

# Texas Water Development Board



**W**ater **Conditions**

## RESERVOIR STORAGE

*August 2011*

At the end of August, total storage in 109 of the state's major reservoirs\* was at 19.99 million acre-feet\*\*, or 64% of the total conservation storage capacity, a record low since 1990. This is 1.49 million acre-feet less than a month ago.

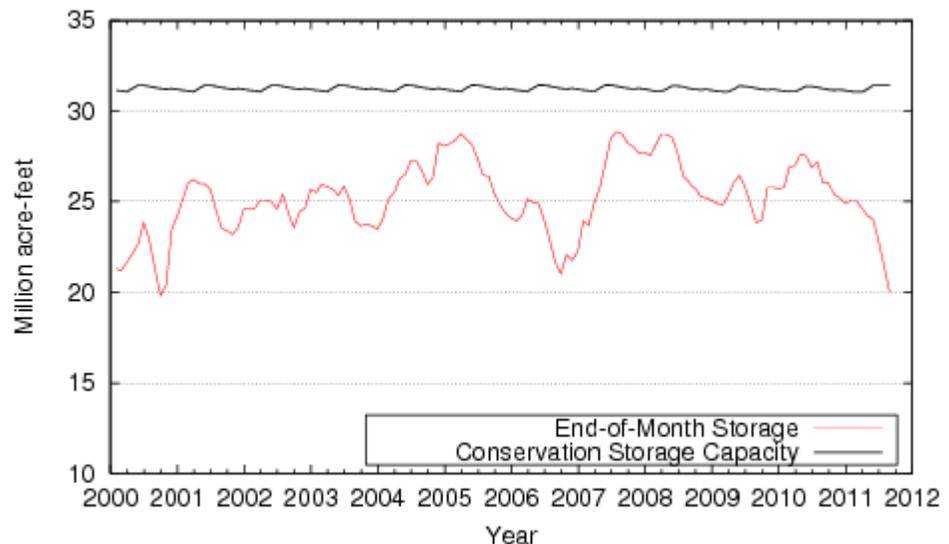
No reservoirs held 100% of their capacity. Nine reservoirs were at or below 10% full: E.V. Spence, O. C. Fisher, Hords Creek Lake, and Meredith were effectively empty, Electra was at 1% full, J. B. Thomas and Twin Buttes were at 2% full, Palo Duro was at 9% full, and Mackenzie was at 10% full.

Only two regions had combined storage at or above 70%: North Central (72%) and East (70). The High Plains (2%) and Trans-Pecos regions (11%) remained very low. Over the last month and last year, storage declined in all regions.

By the end of August, Elephant Butte reservoir held 203,488 acre-feet, or 10.3% of storage capacity. This is 19,498 acft less than a month ago.

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

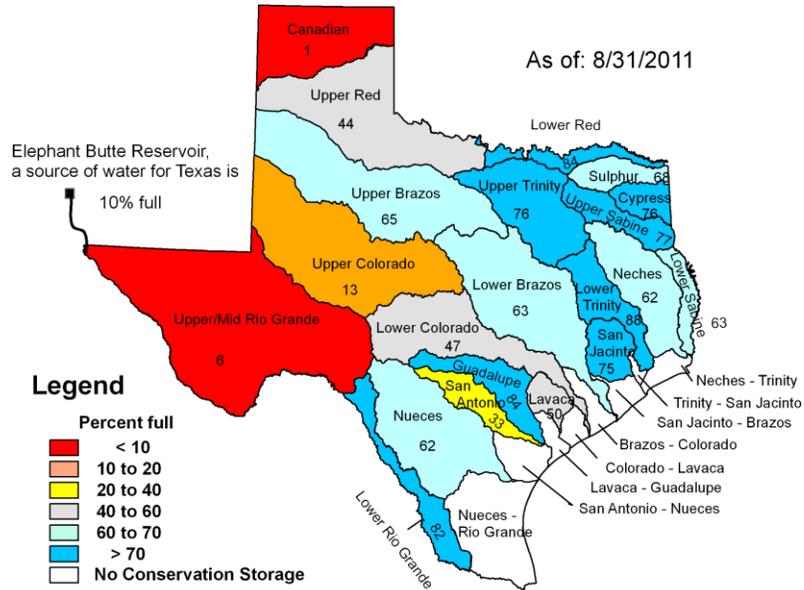
### CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS



Figures are based on the end of the month data at 109 major reservoirs that represent 96 percent of the total conservation storage capacity of the 175 major water supply reservoirs in Texas. Reservoirs with a conservation storage capacity of 5,000 acre-feet or greater are included.

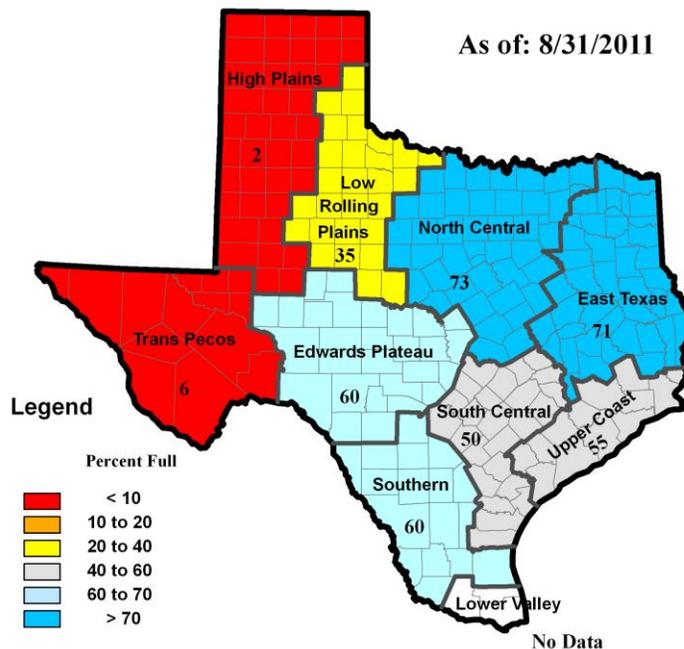
# AUGUST RESERVOIR CONDITION

## Reservoir Storage by River Basin (% Full)\*



\*Percent of combined conservation storage capacity of all major water supply reservoirs for that basin. (dead pools are excluded)

