

## RESERVOIR STORAGE

*May 2014*

At the end of the month, total storage in 114 of the state's major water supply reservoirs was at 21.0 million acre-feet\*, or 67% of their total conservation storage capacity. This is 691,257 acre-feet more than a month ago and 50,000 acre-feet more than the storage at this time last year. No data was reported for Electra, B.A. Steinhagen, and North Fork Buffalo Creek. Electra has been empty since the end of October, 2012

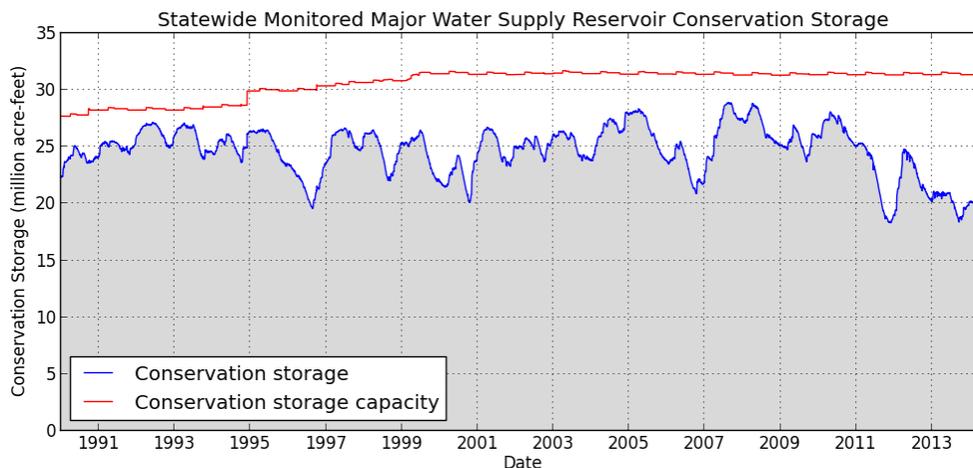
Twenty-four reservoirs, most in the North Central, East, and Upper Coast regions, held 100% of conservation storage capacity. Thirteen (13) reservoirs were below 10% full: Meredith (0%), North Fork Buffalo Creek (0%), Electra (0%), White River (1%), J. B. Thomas (1%), E.V. Spence (2%), Palo Duro (3%), Abilene (3%), O. C. Fisher (3%), Mackenzie (5%), Medina (5%), Champion Creek (7%), and Twin Buttes (7%).

Total combined storage was greater than 70% in the Upper Coast (100%) and East (97%) regions. The regions with the lowest percentage storage were the High Plains (1%) and Low Rolling Plains regions (21%). Storage declined in 2 regions and increased in 7 regions over the past month.

Elephant Butte reservoir held 365,000 acre-feet, or 18% of storage capacity. This is 1,450 acre-feet 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 114 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.

**CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS**

Name of Lake or Reservoir	Conservation Storage Capacity (acre-feet)	Conservation Storage end of May		Change since end of Apr 2014		Change since end of May 2013		
		2014 (acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)	(%)	
<b>HIGH PLAINS</b>								
Palo Duro Reservoir	61,066	1,791	3	-184	-0	709	1	
Meredith, Lake (Texas)	500,000	0	0	0	0	0	0	
Meredith, Lake (Texas & Oklahoma)	779,556	0	0	0	0	0	0	
MacKenzie Reservoir	46,450	2,230	5	-40	-0	-539	-1	
White River Lake	29,880	168	1	168	1	-127	-0	
<b>TOTAL</b>	<b>637,396</b>	<b>4,189</b>	<b>1</b>	<b>-56</b>	<b>-0</b>	<b>43</b>	<b>0</b>	
<b>LOW ROLLING PLAINS</b>								
Greenbelt Lake	59,968	7,968	13	-261	-0	838	1	
*Electra, Lake	5,626	0	0					
N. Fork Buffalo Crk Reservoir	15,400	0	0			-489	-3	
Kemp, Lake	268,811	63,010	23	4,880	2	8,738	3	
Millers Creek Reservoir	26,768	3,095	12	-334	-1	-2,648	-10	
Alan Henry Reservoir	94,808	56,905	60	-1,191	-1	-7,472	-8	
Stamford, Lake	51,570	5,800	11	-623	-1	-5,595	-11	
J B Thomas, Lake	199,931	2,231	1	418	0	1,796	1	
Fort Phantom Hill, Lake	70,030	27,744	40	-741	-1	-4,075	-6	
Sweetwater, Lake	12,267	2,205	18	-75	-1	-990	-8	
Colorado City, Lake	30,758	7,934	26	264	1	-1,641	-5	
Champion Creek Reservoir	41,580	3,008	7	337	1	-71	-0	
Abilene, Lake	7,900	266	3	-10	-0	-600	-8	
Coleman, Lake	38,075	13,978	37	-318	-1	-2,069	-5	
Hords Creek Lake	8,443	2,697	32	295	3	51	1	
<b>TOTAL</b>	<b>926,309</b>	<b>196,841</b>	<b>21</b>	<b>2,641</b>	<b>0</b>	<b>-6,259</b>	<b>-1</b>	
<b>NORTH CENTRAL</b>								
Nocona, Lake (Farmers Crk)	21,444	7,834	37	-629	-3	-2,887	-13	
Hubert H Moss Lake	24,058	20,410	85	-367	-2	-1,382	-6	
Texoma, Lake (Texas)	1,258,113	987,583	78	3,271	0	-198,455	-16	
Texoma, Lake (Texas & Oklahoma)	2,525,281	987,583	39	3,271	0	-198,455	-8	
*Pat Mayse Lake	113,683	95,573	84	10,676	9	-3,015	-3	
Kickapoo, Lake	86,345	24,277	28	-2,129	-2	-8,045	-9	
Arrowhead, Lake	230,359	53,950	23	-58	-0	-36,670	-16	
Bonham, Lake	11,027	8,568	78	-264	-2	-2,374	-22	
Crook, Lake	9,195	9,080	99	31	0	-53	-1	
Amon G Carter, Lake	19,266	8,257	43	-353	-2	-3,101	-16	
Ray Roberts, Lake	788,167	568,158	72	-8,961	-1	-106,657	-14	
Jim Chapman Lake (Cooper)	260,332	146,369	56	43,173	17	13,952	5	
Graham, Lake	45,288	20,662	46	-908	-2	-9,771	-22	
*Lost Creek Reservoir	11,950	8,061	67	-170	-1	-1,728	-14	
Bridgeport, Lake	366,236	151,935	41	-3,917	-1	-38,567	-11	
Lewisville Lake	563,228	374,298	66	-2,535	-0	-64,667	-11	
Lavon Lake	406,388	209,185	51	5,127	1	-63,600	-16	
Hubbard Creek Reservoir	318,067	63,016	20	-4,281	-1	-16,663	-5	
Possum Kingdom Lake	540,340	327,828	61	-9,733	-2	-54,464	-10	
*Mineral Wells, Lake	6,760	3,785	56	-111	-2	-1,038	-15	
Weatherford, Lake	17,812	10,999	62	-376	-2	-674	-4	
Eagle Mountain Lake	179,880	118,896	66	-3,831	-2	-25,384	-14	
Worth, Lake	33,495	22,577	67	172	1	-639	-2	
Grapevine Lake	164,703	102,933	62	-2,392	-1	-26,624	-16	
Ray Hubbard, Lake	452,040	314,192	70	9,264	2	-80,593	-18	
New Terrell City Lake	8,583	7,769	91	932	11	916	11	

**CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS**

Name of Lake or Reservoir	Conservation Storage Capacity (acre-feet)	Conservation Storage end of May 2014 (acre-feet)	(%)	Change since end of Apr 2014 (acre-feet)	(%)	Change since end of May 2013 (acre-feet)	(%)
<b>(North Central Continue)</b>							
Palo Pinto, Lake	26,827	6,216	23	-274	-1	-10,044	-37
Benbrook Lake	85,648	69,733	81	1,212	1	-8,136	-9
Arlington, Lake	40,188	39,517	98	3,855	10	916	2
Joe Pool Lake	175,358	172,627	98	8,177	5	1,992	1
*Cisco, Lake	25,895	13,641	53	-322	-1	4,351	17
Leon, Lake	26,476	19,892	75	-522	-2	1,421	5
Granbury, Lake	128,046	65,390	51	-659	-1	-16,770	-13
Pat Cleburne, Lake	26,008	16,044	62	670	3	-3,632	-14
Waxahachie, Lake	10,780	10,423	97	1,245	12	830	8
Bardwell Lake	46,122	43,395	94	6,992	15	5,205	11
Proctor Lake	55,457	23,360	42	-387	-1	-15,704	-28
Whitney, Lake	553,344	339,202	61	11,575	2	-43,534	-8
Aquilla Lake	44,460	37,776	85	6,408	14	5,773	13
Navarro Mills Lake	49,827	49,827	100	1,171	2	3,291	7
*Halbert, Lake	6,033	4,834	80	42	1	256	4
Richland-Chambers Reservoir	1,087,839	801,026	74	28,845	3	-44,116	-4
*Brownwood, Lake	128,839	70,763	55	2,862	2	6,005	5
Waco, Lake	189,567	177,164	93	9,574	5	20,475	11
Limestone, Lake	208,014	208,014	100	3,813	2	46,089	22
Belton Lake	435,225	332,800	76	9,745	2	-27,758	-6
Stillhouse Hollow Lake	227,771	174,457	77	12,213	5	-12,158	-5
Georgetown, Lake	36,823	20,626	56	-99	-0	-1,748	-5
Granger Lake	50,779	50,779	100	899	2	0	0
Tawakoni, Lake	871,685	598,885	69	50,136	6	-85,831	-10
Mountain Creek, Lake	22,850	22,850	100	0	0	0	0
Squaw Creek, Lake	151,250	151,092	100	2,108	1	-158	-0
<b>TOTAL</b>	<b>10,647,870</b>	<b>7,186,528</b>	<b>67</b>	<b>190,910</b>	<b>2</b>	<b>-905,168</b>	<b>-9</b>
<b>EAST</b>							
Wright Patman Lake	310,382	310,382	100	29,159	9	42,545	14
*Sulphur Springs, Lake	17,747	17,747	100	0	0	2,390	13
Cypress Springs, Lake	66,756	66,756	100	0	0	4,737	7
Bob Sandlin, Lake	190,822	184,313	97	7,791	4	33,729	18
Caddo, Lake	29,898	29,898	100	0	0	0	0
Martin, Lake	75,116	75,116	100	1,179	2	8,035	11
Monticello, Lake	34,740	34,740	100	0	0	0	0
Fork Reservoir, Lake	605,061	527,576	87	10,799	2	32,553	5
O the Pines, Lake	268,566	268,566	100	27,203	10	58,003	22
Cedar Creek Reservoir in Trinity	644,686	545,467	85	25,484	4	11,508	2
Athens, Lake	29,435	29,435	100	0	0	3,968	13
Palestine, Lake	373,199	373,199	100	0	0	2,195	1
Tyler, Lake	73,161	73,161	100	0	0	14,131	19
Murvaul, Lake	38,285	38,285	100	0	0	821	2
Jacksonville, Lake	25,670	25,670	100	0	0	139	1
Nacogdoches, Lake	39,522	39,522	100	974	2	2,054	5
Houston County Lake	17,113	17,113	100	13	0	360	2
Sam Rayburn Reservoir	2,857,077	2,797,617	98	147,746	5	189,364	7
Toledo Bend Reservoir (Texas)	2,245,752	2,170,344	97	30,571	1	70,876	3
Toledo Bend Reservoir (TX & LA)	4,472,900	2,170,344	49	30,571	1	70,876	2
*Livingston, Lake	1,785,348	1,785,348	100	0	0	0	0
B A Steinhagen Lake	66,961	no data					
Conroe, Lake	416,177	416,177	100	9,851	2	46,857	11
<b>TOTAL</b>	<b>10,211,474</b>	<b>9,826,432</b>	<b>97</b>	<b>290,770</b>	<b>0</b>	<b>524,265</b>	<b>0</b>

**CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS**

Name of Lake or Reservoir	Conservation Storage Capacity (acre-feet)	Conservation Storage end of May		Change since end of Apr 2014		Change since end of May 2013		
		2014 (acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)	(%)	
<b>TRANS-PECOS</b>								
Red Bluff Reservoir	151,110	81,400	54	13,155	9	56,266	37	
<b>TOTAL</b>	151,110	81,400	54	13,155	9	56,266	37	
<b>EDWARDS PLATEAU</b>								
Oak Creek Reservoir	39,210	7,993	20	784	2	-2,068	-5	
E V Spence Reservoir	517,272	11,212	2	-1,117	-0	-15,958	-3	
O C Fisher Lake	119,445	3,633	3	2,884	2	1,826	2	
*O H Ivie Reservoir	554,340	114,088	21	50,801	9	8,565	2	
Twin Buttes Reservoir	182,454	12,585	7			9,990	5	
Brady Creek Reservoir	28,808	9,429	33	896	3	2,399	8	
Buchanan, Lake	816,904	336,362	41	24,902	3	-7,570	-1	
Inks, Lake	13,962	12,907	92	-75	-1	-60	-0	
Lyndon B Johnson, Lake	115,056	110,635	96	0	0	-245	-0	
*Amistad Reservoir (Texas)	1,840,849	907,246	49	74,640	4	229,332	12	
*Amistad Reservoir (TX & Mexico)	3,275,532	907,246	28	74,640	2	229,332	7	
<b>TOTAL</b>	4,228,300	1,526,090	36	153,715	4	226,211	5	
<b>SOUTH CENTRAL</b>								
Travis, Lake	1,113,348	410,249	37	25,735	2	545	0	
*Austin, Lake	23,972	23,112	96	263	1	-357	-1	
Somerville Lake	147,104	147,104	100	27,657	19	22,131	15	
Canyon Lake	378,781	315,913	83	6,370	2	6,226	2	
Medina Lake	254,823	11,879	5	4,537	2	-2,024	-1	
*Coletto Creek Reservoir	31,040	29,375	95	7,534	24	753	2	
<b>TOTAL</b>	1,949,068	937,632	48	72,096	4	27,274	1	
<b>UPPER COAST</b>								
Houston, Lake	120,686	120,686	100	0	0	0	0	
Texana, Lake	159,566	159,566	100	31,922	20	7,360	5	
<b>TOTAL</b>	280,252	280,252	100	31,922	11	7,360	3	
<b>SOUTHERN</b>								
Choke Canyon Reservoir	695,262	218,150	31	-3,912	-1	-63,948	-9	
Corpus Christi, Lake	256,961	209,565	82	4,985	2	149,153	58	
*Falcon Reservoir (Texas)	1,551,007	471,358	30	-73,300	-5	43,371	3	
*Falcon Reservoir (TX & Mexico)	2,646,817	471,358	18	-73,300	-3	43,371	2	
<b>TOTAL</b>	2,503,230	899,073	36	-72,227	-3	128,576	5	
<b>STATE TOTAL</b>	31,550,150	21,003,010	67	691,257	2	50,451	0	

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

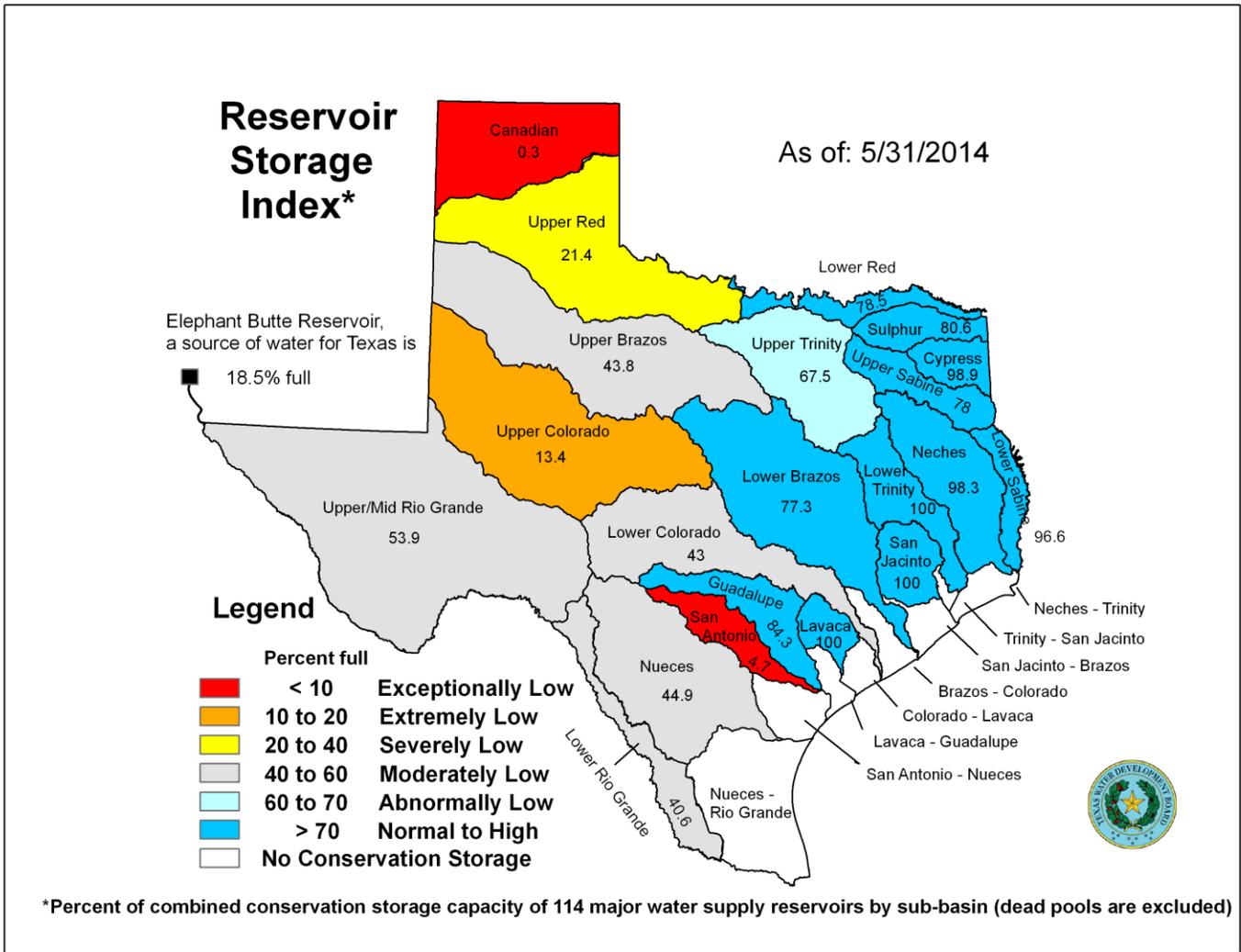
\*\* No reading available. Last valid reading was near empty. Percentage estimated assuming current storage is zero.

