

Texas Water Development Board



WATER Conditions

RESERVOIR STORAGE

September 2011

At the end of September, total storage in 109 of the state's major reservoirs* was at 18.8 million acre-feet**, or 60% of the total conservation storage capacity, a record low since 1990. This is 1.16 million acre-feet less than a month ago.

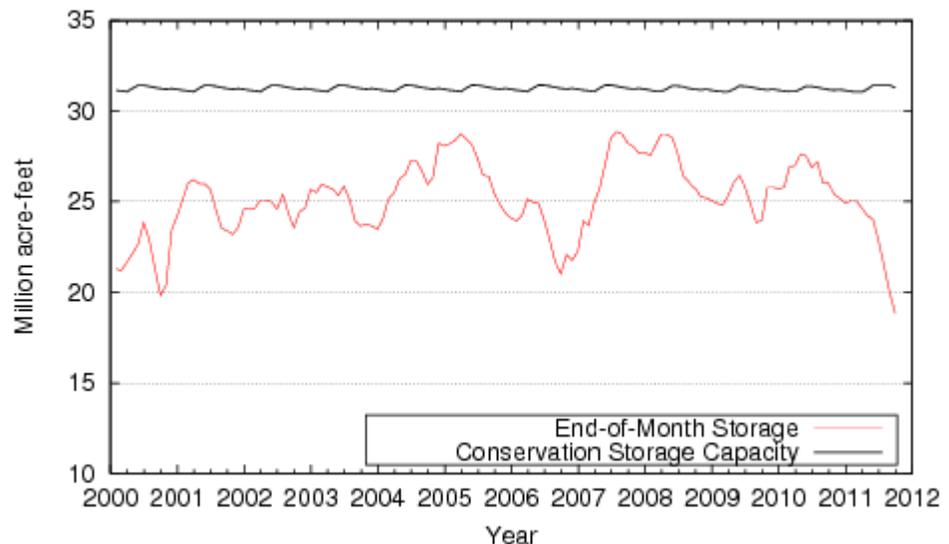
No reservoirs held 100% of their capacity. Ten reservoirs were at or below 10% full: E.V. Spence, O. C. Fisher, Hords Creek Lake, Electra, and Meredith were effectively empty, Twin Buttes at 1% full, J. B. Thomas was at 2% full, Red Bluff was at 3%, Palo Duro was at 8% full, and Mackenzie was at 10% full.

All regions were under 70% in combined storage, with North Central (68%) and East (67%) being the highest and the High Plains (2%) and Trans-Pecos regions (3%) being the lowest. Over the last month and last year, storage declined in all regions.

At the end of September, Elephant Butte reservoir held 201,056 acre-feet, or 10.0% of storage capacity. This is 2,432 acft less than a month ago.

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

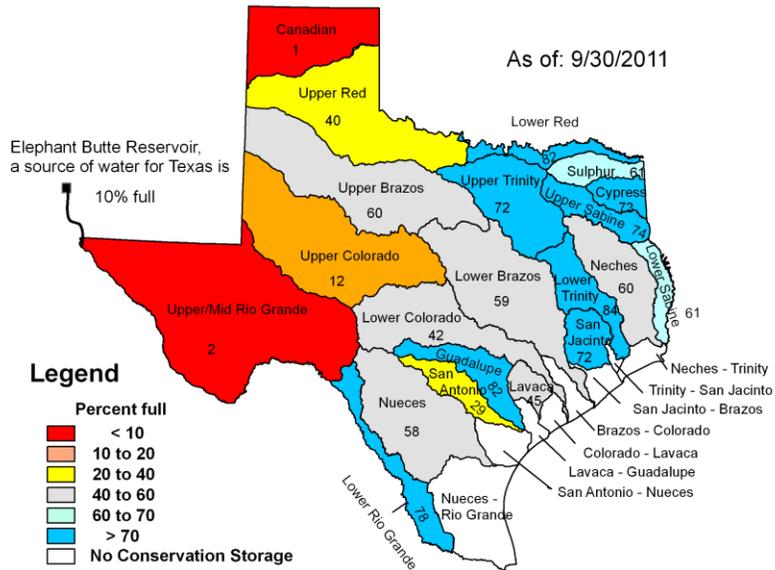
CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS



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.

