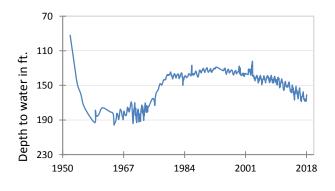
(12) State Well ID 80-17-502 Near Bloomington, Victoria County Lissie Formation-Gulf Coast Aquifer



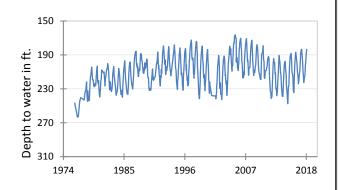
(13) State Well ID 49-13-301 El Paso, El Paso County Hueco-Mesilla Bolson Aquifer



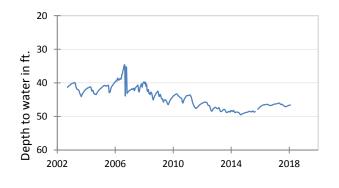
(14) State Well ID 46-44-501 Near Pecos, Reeves County Pecos Valley Aquifer



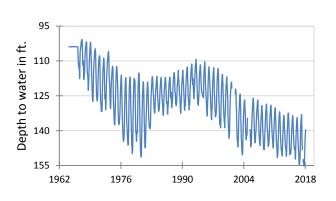
(15) State Well ID 52-16-802 Fort Stockton, Pecos County Edwards-Trinity (Plateau) Aquifer



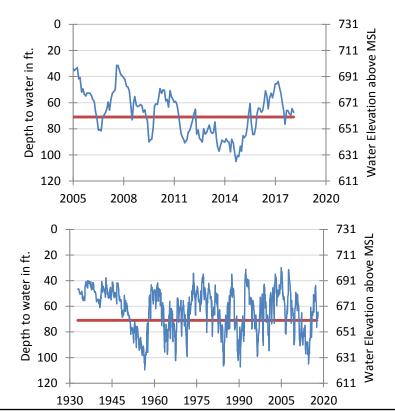
(16) State Well ID 21-35-748 Near O'Brien, Haskell County Seymour Aquifer



(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 January water-level measurement in this Edwards (Balcones Fault Zone) Aquifer well, elevation 730.81 feet above mean sea level, was 67.31 feet below land surface, or 663.50 feet above mean sea level. This was 2.90 feet below last month's measurement, 21.60 feet below last year's measurement, and 20.67 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. \*\*\*



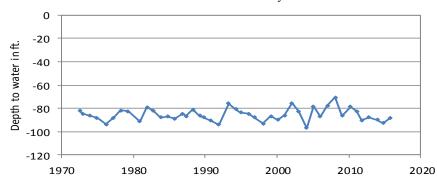
## HYDROGRAPH OF THE MONTH

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

#### The Hickory Aquifer, a minor aquifer found in the central part of the state, consists of the Hickory Sandstone Member of the Riley Formation. The Hickory Aquifer reaches a maximum thickness of 480 feet and freshwater saturated thickness averages about 350 feet. The groundwater is generally fresh with a total dissolved solids concentration of less than 1,000 milligrams per liter, though the upper portion of the aquifer typically contains iron in excess of the state's secondary drinking water standards. Another great concern is naturally occurring radio activity: gross alpha radiation, radium, and radon are commonly found in excess of the state's primary drinking water standards. The groundwater is used for irrigation throughout its extent and for municipal supply in the cities of Brady, Mason, and Fredericksburg.

# **Hickory Aquifer**

Well # 5710101, 104 feet deep Northwest Llano County



The TWDB has measured the water level in this stock well every year since the first water-level measurement in 1972 of 82.22 feet below land surface. Historically, the water level has remained relatively constant with yearly fluctuations no greater than 20 feet and generally less than 5 to 10 feet. The deepest water level of 96.83 feet below land surface was recorded in January 2004. The largest water-level decline of 15.5 feet occurred between 2008 and 2009, and the largest water-level rise of 18.5 feet occurred between 2004 and 2005.