## Reservoir Storage by Climatic Region (% Full)\*



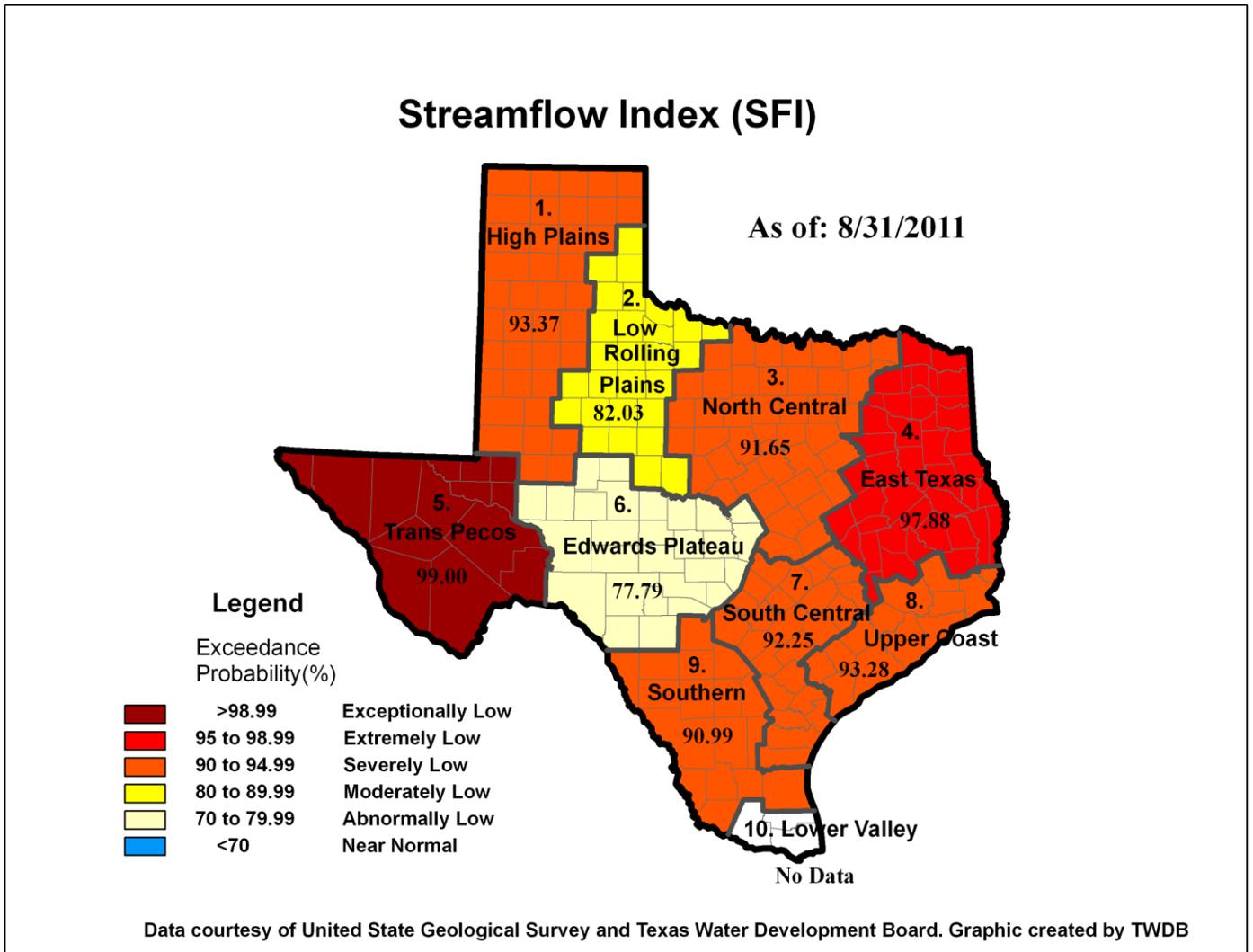
Data courtesy of U. S. Geological Survey and Texas Water Development Board. Graphic created by TWDB.

\*Percent of combined conservation storage capacity of all major water supply reservoirs for that region (dead pools are excluded)

## ***AUGUST STREAMFLOW CONDITION***

Of 29 reporting index stations in August, computed 30-day mean flows were low (70% - 95%) at 13 stations, very low (>95%) at 12 stations, and near normal (30% - 70%) at the remaining 4 stations. Compared to July, flows have increased at 6 index stations and decreased at 18 stations.