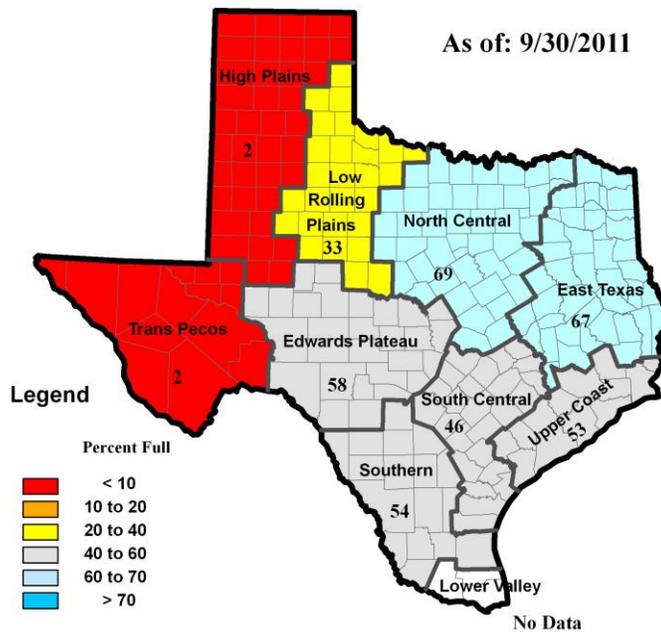
SEPTEMBER RESERVOIR CONDITION

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)*



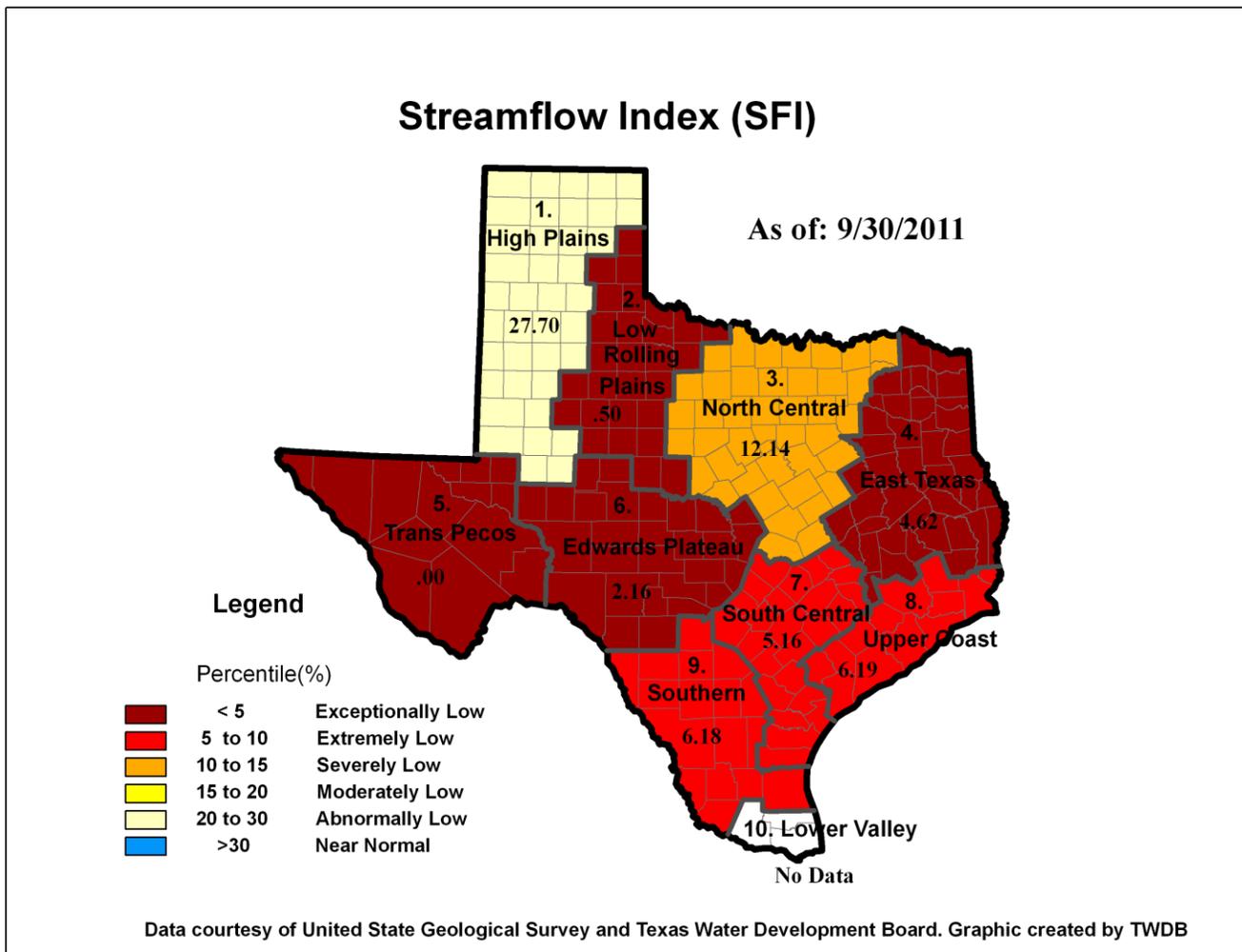
Data courtesy of U. S. Geological Survey and Texas Water Development Board. Graphic created by TWDB.