Elephant Butte Reservoir	1,973,358	365,002	18	1,452	0	169,446	9
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**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.

# MAY RESERVOIR CONDITIONS



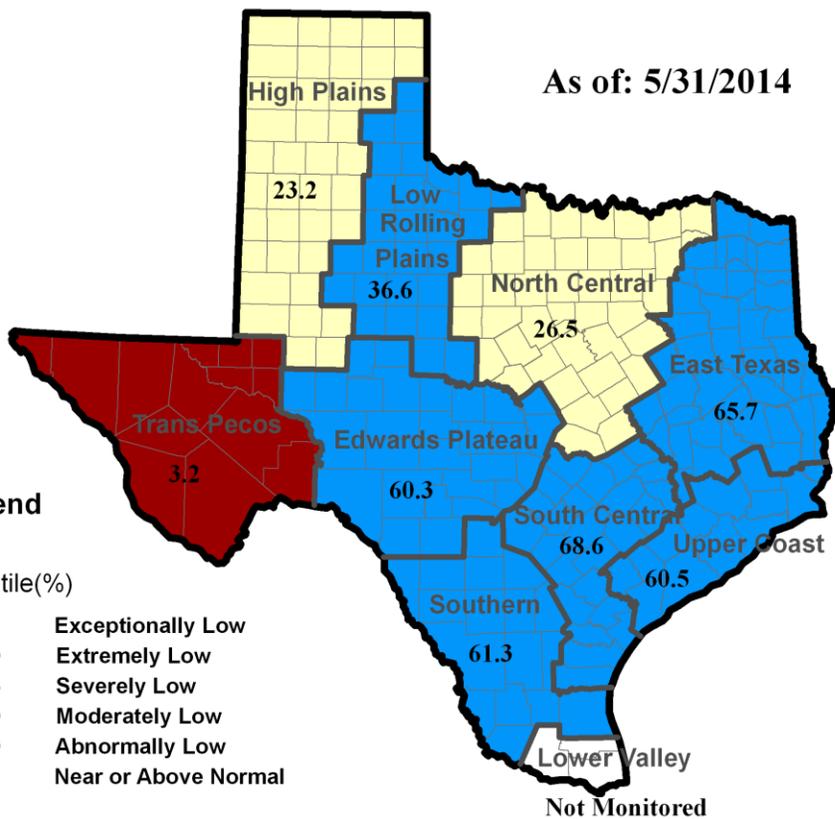
## *MAY STREAMFLOW CONDITIONS*

Of 29 reporting index stations monitored this month, computed 30-day mean flows were exceptionally low (<5%) at 6 stations, abnormally low (20-30%) at 2 stations, and near normal (30% - 70%) at the remaining 21 stations. Compared to last month, flows have increased at 19 index stations and decreased at 9 stations.

On a regional basis, flows in this month at index stations were exceptionally low in the Trans-Pecos region, abnormally low in the High Plains and North Central regions, and near or above normal in all other regions. Streamflow in the Lower Valley region is not monitored.

### Streamflow Index (SFI)

As of: 5/31/2014



**Legend**

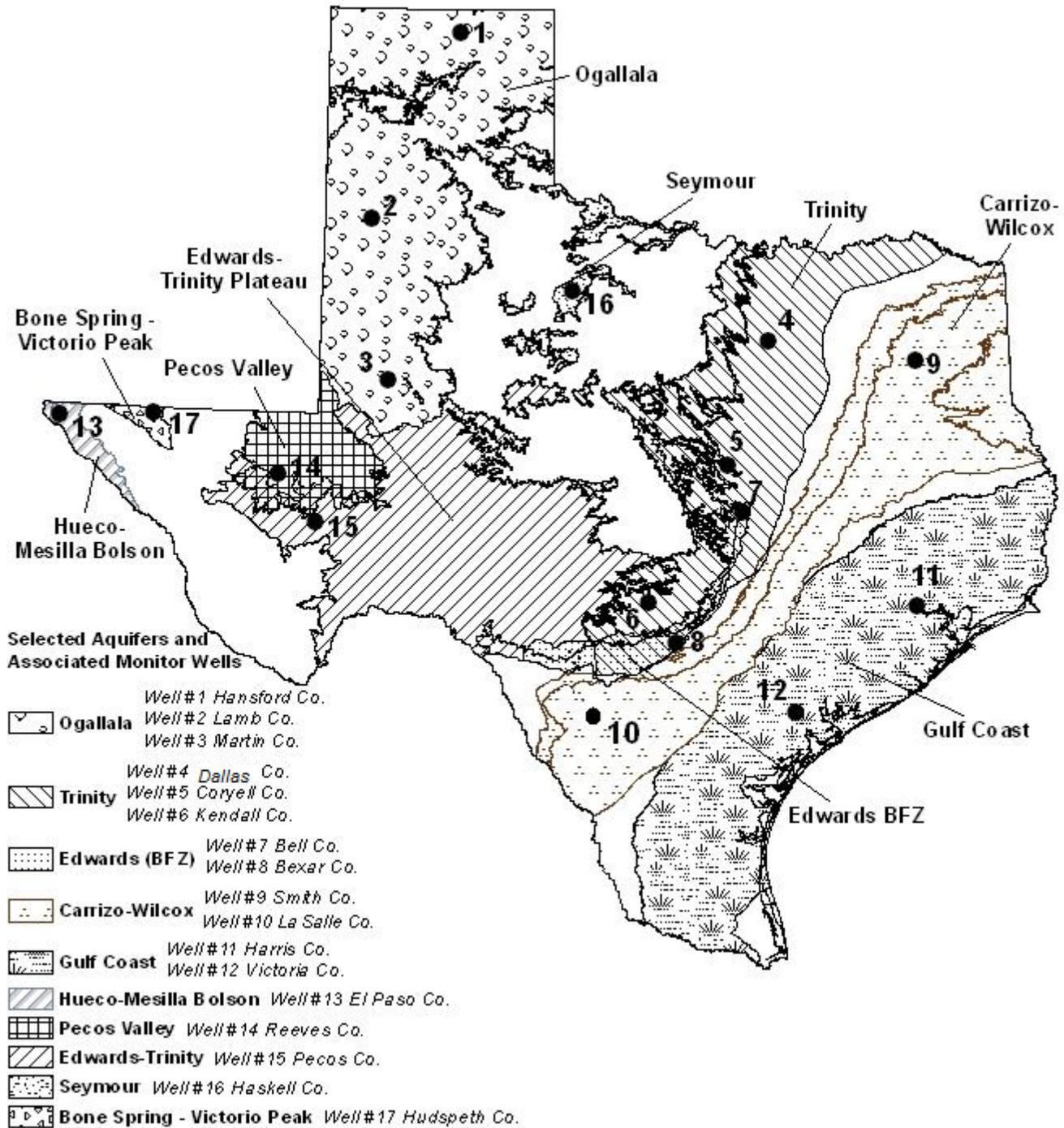
Percentile(%)