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



## CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage		Change since Late July		Change since Late August		
			Late Aug. (acre- feet)	2011 (%)	2011 (acre- feet)	(%)	2010 (acre- feet)	(%)	
<b>HIGH PLAINS</b>									
Palo Duro Reservoir	1	60,897	5,233	9	-798	-1	-15,893	-26	
Meredith, Lake (Texas)	2	500,000	0	0	0	0	-14,877	-3	
Meredith, Lake (Texas & Oklahoma)	(2)	779,556	0	0	0	0	-14,877	-2	
MacKenzie Reservoir	3	46,429	4,615	10	-245	-1	-1,839	-4	
White River Lake	4	29,880	5,684	19	-849	-3	-4,459	-15	
<b>TOTAL</b>		<b>637,206</b>	<b>15,532</b>	<b>2</b>	<b>-1,892</b>	<b>0</b>	<b>-37,068</b>	<b>-6</b>	
<b>LOW ROLLING PLAINS</b>									
Greenbelt Lake	5	59,500	11,843	20	-750	-1	-5,377	-9	
*Electra, Lake	6	5,626	36	1	-33	-1	-494	-9	
N. Fork Buffalo Crk Reservoir	7	15,400	2,799	18	-501	-3	-3,229	-21	
Kemp, Lake	8	245,308	102,272	42	-20,664	-8	-143,036	-58	
Millers Creek Reservoir	9	27,888	11,702	42	-1,229	-4	-8,320	-30	
Alan Henry Reservoir	10	94,808	78,458	83	-1,725	-2	-15,436	-16	
Stamford, Lake	11	51,570	30,762	60	-2,895	-6	-20,808	-40	
J B Thomas, Lake	12	199,931	3,702	2	-727	0	-10,266	-5	
Fort Phantom Hill, Lake	13	70,030	39,978	57	-3,044	-4	-21,176	-30	
Sweetwater, Lake	14	10,006	3,594	36	-366	-4	-2,494	-25	
Colorado City, Lake	15	31,793	10,954	34	-611	-2	-4,888	-15	
Champion Creek Reservoir	16	41,618	4,958	12	-267	-1	-2,160	-5	
Abilene, Lake	17	6,099	2,303	38	-338	-6	-3,467	-57	
Coleman, Lake	18	38,076	16,053	42	-831	-2	-7,285	-19	
Hords Creek Lake	19	5,684	0	0	0	0	-768	-14	
<b>TOTAL</b>		<b>903,337</b>	<b>319,414</b>	<b>35</b>	<b>-33,981</b>	<b>-4</b>	<b>-249,204</b>	<b>-28</b>	
<b>NORTH CENTRAL</b>									
Nocona, Lake (Farmers Crk)	20	21,445	13,861	65	-910	-4	-5,743	-27	
Hubert H Moss Lake	21	24,058	21,386	89	-842	-3	-1,625	-7	
Texoma, Lake (Texas)	22	1,334,295	1,057,116	79	-64,323	-5	-162,379	-12	
Texoma, Lake (Texas & Oklahoma)	(22)	2,668,590	2,114,233	79	-128,646	-5	-324,757	-12	
*Pat Mayse Lake	23	117,844	104,813	89	-5,867	-5	-3,363	-3	
Kickapoo, Lake	24	85,825	46,472	54	-4,110	-5	-30,854	-36	
Arrowhead, Lake	25	235,997	134,109	57	-11,873	-5	-70,026	-30	
Bonham, Lake	26	11,026	8,072	73	-981	-9	-1,384	-13	
Crook, Lake	27	9,195	7,046	77	-665	-7	-485	-5	
Amon G Carter, Lake	28	19,903	13,364	67	-1,221	-6	-5,856	-29	
Ray Roberts, Lake	29	798,758	701,853	88	-24,255	-3	-51,902	-6	
Jim Chapman Lake (Cooper)	30	260,332	119,378	46	-20,710	-8	-71,993	-28	
Graham, Lake	31	45,260	31,994	71	-1,758	-4	-9,450	-21	
*Lost Creek Reservoir	32	11,950	9,518	80	-393	-3	-2,041	-17	
Bridgeport, Lake	33	366,236	233,935	64	-30,800	-8	-114,654	-31	
Lewisville Lake	34	563,228	443,558	79	-42,024	-7	-49,657	-9	
Lavon Lake	35	443,844	267,096	60	-51,825	-12	-73,677	-17	
Hubbard Creek Reservoir	36	318,067	145,729	46	-8,052	-3	-53,774	-17	
Possum Kingdom Lake	37	540,340	411,592	76	-26,246	-5	-105,959	-20	
*Mineral Wells, Lake	38	7,065	4,704	67	-304	-4	-1,609	-23	
Weatherford, Lake	39	17,789	11,616	65	-354	-2	-4,710	-26	
Eagle Mountain Lake	40	179,880	140,174	78	554	0	-26,799	-15	
Worth, Lake	41	24,500	15,124	62	-1,674	-7	-7,052	-29	
Grapevine Lake	42	164,702	145,357	88	-8,457	-5	-8,969	-5	
Ray Hubbard, Lake	43	452,040	357,692	79	-30,790	-7	-12,426	-3	
New Terrell City Lake	44	8,583	6,032	70	-556	-6	-1,285	-15	