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

SEPTEMBER STREAMFLOW CONDITION

Of 29 reporting index stations in August, computed 30-day mean flows were exceptionally low (<5% rank) at 14 stations, extremely low (5%-10%) at 1 station, severely low (10-15%) at 6 stations, moderately low (15%-20%) at 4 stations, abnormally low (20%-30%) at 2 stations, and near normal (30% - 70%) at the remaining 2 stations. Compared to August, flows have increased at 8 index stations and decreased at 10 stations.

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



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.

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	No. on Map	Conservation Storage		Conservation Storage		Change since Late Aug.		Change since Late Sep.	
		Capacity (acre-feet)	Late Sep. (acre-feet)	2011 (%)	Late Aug. 2011 (acre-feet)	(%)	Late Sep. 2010 (acre-feet)	(%)	
HIGH PLAINS									
Palo Duro Reservoir	1	60,897	4,649	8	-584	-1	-13,926	-23	
Meredith, Lake (Texas)	2	500,000	0	0	0	0	-10,562	-2	
Meredith, Lake (Texas & Oklahoma)	(2)	779,556	0	0	0	0	-10,562	-1	
MacKenzie Reservoir	3	46,429	4,458	10	-157	0	-1,959	-4	
White River Lake	4	29,880	5,125	17	-559	-2	-5,484	-18	
TOTAL		637,206	14,232	2	-1,300	0	-31,931	-5	
LOW ROLLING PLAINS									
Greenbelt Lake	5	59,500	11,280	19	-563	-1	-5,383	-9	
*Electra, Lake	6	5,626	25	0	-11	0	-493	-9	
N. Fork Buffalo Crk Reservoir	7	15,400	2,494	16	-305	-2	-4,423	-29	
Kemp, Lake	8	245,308	89,826	37	-12,446	-5	-155,482	-63	
Millers Creek Reservoir	9	27,888	10,886	39	-816	-3	-10,188	-37	
Alan Henry Reservoir	10	94,808	77,036	81	-1,422	-1	-16,724	-18	
Stamford, Lake	11	51,570	28,676	56	-2,086	-4	-22,894	-44	
J B Thomas, Lake	12	199,931	3,127	2	-575	0	-10,407	-5	
Fort Phantom Hill, Lake	13	70,030	37,594	54	-2,384	-3	-25,526	-36	
Sweetwater, Lake	14	10,006	3,316	33	-278	-3	-2,680	-27	
Colorado City, Lake	15	31,793	10,397	33	-557	-2	-5,604	-18	
Champion Creek Reservoir	16	41,618	4,725	11	-233	-1	-2,528	-6	
Abilene, Lake	17	6,099	1,985	33	-318	-5	-3,526	-58	