- < 5      Exceptionally Low
- 5 to 10      Extremely Low
- 10 to 15      Severely Low
- 15 to 20      Moderately Low
- 20 to 30      Abnormally Low
- >30      Near or Above Normal



Data courtesy of United State Geological Survey and Texas Water Development Board. Graphic created by TWDB

# MAY 2014 GROUNDWATER LEVELS IN OBSERVATION WELLS



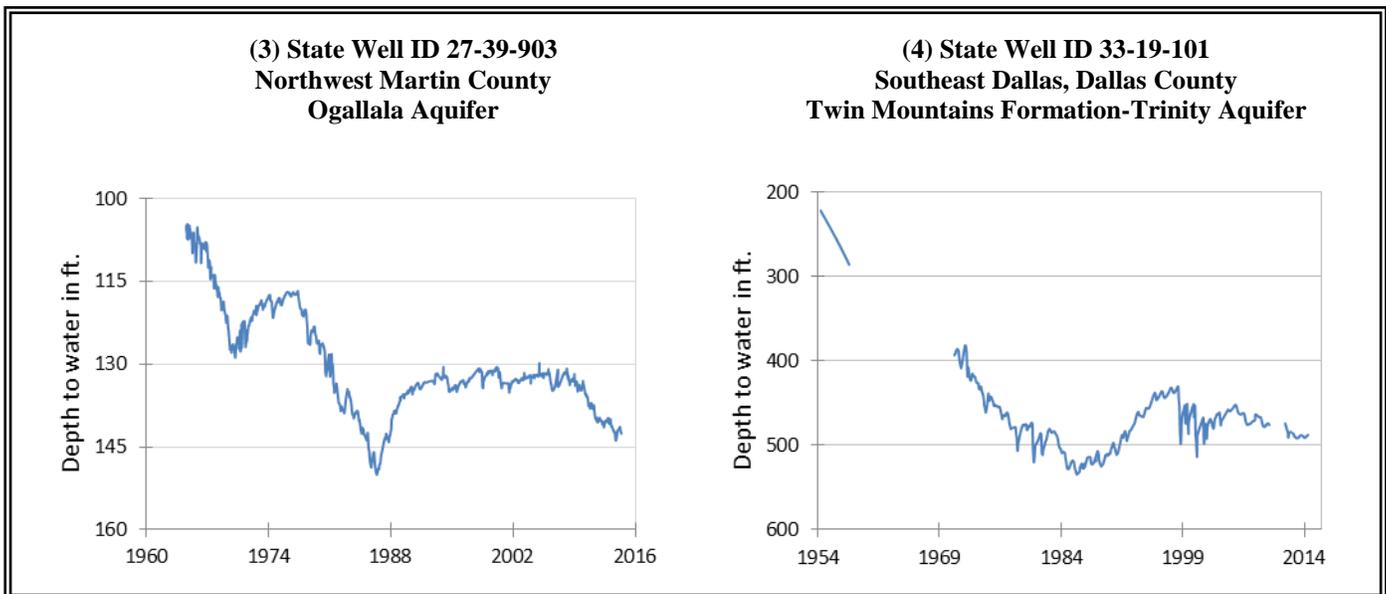
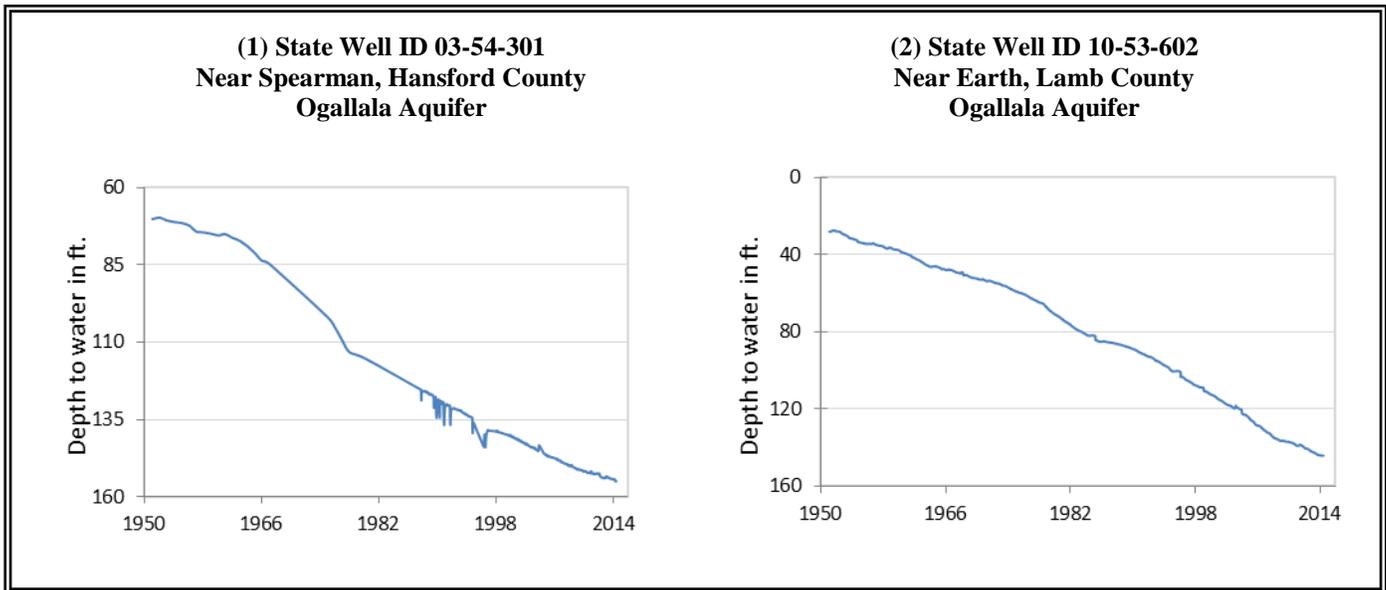
May, 2014

