



# **RESERVOIR STORAGE**

## February 2013

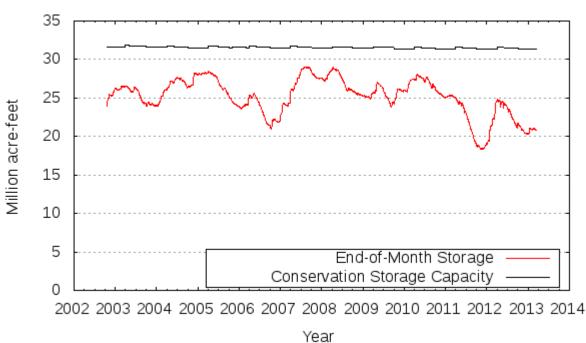
At the end of the month, total storage in 115 of the state's major water supply reservoirs was at 20.97 million acre-feet\*, or 67% of their total conservation storage capacity. This is 53,900 acre-feet more than a month ago but 1.36 million acre-feet less than storage at this time last year.

Ten reservoirs held 100% of conservation storage capacity. Twelve (12) reservoirs were at or below 10% full: O. C. Fisher, Electra and Meredith were effectively empty, J. B. Thomas was at 1%, Palo Duro and Twin Buttes were at 2%, White River was at 4%, North Fork Buffalo Creek and E.V. Spence were at 5%, Mackenzie was at 6%, Champion Creek Reservoir and Medina were at 8% full.

Total combined storage was greater than 70% in the North Central (76%), East (92%), and Upper Coast (93%) regions. The regions with the lowest percentage storage were the High Plains (1%) and Trans-Pecos regions (18%). Storage over the last month declined in 7 regions and increased in 2 regions.

Elephant Butte reservoir held 206,775 acre-feet, or 10% of storage capacity. This is 24,260 acft more than a month ago.

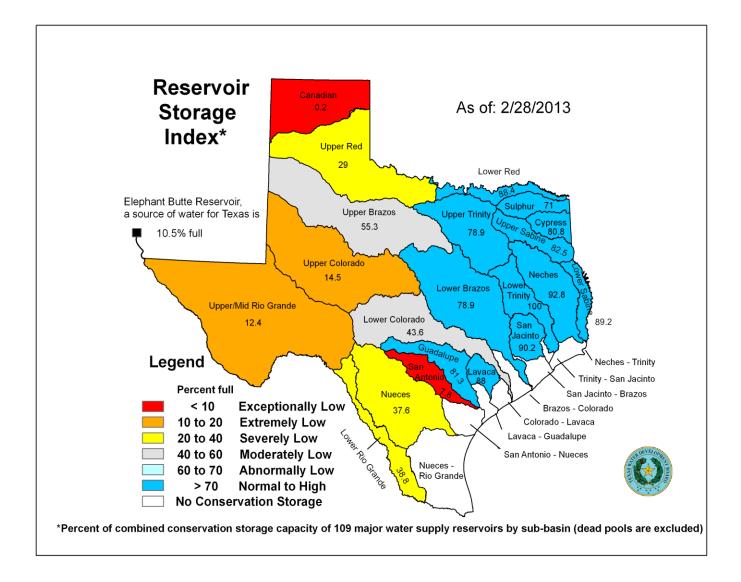
\* Only the Texas share of storage in border reservoirs is counted.



**CONSERVATION STORAGE DATA FOR** 

Figures are based on the end of the month data at 115 major reservoirs that represent 96 percent of the total conservation storage capacity of the 188 major water supply reservoirs in Texas. Major reservoirs are defined as having a conservation storage capacity of 5,000 acre-feet or greater.