Coleman, Lake	18	38,076	15,148	40	-905	-2	-7,687	-20	
Hords Creek Lake	19	5,684	0	0	0	0	-692	-12	
TOTAL		903,337	296,515	33	-22,899	-3	-274,237	-30	
NORTH CENTRAL									
Nocona, Lake (Farmers Crk)	20	21,445	13,180	61	-681	-3	-6,437	-30	
Hubert H Moss Lake	21	24,058	20,572	86	-814	-3	-3,219	-13	
Texoma, Lake (Texas)	22	1,334,295	1,020,729	76	-36,387	-3	-213,438	-16	
Texoma, Lake (Texas & Oklahoma)	(22)	2,668,590	2,041,458	76	-72,775	-3	-426,877	-16	
*Pat Mayse Lake	23	117,844	100,004	85	-4,809	-4	-7,899	-7	
Kickapoo, Lake	24	85,825	43,436	51	-3,036	-4	-34,056	-40	
Arrowhead, Lake	25	235,997	125,780	53	-8,329	-4	-79,554	-34	
Bonham, Lake	26	11,026	7,360	67	-712	-6	-3,110	-28	
Crook, Lake	27	9,195	6,540	71	-506	-6	-1,271	-14	
Amon G Carter, Lake	28	19,903	12,451	63	-913	-5	-6,639	-33	
Ray Roberts, Lake	29	798,758	679,560	85	-22,293	-3	-119,198	-15	
Jim Chapman Lake (Cooper)	30	260,332	101,309	39	-18,069	-7	-79,698	-31	
Graham, Lake	31	45,260	30,216	67	-1,778	-4	-14,653	-32	
*Lost Creek Reservoir	32	11,950	9,199	77	-319	-3	-2,343	-20	
Bridgeport, Lake	33	366,236	223,145	61	-10,790	-3	-131,395	-36	
Lewisville Lake	34	563,228	409,021	73	-34,537	-6	-154,207	-27	
Lavon Lake	35	443,844	230,038	52	-37,058	-8	-121,307	-27	
Hubbard Creek Reservoir	36	318,067	140,308	44	-5,421	-2	-60,813	-19	
Possum Kingdom Lake	37	540,340	381,941	71	-29,651	-5	-133,828	-25	
*Mineral Wells, Lake	38	7,065	4,536	64	-168	-2	-2,490	-35	
Weatherford, Lake	39	17,789	10,616	60	-1,000	-6	-5,689	-32	
Eagle Mountain Lake	40	179,880	130,643	73	-9,531	-5	-48,120	-27	
Worth, Lake	41	24,500	15,744	64	620	3	-6,297	-26	
Grapevine Lake	42	164,702	138,131	84	-7,226	-4	-26,571	-16	
Ray Hubbard, Lake	43	452,040	336,962	75	-20,730	-5	-60,854	-13	
New Terrell City Lake	44	8,583	5,621	65	-411	-5	-1,656	-19	
Daniel, Lake	45	9,435	2,110	22	-212	-2	-3,430	-36	
Palo Pinto, Lake	46	26,827	16,073	60	-1,762	-7	-10,624	-40	
Benbrook Lake	47	85,648	34,456	40	-6,857	-8	-42,631	-50	
Arlington, Lake	48	40,156	22,750	57	-2,424	-6	-17,406	-43	