Water level measurements were available for all seventeen key monitoring wells in the state. Water levels rose in six of the monitoring wells since the beginning of May, ranging from 0.15 feet in the Hansford County Ogallala Aquifer well to 9.69 feet in the Bexar County Edwards Aquifer well. Water levels declined in eleven monitoring wells, ranging from 0.04 feet in the Haskell County Seymour Aquifer well to 14.12 feet in the Pecos County Edwards-Trinity Aquifer well. The J-17 well in San Antonio recorded a water level of 88.01 feet below land surface or 642.99 feet above mean sea level. This water level is 2.99 feet above the Stage III critical management level in that segment of the Edwards Aquifer. Stage III restrictions were declared by the EAA when the ten-day average fell below the 640-foot elevation, or 91 feet below land surface.

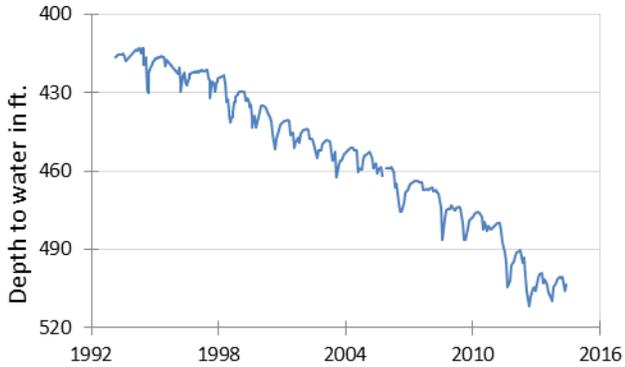
\* ID is used in this publication to differentiate between the monitoring well number (1 - 17) as displayed on the aquifer map and the TWDB's six- or seven-digit state well "identification" number.

Monitoring Well	May	April	month change	year change	historical change	first measured
(1) Hansford 0354301	154.93	155.08	0.15	-0.95	-84.81	1951
(2) Lamb 1053602	144.34	144.29	-0.05	-1.03	-116.19	1951
(3) Martin 2739903	142.57	142.2	-0.37	-0.84	-37.68	1964
(4) Dallas 3319101	487.66	488.52	0.86	1.17	-265.66	1954
(5) Coryell 4035404	503.31	505.75	2.44	-1.89	-211.31	1955
(6) Kendall 6802609	135.7	136.27	0.57	-4.28	-75.7	1975
(7) Bell 5804816	125.7	125.62	-0.08	0.97	-2.57	2008
(8) Bexar 6837203	88.01	97.7	9.69	-13.21	-41.37	1932
(9) Smith 3430907	437.93	437.34	-0.59	-0.52	-71.93	1987
(10) La Salle 7738103	491.46	489.18	-2.28	-22.64	-238.39	2003
(11) Harris 6514409	190.89	190.13	-0.76	2.22	-55.39	1956
(12) Victoria 8017502	34.57	35.46	0.89	-0.12	-0.57	1958
(13) El Paso 4913301	296.32	296.04	-0.28	-2.07	-64.42	1967
(14) Reeves 4644501	160.18	154.94	-5.24	-5.66	-68.09	1952
(15) Pecos 5216802	226.55	212.43	-14.12	-12.53	20.33	1976
(16) Haskell 2135748	48.73	48.69	-0.04	-0.56	-7.4	2002
(17) Hudspeth 4807516	147.09	140.78	-6.31	-2.05	-43.17	1964

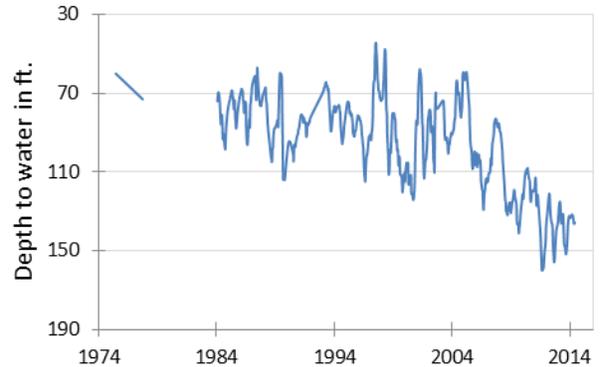
## MAY GROUNDWATER LEVELS IN OBSERVATION WELLS