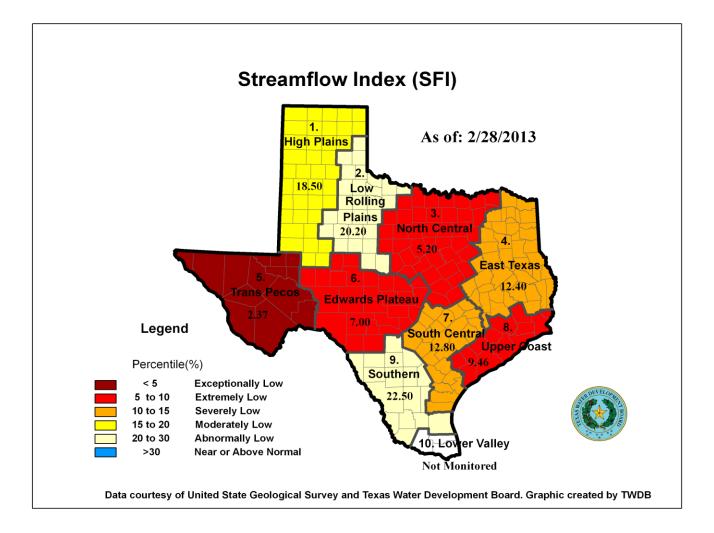
# FEBRUARY RESERVOIR CONDITIONS



# **FEBRUARY STREAMFLOW CONDITIONS**

Of 29 reporting index stations monitored this month, computed 30-day mean flows were exceptionally low (<5%) at 11 stations, extremely low (5-10%) at 6 stations, severely low (10-15%) at 2 stations, moderately low (15-20%) at 3 stations, abnormally low (20% - 30%) at 5 stations, and near normal (30% - 70%) at the remaining 2 stations. Compared to last month, flows have increased at 10 index stations and decreased at 15 stations.

On a regional basis, flows in this month were exceptionally low in Trans-Pecos, extremely low in North Central region, Edwards Plateau, and Upper Coast regions, severely low in East Texas and South Central regions, moderately low in High Plains region, and abnormally low in Low Rolling Plains and Southern regions. Streamflow in the Lower Valley region is not monitored.



## CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	No. Conservation		Conservation		Change since		Change since	
	on	Storage	Storage		Late Jan.		Late Feb.	
	Map	Capacity	Late Feb.	2013	2013		2012	
		(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)	(%)
		HIGH	PLAINS					
Palo Duro Reservoir	1	61,066	1,508	2	-50	-0	-2,052	-3
Meredith, Lake (Texas)	2	500,000	0	0	0	0	0	C
Meredith, Lake (Texas & Oklahoma)	(2)	779,556	0	0	-20,076	-3	-22,965	-3
MacKenzie Reservoir	3	46,450	3,010	6	-12	-0	-1,051	-2
White River Lake	4	29,880	1,191	4	-165	-1	-2,868	-10
TOTAL		637,396	5,709	1	-227	-0	-5,971	-1
LOW ROLLING PLAINS								
Greenbelt Lake	5	59,968	7,548	13	121	0	-3,078	-5
*Electra, Lake	6	5,626	0	0	0	0	-45	-1
N. Fork Buffalo Crk Reservoir	7	15,400	819	5	18	0	-1,384	-9
Kemp, Lake	8	245,307	61,769	25	932	0	-23,806	-10
Millers Creek Reservoir	9	26,768	6,921	26	-161	-1	-3,087	-12
Alan Henry Reservoir	10	94,808	69,052	73	-718	-1	-4,771	-5
Stamford, Lake	11	51,570	13,293	26	-416	-1	-13,172	-26
J B Thomas, Lake	12	199,931	1,097	20	-410	-0	-695	-20
Fort Phantom Hill, Lake	13	70,030	34,351	49	-536	-1	-3,808	-5
Sweetwater, Lake	14	12,267	3,587	43 29	-81	-1	-1,497	-12
Colorado City, Lake	15	30,758	10,586	34	-335	-1	655	2
Champion Creek Reservoir	16	41,580	3,411	8	-335	-0	-1,446	-3
Abilene, Lake	10	7,900	1,293	0 16	-99	-0 -1	-1,440	-21
	18					-1		
Coleman, Lake		38,075	17,379	46	-340		2,073	5
Hords Creek Lake TOTAL	19	8,443 908,431	2,893 233,999	34 26	-38 -1,843	-0 -0	201 -55,528	2 -6
NORTH CENTRAL								
Nocona, Lake (Farmers Crk)	20	21,444	10,564	49	-74	-0	-2,486	-12
Hubert H Moss Lake	21	24,058	21,029	87	-50	-0	-2,321	-10
Texoma, Lake (Texas)	22	1,268,161	1,074,478	85	-974	-0	-156,981	-12
Texoma, Lake (Texas & Oklahoma)	(22)	2,525,281	2,148,962	85	-1,948	-0	-313,963	-12
*Pat Mayse Lake	23	113,683	91,734	81	-609	-1	-21,949	-19
Kickapoo, Lake	23	85,825	34,579	40	-298	-0	-10,093	-12
Arrowhead, Lake	24	235,997	93,367	40 40	-1,279	-0 -1	-42,108	-12
Bonham, Lake	26	11,027	7,871	71 02	-74	-1 4	-3,103	-28
Crook, Lake	27	9,195	7,558	82	347	4	-1,470	-16
Amon G Carter, Lake	28	19,266	11,956	62 86	-143	-1	-1,564	-8- 7
Ray Roberts, Lake	29	788,167	679,498	86	-4,439	-1	-54,285	-7
Jim Chapman Lake (Cooper)	30	260,332	146,770	56	-3,111	-1	936	0
Graham, Lake	31	45,288	30,648	68	-452	-1	-11,410	-25
*Lost Creek Reservoir	32	11,950	10,176	85	-60	-1	-1,774	-15
Bridgeport, Lake	33	366,236	210,705	58	-1,333	-0	-60,524	-17
Lewisville Lake	34	563,228	424,698	75	2,537	0	-118,204	-21
Lavon Lake	35	406,388	248,674	61	-1,101	-0	-73,076	-18
Hubbard Creek Reservoir	36	322,280	91,457	28	-3,245	-1	-56,203	-17
Possum Kingdom Lake	37	540,340	390,300	72	-2,655	-0	-51,439	-10
*Mineral Wells, Lake	38	6,760	5,088	75	-16	-0	-1,672	-25
Weatherford, Lake	39	17,812	10,391	58	-307	-2	-4,934	-28
Eagle Mountain Lake	40	179,880	135,476	75	1,600	1	-43,371	-24
Worth, Lake	41	33,495	24,169	72	30	0	-8,032	-24
Grapevine Lake	42	164,703	128,075	78	1,021	1	-36,421	-22
Ray Hubbard, Lake	43	452,040	383,686	85	-4,143	-1	-30,634	-7
New Terrell City Lake	44	8,583	6,978	81	0	0	-504	-6
Daniel, Lake	45	9,515	2,719	29	-101	-1	-2,832	-30
Palo Pinto, Lake	46	27,398	15,954	58	-593	-2	-10,986	-40

## CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake	No.	Conservation	Conservati	on	Change sin	ce	Change sin	ce
or Reservoir	on	Storage	Storage		Late Jan.		Late Feb.	
	Мар	Capacity	Late Feb.	####	2,013		2,012	
		(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)	(%)
NORTH CENTRAL (CONTINUE)							•	
Benbrook Lake	47	85,648	64,135	75	4,994	6	-21,513	-25
Arlington, Lake	48	40,188	30,321	75	942	2	-9,848	-25
Joe Pool Lake	49	175,358	160,850	92	-288	-0	-14,508	-8
*Cisco, Lake	50	25,895	9,727	38	-151	-1	-1,739	-7
Leon, Lake	51	26,476	17,441	66	-322	-1	-1,961	-7
Granbury, Lake	52	128,046	91,202	71	-909	-1	-34,175	-27
Pat Cleburne, Lake	53	26,008	18,807	72	-250	-1	-7,201	-28
Waxahachie, Lake	54	10,780	9,466	88	-340	-3	-1,314	-12
Bardwell Lake	55	46,122	38,835	84	235	1	-7,287	-16
Proctor Lake	56	55,457	33,820	61	-849	-2	-21,637	-39
Whitney, Lake	57	553,344	387,465	70	-656	-0	-119,913	-22
Aquilla Lake	58	44,460	33,659	76	-746	-2	-10,801	-24
Navarro Mills Lake	59	49,827	48,146	97	-417	-1	-1,681	-3
*Halbert, Lake	60	6,033	4,961	82	-139	-2	-445	-7
Richland-Chambers Reservoir	61	1,087,839	903,626	83	-20,495	-2	-72,667	-7
*Brownwood, Lake	62	128,839	70,275	55	-1,381	-1	2,025	2
Waco, Lake	62	187,808	159,748	85	-1,272	-1	-28,060	-15
Limestone, Lake	64	208,014	177,894	86	4,343	2	-12,536	-6
Belton Lake	65	435,225	354,515	81	-3,769	-1	-35,864	-8
Stillhouse Hollow Lake	66	227,771	189,599	83	-2,197	-1	42,307	19
Georgetown, Lake	67	36,823	23,613	64	10	0	1,614	4
Granger Lake	68	50,779	50,779	100	0	0	4,748	9
Tawakoni, Lake	69	871,685	709,766	81	-5,004	-1	-29,577	-3
Mountain Creek, Lake	70	22,850	22,850	100	0,004	0	0	0
Squaw Creek, Lake	70	151,250	150,208	99	-1,042	-1	-1,042	-1
	71	-						
TOTAL		10,675,576	8,060,306	76	-49,225	-0	-1,190,515	-11
EAST								
Wright Patman Lake	72	122,593	122,593	100	0	0	0	0
*Sulphur Springs, Lake	73	17,747	15,094	85	263	1	-2,653	-15
	74	66,756	61,146	92	-530	י 1-1	2,374	-13
Cypress Springs, Lake				92 79				
Bob Sandlin, Lake	75	190,822	151,438	79	2,634	1	7,331	4 no
Caddo, Lake	76	29.898	29.898	100	0	0	no data	data
Martin, Lake	77	75,116	67,125	89	6,337	8	19,483	26
Monticello, Lake	78	34,740	34,740	100	0	0	0	0
Fork Reservoir, Lake	79	605,061	501,127	83	-707	-0	30,391	5
O the Pines, Lake	80	241,363	189,352	78	9,156	4	-7,359	-3
Cedar Creek Reservoir in Trinity	81				-10,896	-2		
		644,686	544,717	84 95			-10,896	-2
Athens, Lake	82	29,503	25,023	85	219	1	680	2
Palestine, Lake	83	373,199	362,926	97	8,446	2	42,886	11
Tyler, Lake	84	80,103	66,014	82	4,256	5	5,596	7
Murvaul, Lake	85	38,285	38,285	100	0	0	1,634	4
Jacksonville, Lake	86	25,670	25,670	100	553	2	2,939	11
Nacogdoches, Lake	87	39,522	39,086	99	151	0	16,572	42
Houston County Lake	88	17,113	17,113	100	0	0	2,664	16
Sam Rayburn Reservoir	89	2,857,077	2,649,871	93	111,380	4	510,468	18
Toledo Bend Reservoir (Texas)	90	2,245,752	2,011,424	90	55,410	2	227,058	10
Toledo Bend Reservoir (TX & LA)	(90)	4,472,900	4,022,848	90	110,820	2	454,116	10
*Livingston, Lake	91	1,785,348	1,785,348	100	0	0	0	0
B A Steinhagen Lake	92	66,961	53,148	79	0	0	-8,836	-13
Conroe, Lake	93	416,177	362,638	87	2,332	1	25,404	6
		10,003,492	9,153,776	92	189,004	2		

### CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

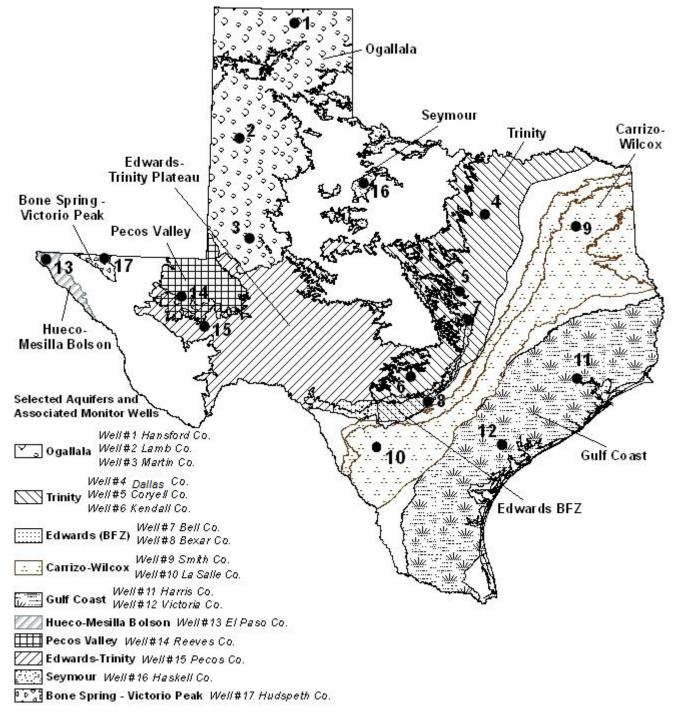
Name of Lake	No. Conservation		Conservation		Change since		Change since	
or Reservoir	on	Storage	Storage		Late Jan.		Late Feb.	
	Мар	Capacity	Late Feb.	####	2,013		2,012	
		(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)	<b>(</b> %
TRANS-PECOS								
Red Bluff Reservoir	94	152,335	27,890	18	815	1	6,935	
TOTAL		152,335	27,890	18	815	1	6,935	
EDWARDS PLATEAU								
Oak Creek Reservoir	95	39,210	11,164	28	-283	-1	-3,396	
E V Spence Reservoir	96	517,272	27,301	5	-882	-0	25,017	
O C Fisher Lake	97	79,483	0	0	0	0	25,619	
*O H Ivie Reservoir	98	554,340	119,937	22	-3,870	-1	21,311	
Twin Buttes Reservoir	99	182,454	3,404	2	-1,245	-1	-177	
Brady Creek Reservoir	100	28,808	7,651	27	-225	-1	-763	
Buchanan, Lake	101	860,607	359,592	42	-5,834	-1	-21,230	
Inks, Lake	102	13,962	12,937	93	-83	-1	22	
Lyndon B Johnson, Lake	103	111,633	109,212	98	-964	-1	-602	
*Amistad Reservoir (Texas)	104	1,840,849	842,295	46	11,079	1	-459,671	-2
*Amistad Reservoir (TX & Mexico)	(104)	3,275,532	1,026,597	31	-176,295	-5	-1,227,879	-;
TOTAL		4,149,135	1,493,493	36	-2,307	-0	-413,870	-
SOUTH CENTRAL								
Travis, Lake	105	1,113,256	427,468	38	-4,122	-0	-654	
*Austin, Lake	106	23,972	22,972	96	200	1	215	
Somerville Lake	107	147,104	128,137	87	-1,644	-1	9,975	
Canyon Lake	108	378,781	308,610	81	-2,085	-1	1,934	
Medina Lake	109	254,884	19,782	8	-2,577	-1	-33,892	-
*Coleto Creek Reservoir	110	31,040	24,737	80	483	2	-1,448	
TOTAL		1,949,037	931,706	48	-9,745	-0	-23,870	
UPPER COAST								
Houston, Lake	111	102,876	102,876	100	0	0	0	
Texana, Lake	112	159,640	140,443	88	-5,598	-4	11,923	
TOTAL		262,516	243,319	93	-5,598	-2	11,923	
SOUTHERN								
Choke Canyon Reservoir	113	695,262	318,671	46	-4,166	-1	-98,928	-
Corpus Christi, Lake	114	256,961	39,688	15	-635	-0	-40,151	-
Falcon Reservoir (Texas)	115	1,551,007	463,656	30	-62,195	-4	-407,650	-
*Falcon Reservoir (TX & Mexico)	(115)	2,646,817	892,245	34	145,884	6	-297,496	-
TOTAL		2,503,230	822,015	33	-66,996	-3	-546,729	-
STATE TOTAL		31,241,148	20,972,213	67	53,878	0	-1,359,220	