Daniel, Lake	45	9,435	2,322	25	-198	-2	-3,021	-32	
Palo Pinto, Lake	46	26,827	17,835	66	-2,273	-8	-3,208	-12	
Benbrook Lake	47	85,648	41,313	48	-19,459	-23	-28,399	-33	
Arlington, Lake	48	40,156	25,174	63	-512	-1	-7,712	-19	

## CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage		Change since Late July 2011 (acre- feet) (%)		Change since Late August 2010 (acre- feet) (%)		
			Late Aug. (acre- feet)	2011 (%)					
<b>NORTH CENTRAL (Continue)</b>									
Joe Pool Lake	49	142,861	123,861	87	-6,435	-5	-12,948	-9	
*Cisco, Lake	50	26,000	11,448	44	-461	-2	-3,621	-14	
Leon, Lake	51	26,421	11,560	44	-897	-3	-6,016	-23	
Granbury, Lake	52	128,046	99,936	78	-4,110	-3	-24,938	-19	
Pat Cleburne, Lake	53	26,008	18,375	71	-1,606	-6	-3,993	-15	
Waxahachie, Lake	54	10,779	8,041	75	-1,060	-10	-1,207	-11	
Bardwell Lake	55	46,122	35,295	77	-3,198	-7	-6,408	-14	
Proctor Lake	56	55,457	22,355	40	-2,040	-4	-16,639	-30	
Whitney, Lake	57	553,349	293,052	53	-15,218	-3	-205,418	-37	
Aquilla Lake	58	44,460	32,307	73	-3,080	-7	-7,476	-17	
Navarro Mills Lake	59	49,826	36,584	73	-4,267	-9	-8,297	-17	
*Halbert, Lake	60	6,033	2,549	42	-234	-4	-1,626	-27	
Richland-Chambers Reservoir	61	1,087,839	845,933	78	-49,605	-5	-179,938	-17	
*Brownwood, Lake	62	131,429	53,918	41	-4,343	-3	-34,424	-26	
Waco, Lake	62	198,943	154,074	77	-11,318	-6	-32,064	-16	
Limestone, Lake	64	208,015	124,613	60	-21,923	-11	-63,836	-31	
Belton Lake	65	435,225	337,077	77	-26,651	-6	-56,179	-13	
Stillhouse Hollow Lake	66	227,771	148,660	65	-20,827	-9	-77,323	-34	
Georgetown, Lake	67	36,823	15,159	41	-3,324	-9	-15,746	-43	
Granger Lake	68	50,779	37,077	73	-3,694	-7	-4,117	-8	
Tawakoni, Lake	69	888,126	697,885	79	-33,435	-4	-112,557	-13	
TOTAL		10,604,540	7,647,994	72	-578,604	-5	-1,794,783	-17	
<b>EAST</b>									
Wright Patman Lake	70	307,973	230,078	75	-34,107	-11	-16,215	-5	
*Sulphur Springs, Lake	71	17,838	9,490	53	-752	-4	-2,702	-15	
Cypress Springs, Lake	72	66,756	56,898	85	-2,066	-3	-6,693	-10	
Bob Sandlin, Lake	73	200,579	138,074	69	-10,458	-5	-43,992	-22	
Fork Reservoir, Lake	74	604,927	457,247	76	-21,062	-3	-104,022	-17	
O the Pines, Lake	75	267,672	197,991	74	-15,918	-6	-57,265	-21	
Cedar Creek Reservoir in Trinity	76	644,686	468,717	73	-39,317	-6	-128,560	-20	
Athens, Lake	77	29,435	22,735	77	-1,554	-5	-5,229	-18	
Palestine, Lake	78	370,907	269,594	73	-19,042	-5	-77,880	-21	
Tyler, Lake	79	73,256	48,911	67	-5,258	-7	-20,946	-29	
Murvault, Lake	80	38,284	25,717	67	-2,136	-6	-6,530	-17	
Jacksonville, Lake	81	25,670	20,909	81	-1,274	-5	-2,834	-11	
Nacogdoches, Lake	82	39,521	21,149	54	-1,881	-5	-11,542	-29	
Houston County Lake	83	17,113	13,742	80	-1,144	-7	-2,354	-14	
Sam Rayburn Reservoir	84	2,857,077	1,719,951	60	-121,462	-4	-517,324	-18	
Toledo Bend Reservoir (Texas)	85	2,236,450	1,406,145	63	-66,286	-3	-434,975	-19	
Toledo Bend Reservoir (TX & LA)	(85)	4,472,900	2,812,291	63	-132,571	-3	-869,950	-19	
*Livingston, Lake	86	1,741,867	1,543,000	89	-101,000	-6	-164,000	-9	
B A Steinhagen Lake	87	66,966	61,623	92	-403	-1	-504	-1	
Conroe, Lake	88	416,188	331,543	80	-17,518	-4	-65,741	-16	
TOTAL		10,023,165	7,043,514	70	-462,638	-5	-1,669,308	-17	
<b>TRANS-PECOS</b>									
Red Bluff Reservoir	89	289,670	31,212	11	-7,863	-3	-18,919	-7	
TOTAL		289,670	31,212	11	-7,863	-3	-18,919	-7	