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

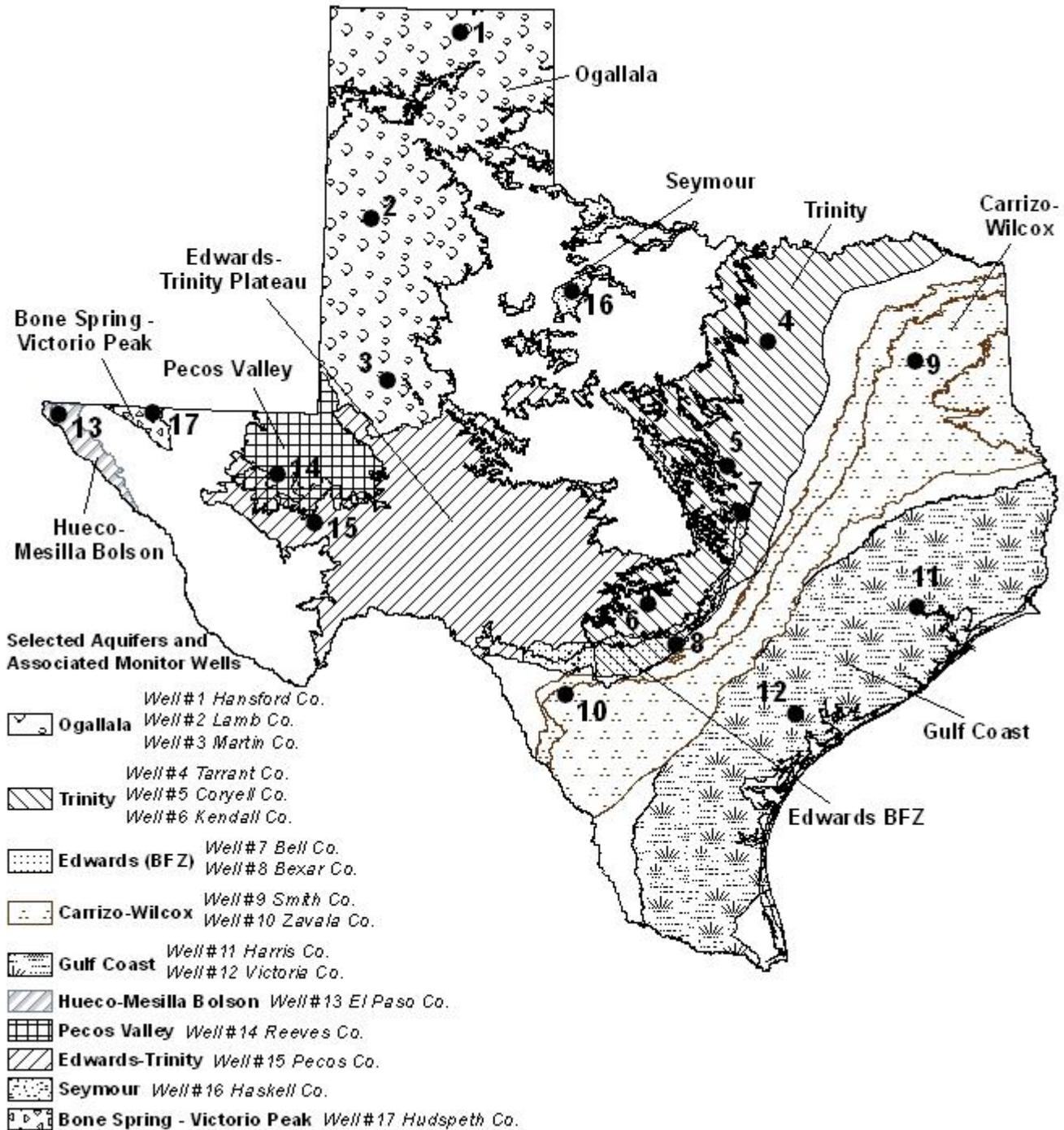
Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage		Change since Late Aug. 2011		Change since Late Sep. 2010		
			Late Sep. (acre-feet)	2011 (%)	(acre-feet)	(%)	(acre-feet)	(%)	
NORTH CENTRAL (Continue)									
Joe Pool Lake	49	142,861	118,875	83	-4,986	-3	-23,986	-17	
*Cisco, Lake	50	26,000	11,031	42	-417	-2	-4,197	-16	
Leon, Lake	51	26,421	10,861	41	-699	-3	-6,995	-26	
Granbury, Lake	52	128,046	81,541	64	-18,395	-14	-43,862	-34	
Pat Cleburne, Lake	53	26,008	17,219	66	-1,156	-4	-8,789	-34	
Waxahachie, Lake	54	10,779	7,732	72	-309	-3	-2,241	-21	
Bardwell Lake	55	46,122	33,297	72	-1,998	-4	-12,825	-28	
Proctor Lake	56	55,457	18,838	34	-3,517	-6	-18,248	-33	
Whitney, Lake	57	553,349	279,476	51	-13,576	-2	-238,697	-43	
Aquilla Lake	58	44,460	30,212	68	-2,095	-5	-14,248	-32	
Navarro Mills Lake	59	49,826	33,324	67	-3,260	-7	-16,084	-32	
*Halbert, Lake	60	6,033	2,581	43	32	1	-1,425	-24	
Richland-Chambers Reservoir	61	1,087,839	801,838	74	-44,095	-4	-247,416	-23	
*Brownwood, Lake	62	131,429	50,050	38	-3,868	-3	-37,167	-28	
Waco, Lake	62	198,943	145,789	73	-8,285	-4	-53,154	-27	
Limestone, Lake	64	208,015	116,010	56	-8,603	-4	-68,637	-33	
Belton Lake	65	435,225	313,477	72	-23,600	-5	-97,495	-22	
Stillhouse Hollow Lake	66	227,771	141,059	62	-7,601	-3	-86,712	-38	
Georgetown, Lake	67	36,823	13,237	36	-1,922	-5	-23,586	-64	
Granger Lake	68	50,779	33,954	67	-3,123	-6	-9,006	-18	
Tawakoni, Lake	69	888,126	667,677	75	-30,208	-3	-129,737	-15	