Elephant Butte Reservoir	1,973,358	206,775	10	24,263 1	-159,459 -8

#### 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 in all reservoirs.

# **FEBRUARY 2013 GROUNDWATER LEVELS IN OBSERVATION WELLS**



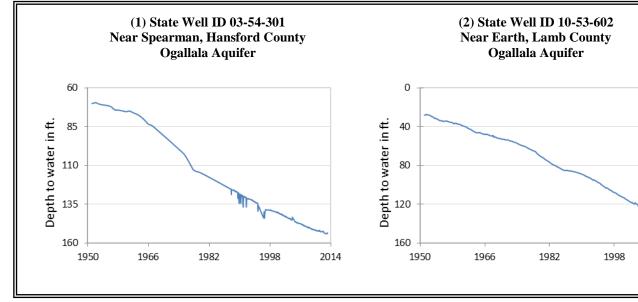
#### February, 2012

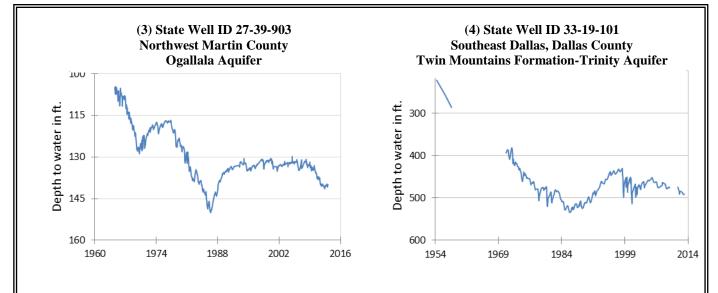
Water level measurements were available for all seventeen key monitoring wells in the state. Water levels rose in eight of the monitoring wells since the beginning of February, ranging from 0.02 feet in the Dallas County Trinity Aquifer well to 3.02 feet in the La Salle County Carrizo-Wilcox Aquifer well. Water levels declined in nine monitoring wells, ranging from 0.11 feet in the Lamb County Ogallala Aquifer well to 10.46 feet in the Smith County Carrizo-Wilcox Aquifer well. The J-17 well in San Antonio recorded a water level of 82.17 feet below land surface or 648.83 feet above mean sea level. This water level is 1.17 feet below the Stage I critical management level in that segment of the Edwards Aquifer. Stage I restrictions were declared by the EAA when the ten-day average fell below the 660-foot elevation, or 71 feet below land surface.

\* ID is used in this publication to differentiate between the monitoring well number (1 - 17) as displayed on the aquifer map and the TWDB's six- or seven-digit state well "identification" number.

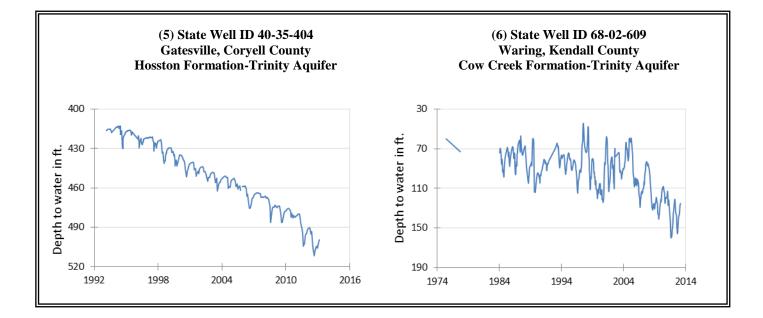
Monitoring Well	Feb	Jan	Month Change	Year Change	Historical Change
(1) Hansford 0354301	153.80	153.4	-0.4	NA	-83.68
(2) Lamb 1053602	142.64	142.53	-0.11	-2.06	-114.49
(3) Martin 2739903	139.97	140.44	0.47	0.34	-35.08
(4) Dallas 3319101	491.50	491.52	0.02	-6.66	-269.5
(5) Coryell 4035404	499.60	500.83	1.23	-8.91	-207.6
(6) Kendall 6802609	125.26	126.69	1.43	0.75	-65.26
(7) Bell 5804816	125.74	125.52	-0.22	-0.7	-2.61
(8) Bexar 6837203	82.17	77.1	-5.07	-13.29	-35.53
(9) Smith 3430907	454.78	444.32	-10.46	-21.34	-88.78
(10) La Salle 7738103	445.04	448.06	3.02	-53.01	-191.97
(11) Harris 6514409	207.39	205.89	-1.5	-3.02	-71.89
(12) Victoria 8017502	35.30	35.37	0.07	1.5	-1.3
(13) El Paso 4913301	293.56	293.22	-0.34	-3.9	-61.66
(14) Reeves 4644501	146.43	146.25	-0.18	0.49	-54.34
(15) Pecos 5216802	195.11	190.67	-4.44	2.98	51.77
(16) Haskell 2135748	47.40	47.67	0.27	-1.68	-6.07
(17) Hudspeth 4807516	133.55	133.75	0.2	-1.6	-29.63