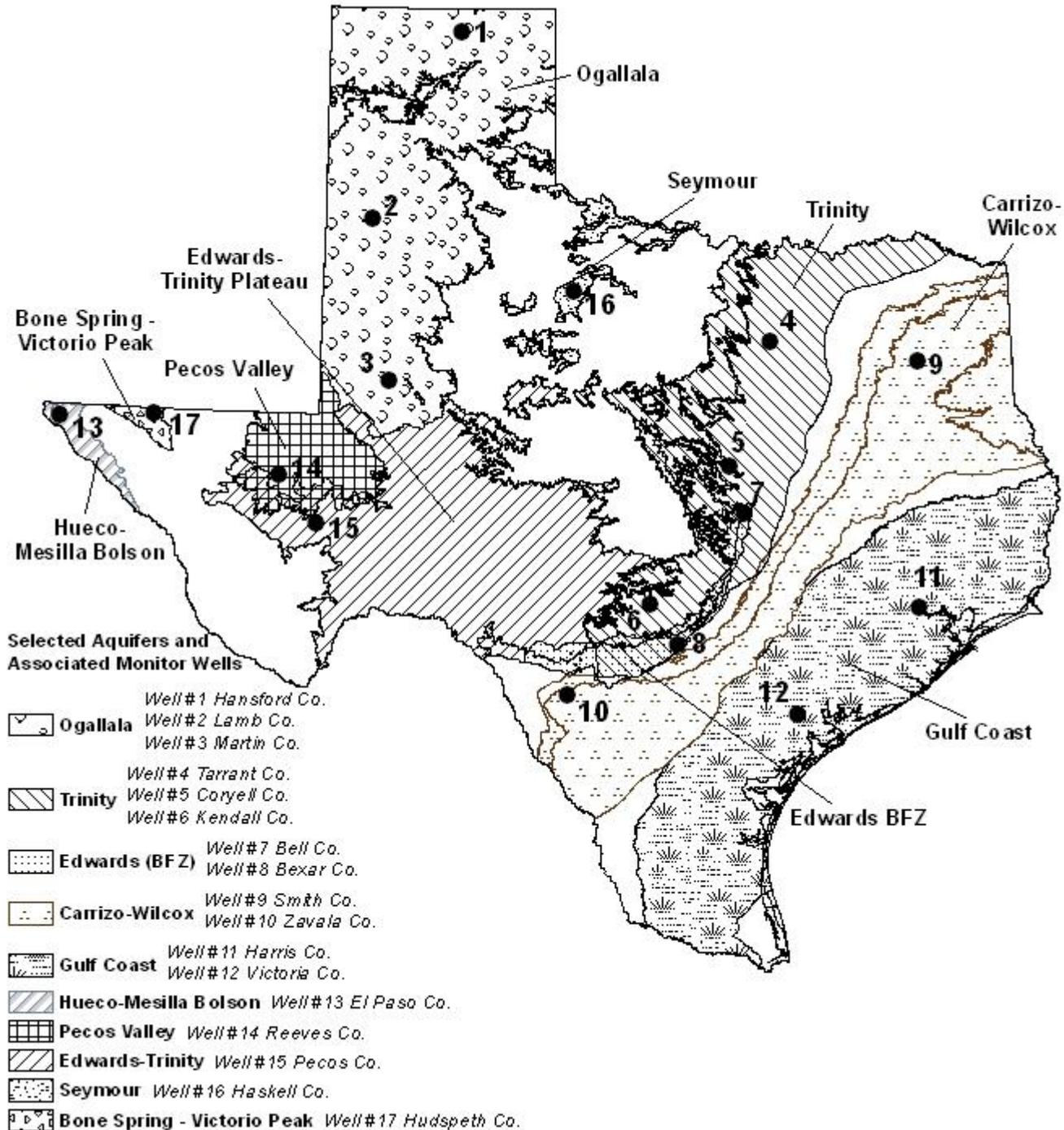
## CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage		Change since Late July 2011 (acre- feet) (%)		Change since Late August 2010 (acre- feet) (%)		
			Late Aug. (acre- feet)	2011 (%)					
<b>EDWARDS PLATEAU</b>									
Oak Creek Reservoir	90	39,260	16,519	42	-1,091	-3	-6,997	-18	
E V Spence Reservoir	91	517,272	2,564	0	-703	0	-18,416	-4	
O C Fisher Lake	92	79,483	0	0	0	0	0	0	
*O H Ivie Reservoir	93	554,335	123,868	22	-5,238	-1	-82,883	-15	
Twin Buttes Reservoir	94	177,850	3,647	2	-3,028	-2	-20,582	-12	
Brady Creek Reservoir	95	29,110	8,217	28	-785	-3	-6,800	-23	
Buchanan, Lake	96	875,610	388,830	44	-80,919	-9	-289,036	-33	
Lyndon B Johnson, Lake	97	113,323	111,683	99	729	1	1,033	1	
*Amistad Reservoir (Texas)	98	1,840,849	1,650,000	90	-33,000	-2	-190,000	-10	
*Amistad Reservoir (TX & Mexico)	(98)	3,275,532	2,927,000	89	-27,000	-1	-348,532	-11	
<b>TOTAL</b>		<b>4,227,092</b>	<b>2,305,328</b>	<b>55</b>	<b>-124,035</b>	<b>-3</b>	<b>-613,681</b>	<b>-15</b>	
<b>SOUTH CENTRAL</b>									
Travis, Lake	99	1,113,255	458,453	41	-60,991	-5	-414,599	-37	
*Austin, Lake	100	21,804	20,579	94	-317	-1	-438	-2	
Somerville Lake	101	147,104	66,142	45	-17,478	-12	-72,533	-49	
Canyon Lake	102	378,781	321,716	85	-10,734	-3	-47,111	-12	
Medina Lake	103	254,823	84,514	33	-13,322	-5	-92,492	-36	
*Coletto Creek Reservoir	104	31,040	23,113	74	-1,025	-3	-6,051	-19	
<b>TOTAL</b>		<b>1,946,807</b>	<b>974,517</b>	<b>50</b>	<b>-103,867</b>	<b>-5</b>	<b>-633,224</b>	<b>-33</b>	
<b>UPPER COAST</b>									
Houston, Lake	105	128,863	85,010	66	-10,340	-8	-43,853	-34	
Texana, Lake	106	153,246	76,974	50	-9,616	-6	-65,507	-43	
<b>TOTAL</b>		<b>282,109</b>	<b>161,984</b>	<b>57</b>	<b>-19,956</b>	<b>-7</b>	<b>-109,360</b>	<b>-39</b>	
<b>SOUTHERN</b>									
Choke Canyon Reservoir	107	695,262	463,216	67	-17,531	-3	-125,690	-18	
Corpus Christi, Lake	108	256,961	125,784	49	-19,713	-8	-108,510	-42	
*Falcon Reservoir (Texas)	109	1,551,034	897,000	58	-116,000	-7	-654,000	-42	
*Falcon Reservoir (TX & Mexico)	(109)	2,646,817	1,353,000	51	-135,000	-5	-1,293,817	-49	
<b>TOTAL</b>		<b>2,503,257</b>	<b>1,486,000</b>	<b>59</b>	<b>-153,244</b>	<b>-6</b>	<b>-888,200</b>	<b>-35</b>	
<b>STATE TOTAL</b>		<b>31,417,183</b>	<b>19,985,495</b>	<b>64</b>	<b>-1,486,080</b>	<b>-5</b>	<b>-6,013,747</b>	<b>-19</b>	
* Conservation volume is used as conservation storage capacity because the dead storage is unknown.									
In Addition									
Elephant Butte Reservoir		1,975,000	203,488	10.3	-19,498	-1	-179,620	-9	