TOTAL		10,604,540	7,200,509	68	-447,485	-4	-2,543,340	-24	
EAST									
Wright Patman Lake	70	307,973	202,422	66	-27,656	-9	-33,214	-11	
*Sulphur Springs, Lake	71	17,838	8,878	50	-612	-3	-3,030	-17	
Cypress Springs, Lake	72	66,756	54,939	82	-1,959	-3	-7,495	-11	
Bob Sandlin, Lake	73	200,579	132,369	66	-5,705	-3	-44,292	-22	
Fork Reservoir, Lake	74	604,927	438,808	73	-18,439	-3	-105,932	-18	
O the Pines, Lake	75	267,672	183,695	69	-14,296	-5	-55,238	-21	
Cedar Creek Reservoir in Trinity	76	644,686	445,586	69	-23,131	-4	-136,120	-21	
Athens, Lake	77	29,435	21,602	73	-1,133	-4	-5,315	-18	
Palestine, Lake	78	370,907	254,557	69	-15,037	-4	-79,744	-21	
Tyler, Lake	79	73,256	44,798	61	-4,113	-6	-22,533	-31	
Murvault, Lake	80	38,284	24,180	63	-1,537	-4	-7,358	-19	
Jacksonville, Lake	81	25,670	20,264	79	-645	-3	-3,014	-12	
Nacogdoches, Lake	82	39,521	19,734	50	-1,415	-4	-11,445	-29	
Houston County Lake	83	17,113	12,825	75	-917	-5	-2,858	-17	
Sam Rayburn Reservoir	84	2,857,077	1,649,937	58	-70,014	-2	-436,726	-15	
Toledo Bend Reservoir (Texas)	85	2,236,450	1,362,590	61	-43,555	-2	-283,845	-13	
Toledo Bend Reservoir (TX & LA)	(85)	4,472,900	2,725,181	61	-87,110	-2	-567,689	-13	
*Livingston, Lake	86	1,741,867	1,463,000	84	-80,000	-5	-278,867	-16	
B A Steinhagen Lake	87	66,966	58,902	88	-2,721	-4	-1,108	-2	
Conroe, Lake	88	416,188	309,249	74	-22,294	-5	-85,776	-21	
TOTAL		10,023,165	6,708,335	67	-335,179	-3	-1,603,910	-16	
TRANS-PECOS									
Red Bluff Reservoir	89	130,170	3,790	3	-3,922	-3	-24,869	-19	
TOTAL		130,170	3,790	3	-3,922	-3	-24,869	-19	