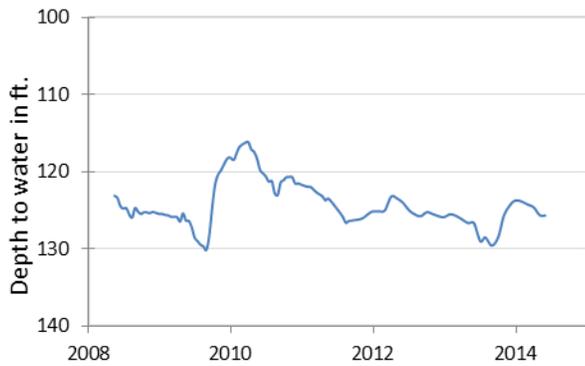
**(5) State Well ID 40-35-404  
Gatesville, Coryell County  
Hosston Formation-Trinity Aquifer**



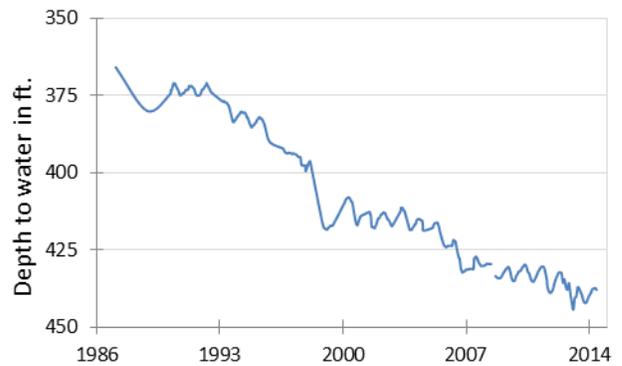
**(6) State Well ID 68-02-609  
Waring, Kendall County  
Cow Creek Formation-Trinity Aquifer**



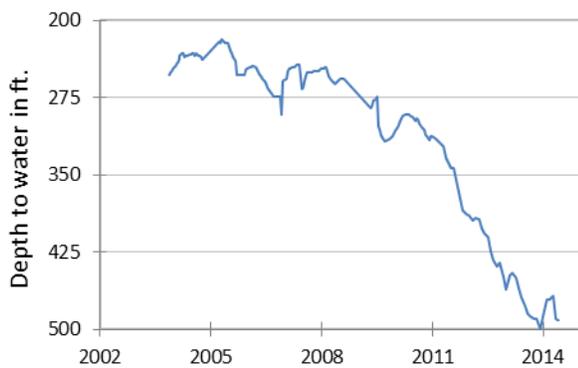
**(7) State Well ID 58-04-816  
Near Salado, Bell County  
Edwards (BFZ) Aquifer**



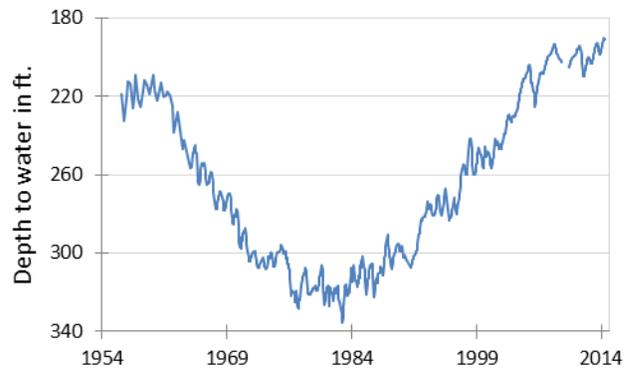
**(9) State Well ID 34-30-907  
Red Springs, Smith County  
Carrizo-Wilcox Aquifer**



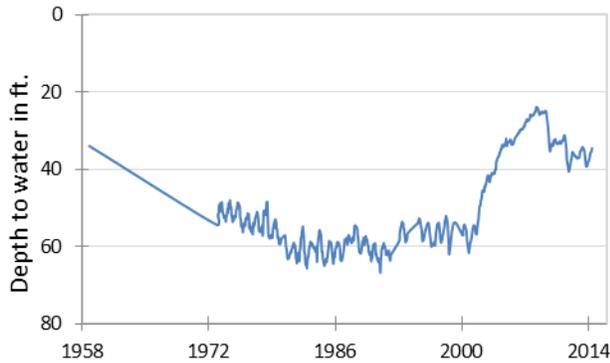
**(10) State Well ID 77-38-103  
Near Cotulla, La Salle County  
Carrizo-Wilcox Aquifer**



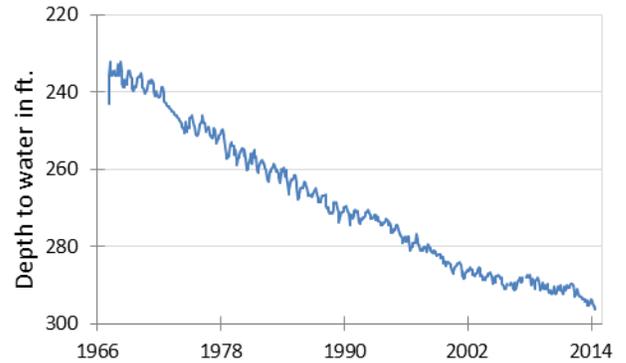
**(11) State Well ID 65-14-409  
Alief, Harris County  
Evangeline Formation-Gulf Coast Aquifer**



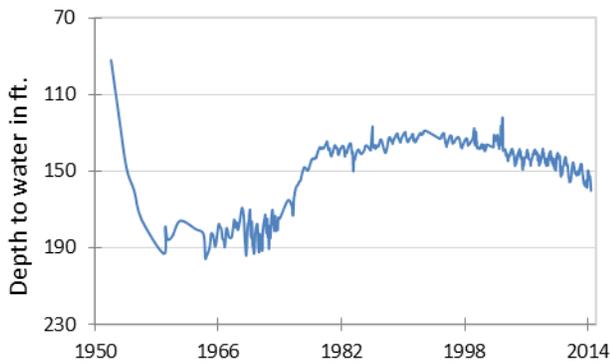
**(12) State Well ID 80-17-502**  
Near Bloomington, Victoria County  
Lissie Formation-Gulf Coast Aquifer