### 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  $100 * (\text{current conservation storage} - \text{past conservation storage}) / \text{conservation storage capacity}$ . Figures shown are for the Texas share of conservation storage in all reservoirs.

# AUGUST 2011 GROUNDWATER LEVELS IN OBSERVATION WELLS



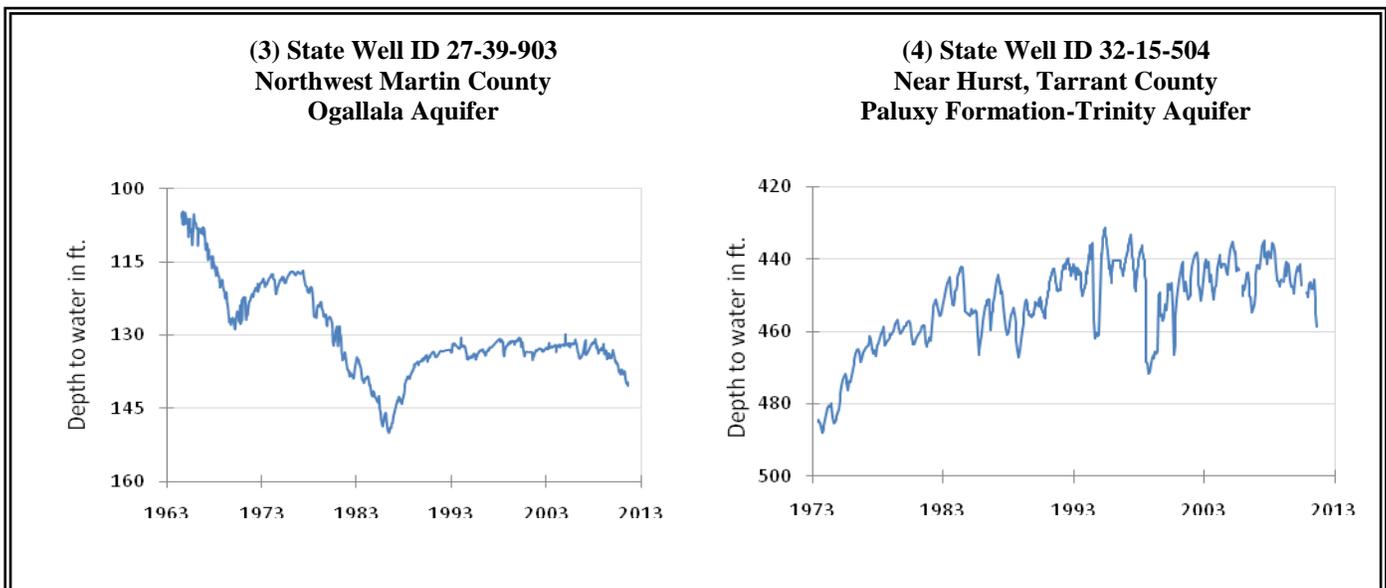
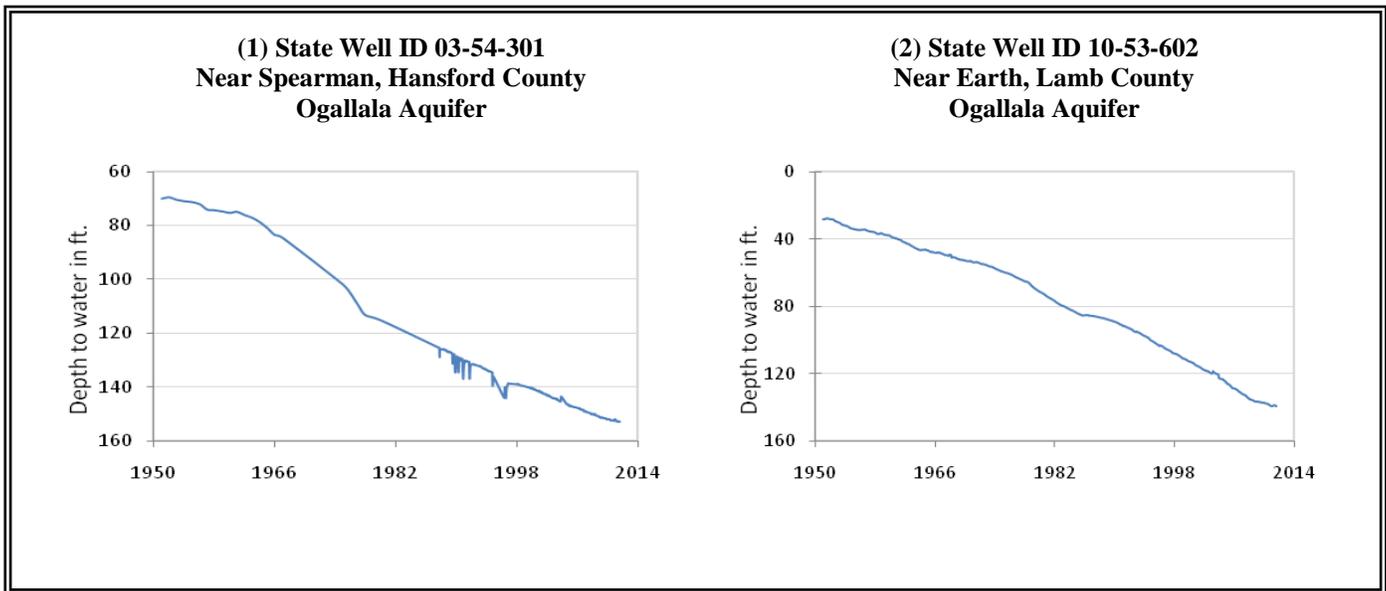
## August 2011

Water level measurements were available for all seventeen key monitoring wells in the state. Water levels rose in three of the monitoring wells since the beginning of August, ranging from 0.16 feet in the Haskell County Seymour Aquifer well to 2.57 feet in the Zavala County Carrizo-Wilcox Aquifer well. Water levels declined in the remaining fourteen monitoring wells, ranging from 0.03 feet in the Hansford County Ogallala Aquifer well to 9.46 feet in the Coryell County Trinity Aquifer well. The J-17 well in San Antonio recorded a water level of 90.81 feet below land surface. This water level is 9.81 feet below the Stage II critical management level in that segment of the Edwards Aquifer, and 0.19 feet above the stage III level. Stage II restrictions were triggered on June 1, 2011, by the Edwards Aquifer Authority after the 10-day average of water levels fell below the 650-foot elevation (above mean sea level) or 81 feet below land surface.

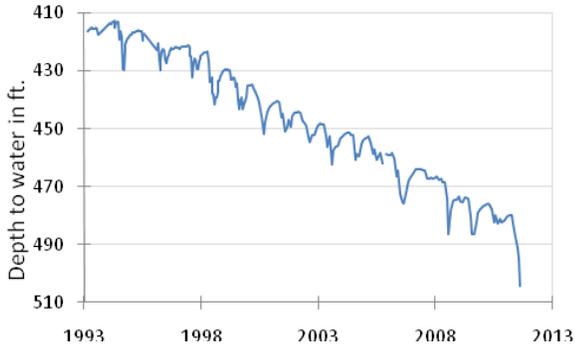
\* ID is used in this publication to differentiate between the monitoring well number (1 - 17) as displayed on the aquifer map and the TWDB's six- or seven-digit state well "identification" number.

Monitoring Well	Aug 2011	July 2011	Month Change	Year Change	Historical Change
(1)Hansford 0354301	152.67	152.64	-0.03	-0.50	-82.55
(2)Lamb 1053602	139.26	139.01	-0.25	-0.94	-111.11
(3)Martin 2739903	140.40	139.68	-0.72	-2.78	-35.51
(4)Tarrant 3215504	458.72	455.16	-3.56	N/A	-80.72
(5)Coryell 4035404	504.44	494.98	-9.46	-21.76	-212.44
(6)Kendall 6802609	160.00	154.95	-5.05	-34.88	-100.00
(7)Bell 5804816	126.65	125.84	-0.81	-3.60	-3.52
(8)Bexar 6837203	90.81	88.88	-1.93	-27.49	-44.17
(9)Smith 3430907	437.22	434.78	-2.44	-2.88	-71.22
(10)Zavala 7702509	377.53	380.10	2.57	4.73	-13.26
(11)Harris 6514409	203.17	198.91	-4.26	-3.68	-67.67
(12)Victoria 8017502	37.45	35.09	-2.36	-3.98	-3.45
(13)El Paso 4913301	290.14	290.35	0.21	1.23	-58.24
(14)Reeves 4644501	155.71	154.03	-1.68	-4.09	-63.62
(15)Pecos 5216802	241.33	234.5	-6.83	-32.57	5.55
(16)Haskell 2135748	47.47	47.63	0.16	-1.47	-6.14
(17)Hudspeth 4807516	151.61	149.12	-2.49	-4.09	-47.69