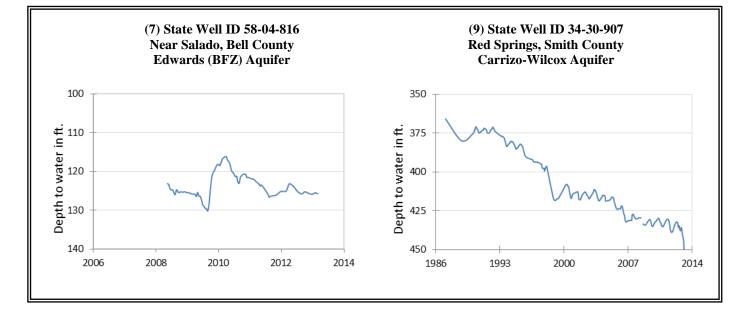
# FEBRUARY GROUNDWATER LEVELS IN OBSERVATION WELLS

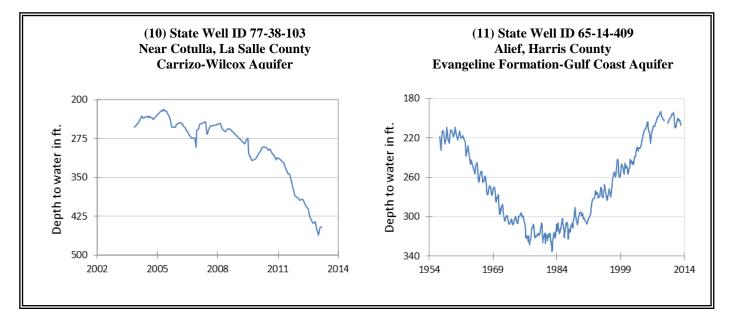


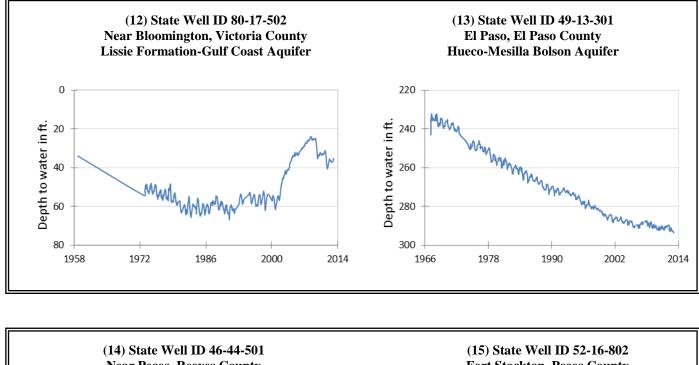


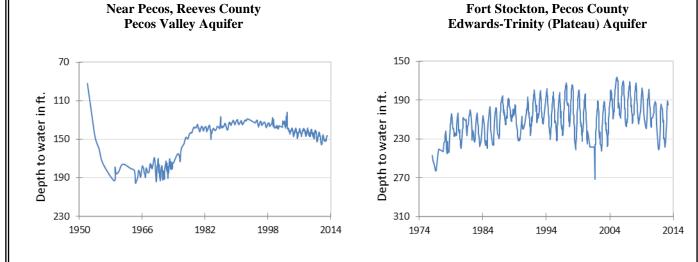
2014

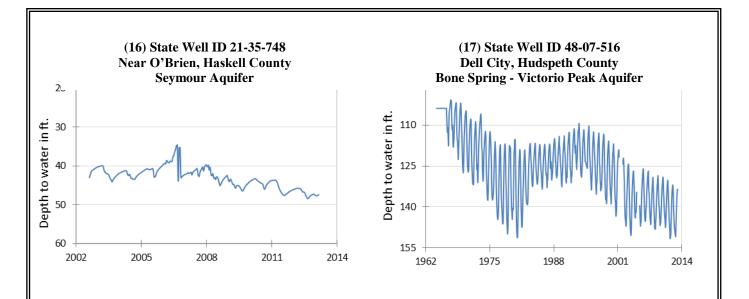


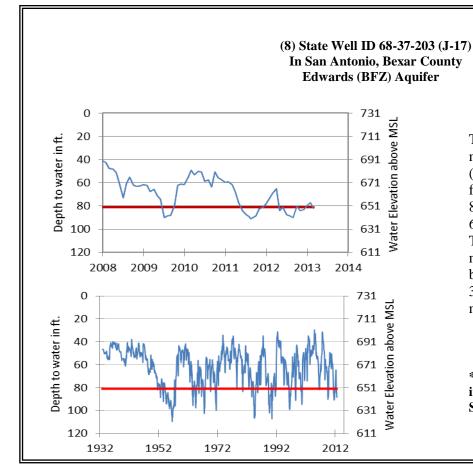












The late February water level measurement in this Edwards (BFZ) Aquifer well, elevation 731 feet above mean sea level, was 82.17 feet below land surface, or 648.83 feet above mean sea level. This was 5.07 feet below last month's measurement, 13.29 feet below last year's measurement, and feet below 35.53 the initial measurement recorded in 1932.

\*\*\* Water levels below the red line indicate Edwards Aquifer Authority Stage II drought restrictions. \*\*\*

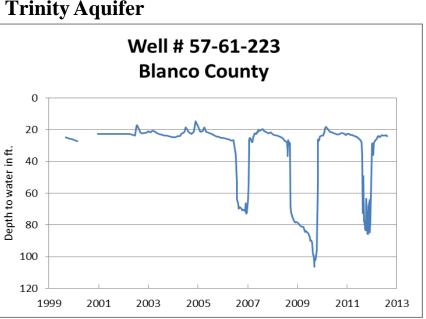
### HYDROGRAPH OF THE MONTH



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

# **Trinity Aquifer**

The Trinity aquifer extends across much of the central and northeastern part of the state, and consists of Cretaceous age formations of the Trinity Group. From youngest to oldest formations are the Paluxy, Glen Rose, and Twin Mountains-Travis Peak. Where the Glen Rose thins or is missing, the Paluxy and Twin Mountains coalesce to form the Antlers Formation. The Antlers consists of sand and gravel, with clay beds in the middle. Water from the Antlers is mainly used for irrigation in the outcrop area of North and Central Texas. Forming the upper unit of the Trinity Group, the Paluxy Formation consists of fine to coarsegrained sand interbedded with clay and shale. The formation pinches out downdip and does not occur south of the Colorado River. Underlying the Paluxy, the Glen Rose Formation forms a gulfward-thickening wedge of marine carbonates consisting primarily of limestone. In general, groundwater is fresh but very hard. Extensive development of the Trinity aquifer has occurred along the Interstate 35 corridor. Water level declines, ranging from 350 to more than 1,000 feet, have occurred since the mid-1970s.



This City of Blanco public-supply well, at an elevation of 1,340 feet, is completed in the Upper Glen Rose Formation of the Trinity Aquifer at a total depth of 500 feet. Declines of up to 80 feet have occurred recently during periods of drought.

TEXAS WATER DEVELOPMENT BOARD 1700 N. CONGRESS AVE. P.O. BOX 13231 AUSTIN TX 78711-3231