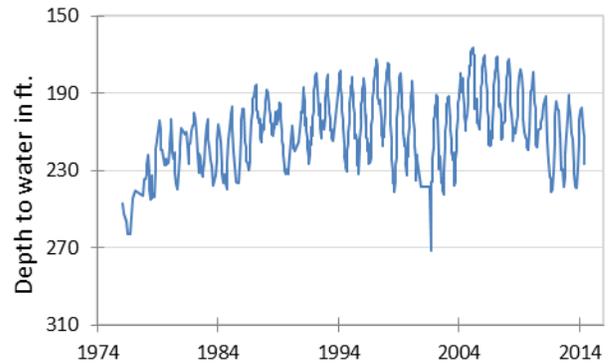
**(13) State Well ID 49-13-301**  
El Paso, El Paso County  
Hueco-Mesilla Bolson Aquifer



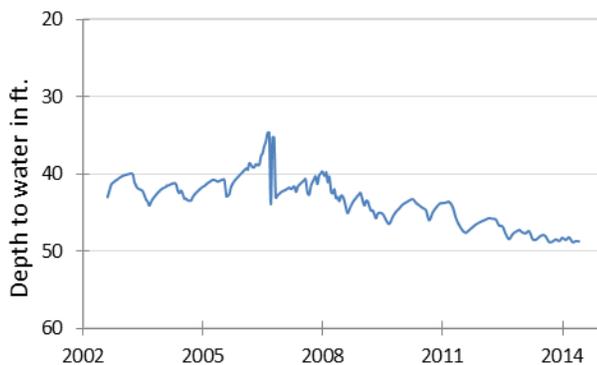
**(14) State Well ID 46-44-501**  
Near Pecos, Reeves County  
Pecos Valley Aquifer



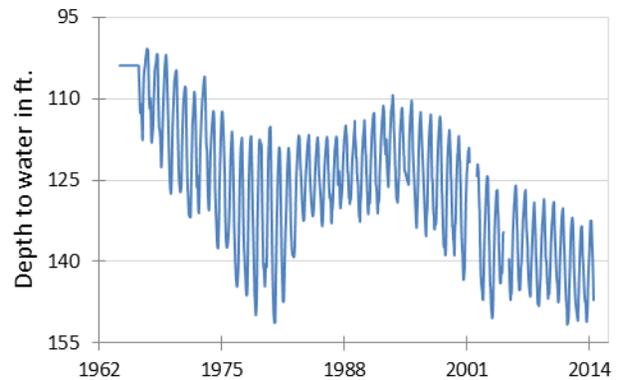
**(15) State Well ID 52-16-802**  
Fort Stockton, Pecos County  
Edwards-Trinity (Plateau) Aquifer



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



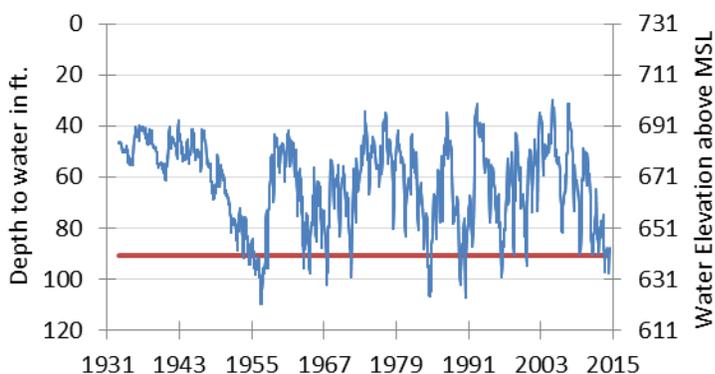
**(17) State Well ID 48-07-516**  
Dell City, Hudspeth County  
Bone Spring - Victorio Peak Aquifer



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

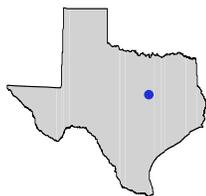


The late May water level measurement in this Edwards (BFZ) Aquifer well, elevation 731 feet above mean sea level, was 88.01 feet below land surface, or 642.99 feet above mean sea level. This was 9.69 feet above last month's measurement, 13.21 feet below last year's measurement, and 41.37 feet below the initial measurement recorded in 1932.



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

***HYDROGRAPH OF THE MONTH***

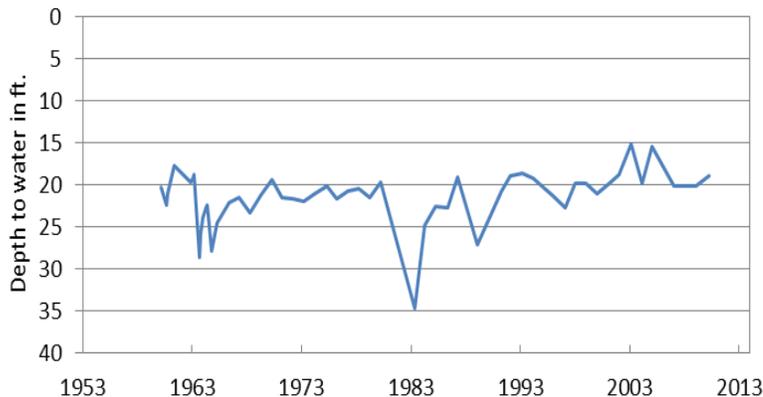


Each month this space features a new hydrograph (marked with the • symbol on the map) depicting different aquifers and different conditions in Texas.

**Brazos River Aquifer**

The Brazos River Alluvium Aquifer is a minor aquifer found along the Brazos River in east central Texas. Its total extent is 1,053 square miles. It is as wide as 7 miles in places and extends along 350 river miles. Groundwater is contained in alluvial floodplain and terrace deposits consisting of clay, silt, sand, and gravel. Water in the aquifer is very hard and fresh to slightly saline, generally containing less than 1,000 milligrams per liter of total dissolved solids but ranging up to 3,000 milligrams per liter in some wells. Recharge to the aquifer occurs primarily from rainfall on the aquifer and subsequent downward leakage to the saturated zone. Discharge from the aquifer occurs primarily through evapotranspiration, discharge to the Brazos River, and withdrawals from wells. Nearly all groundwater withdrawn from the aquifer is used for irrigation, and no significant water-level declines have occurred within the period of record. Some wells can yield as much as 1,000 gallons per minute, but the majority of wells yield from 250 to 500 gallons per minute.

**Well # 39-50-408  
Falls County TX**



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