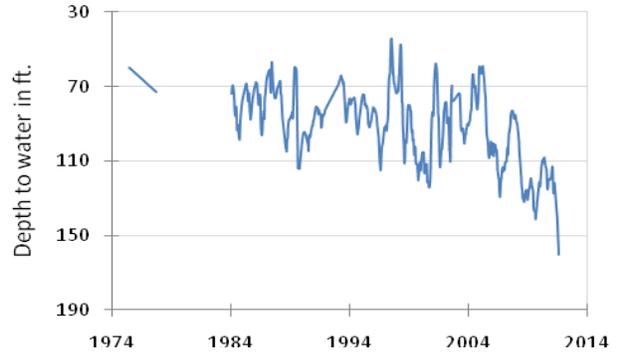
## AUGUST GROUNDWATER LEVELS IN OBSERVATION WELLS



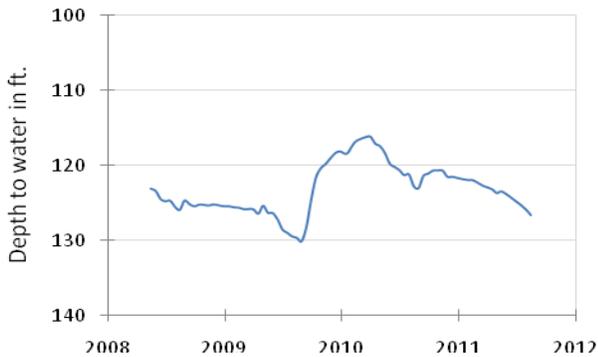
**(5) State Well ID 40-35-404  
Gatesville, Coryell County  
Hosston Formation-Trinity Aquifer**



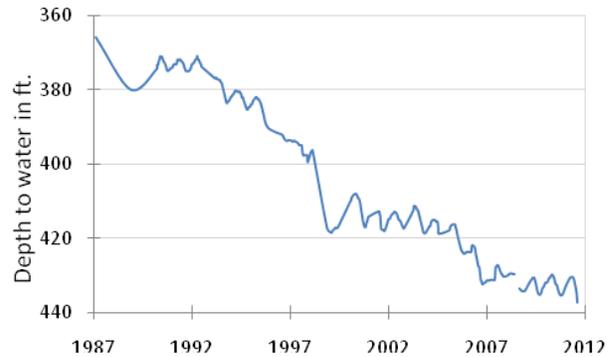
**(6) State Well ID 68-02-609  
Waring, Kendall County  
Cow Creek Formation-Trinity Aquifer**



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



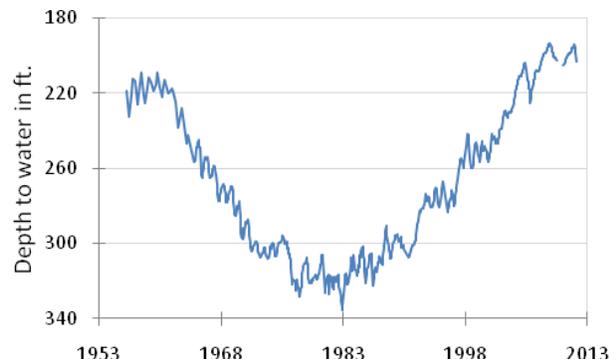
**(9) State Well ID 34-30-907  
Red Springs, Smith County  
Carrizo-Wilcox Aquifer**



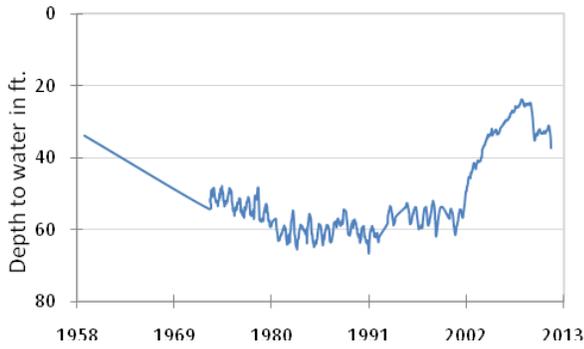
**(10) State Well ID 77-02-509  
La Pryor, Zavala County  
Carrizo-Wilcox Aquifer**



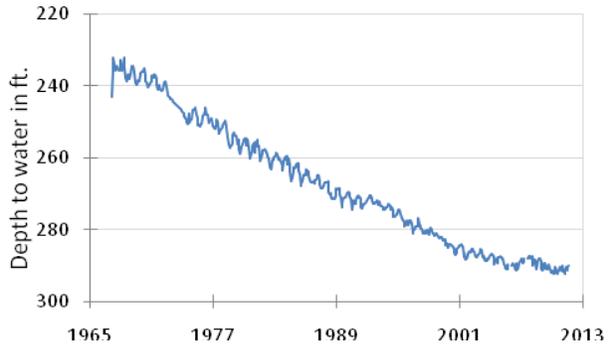
**(11) State Well ID 65-14-409  
Alief, Harris County  
Evangeline Formation-Gulf Coast Aquifer**



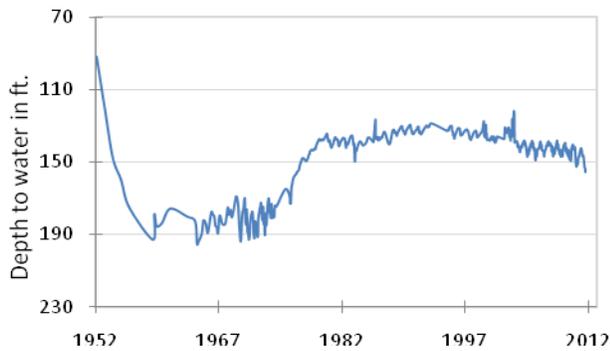
**(12) State Well ID 80-17-502**  
**Near Bloomington, Victoria County**  
**Lissie Formation-Gulf Coast Aquifer**



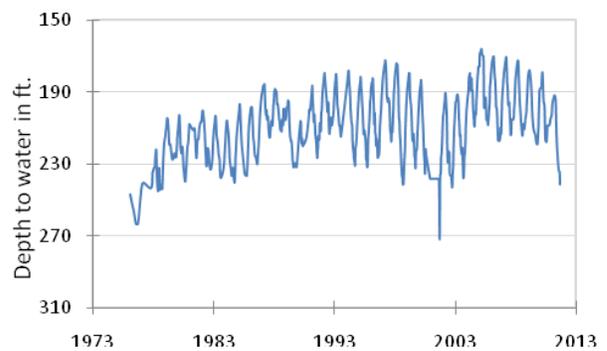
**(13) State Well ID 49-13-301**  
**El Paso, El Paso County**  
**Hueco-Mesilla Bolson Aquifer**



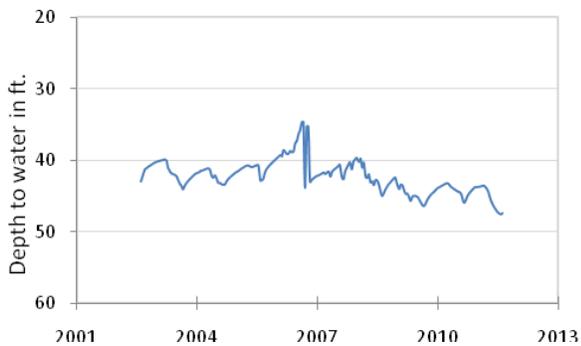
**(14) State Well ID 46-44-501**  
**Near Pecos, Reeves County**  
**Pecos Valley Aquifer**



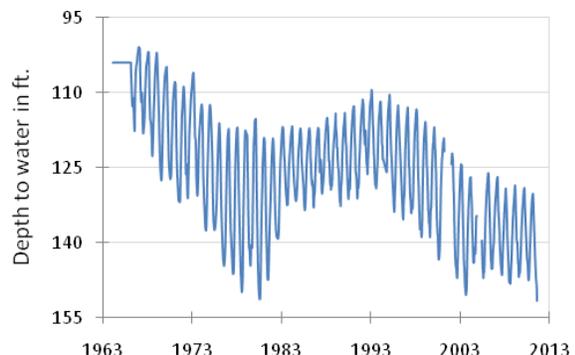
**(15) State Well ID 52-16-802**  
**Fort Stockton, Pecos County**  
**Edwards-Trinity (Plateau) Aquifer**



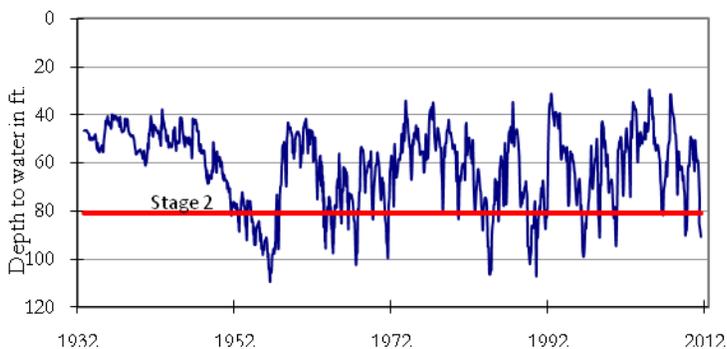
**(16) State Well ID 21-35-748**  
**Near O'Brien, Haskell County**  
**Seymour Aquifer**



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



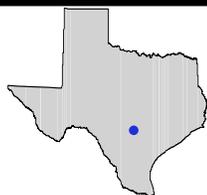
**(8) State Well ID 68-37-203 (J-17)  
In San Antonio, Bexar County  
Edwards (BFZ) Aquifer**



The late Aug water level measurement in this Edwards (BFZ) Aquifer well, elevation 731 feet above sea level, was 90.81 feet below land surface. This was 1.93 feet below last month's measurement, 27.49 feet below last year's measurement, and 44.17 feet below the initial measurement recorded in 1932.

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

***HYDROGRAPH OF THE MONTH***



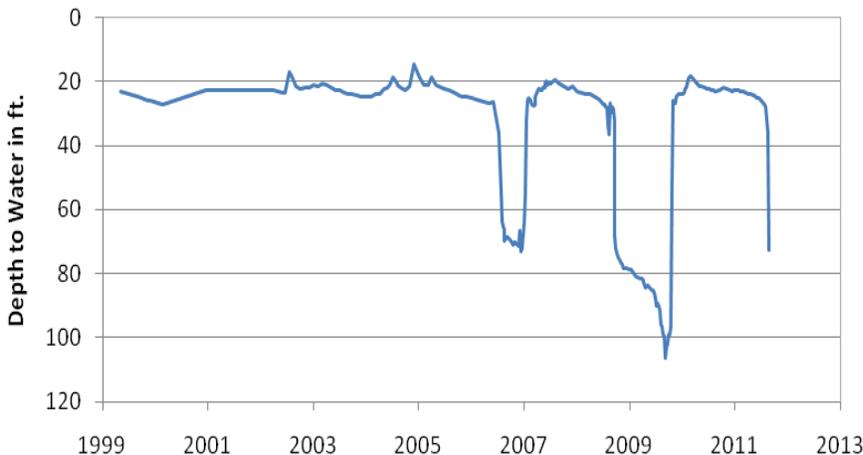
Each month this space features a new hydrograph (marked with the • symbol on the map) depicting different aquifers and different conditions in Texas.

**Trinity Aquifer**

This unused public-supply well for the city of Blanco is 500 feet deep. It is completed in the Middle Trinity Aquifer (or Hensel/Cow Creek/Lower Glen Rose formations of the Trinity Aquifer). As reflected in the hydrograph, water levels are currently in decline and have declined in the past during recent droughts.

The Blanco-Pedernales Groundwater Conservation District also publishes this hydrograph to demonstrate an interesting surface water/groundwater relationship in this area, approximately ¼ mi. from the Blanco River. The relatively dramatic water level decline occurs when water in the river quits flowing over the dam at the Blanco State Park; this well may be intersecting a possible primary groundwater flowpath that provides water to the river. These trends correlate to those seen in other nearby monitored wells, although water level declines in those wells are not as drastic.

**Well 57-61-223  
Blanco County**



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