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	No. on Map	Conservation Storage		2011 (%)	Change since Late Aug. 2011		Change since Late Sep. 2010		
		Capacity (acre-feet)	Late Sep. (acre-feet)		(acre-feet)	(%)	(acre-feet)	(%)	
EDWARDS PLATEAU									
Oak Creek Reservoir	90	39,260	15,592	40	-927	-2	-9,169	-23	
E V Spence Reservoir	91	517,272	2,362	0	-202	0	-18,618	-4	
O C Fisher Lake	92	79,483	0	0	0	0	0	0	
*O H Ivie Reservoir	93	554,335	114,148	21	-9,720	-2	-84,520	-15	
Twin Buttes Reservoir	94	177,850	975	1	-2,672	-2	-21,171	-12	
Brady Creek Reservoir	95	29,110	7,625	26	-592	-2	-6,982	-24	
Buchanan, Lake	96	875,610	332,113	38	-56,717	-6	-350,438	-40	
Lyndon B Johnson, Lake	97	113,323	112,533	99	850	1	607	1	
*Amistad Reservoir (Texas)	98	1,840,849	1,594,000	87	-56,000	-3	-247,000	-13	
*Amistad Reservoir (TX & Mexico)	(98)	3,275,532	2,860,000	87	-67,000	-2	-415,532	-13	
TOTAL		4,227,092	2,179,348	52	-125,980	-3	-737,291	-17	
SOUTH CENTRAL									
Travis, Lake	99	1,113,255	410,804	37	-47,649	-4	-525,328	-47	
*Austin, Lake	100	21,804	20,549	94	-30	0	-332	-2	
Somerville Lake	101	147,104	60,597	41	-5,545	-4	-76,584	-52	
Canyon Lake	102	378,781	312,368	82	-9,348	-2	-66,413	-18	
Medina Lake	103	254,823	73,005	29	-11,509	-5	-115,345	-45	
*Coletto Creek Reservoir	104	31,040	23,092	74	-21	0	-7,948	-26	
TOTAL		1,946,807	900,415	46	-74,102	-4	-791,950	-41	
UPPER COAST									
Houston, Lake	105	128,863	87,190	68	2,180	2	-41,673	-32	
Texana, Lake	106	153,246	69,746	46	-7,228	-5	-81,758	-53	
TOTAL		282,109	156,936	56	-5,048	-2	-123,431	-44	
SOUTHERN									
Choke Canyon Reservoir	107	695,262	446,015	64	-17,201	-2	-150,286	-22	
Corpus Christi, Lake	108	256,961	109,534	43	-16,250	-6	-142,368	-55	
*Falcon Reservoir (Texas)	109	1,551,034	790,000	51	-107,000	-7	-761,000	-49	
*Falcon Reservoir (TX & Mexico)	(109)	2,646,817	1,226,000	46	-127,000	-5	-1,420,817	-54	
TOTAL		2,503,257	1,345,549	54	-140,451	-6	-1,053,654	-42	
STATE TOTAL		31,257,683	18,805,629	60	-1,156,366	-4	-7,184,613	-23	

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

SEPTEMBER 2011 GROUNDWATER LEVELS IN OBSERVATION WELLS



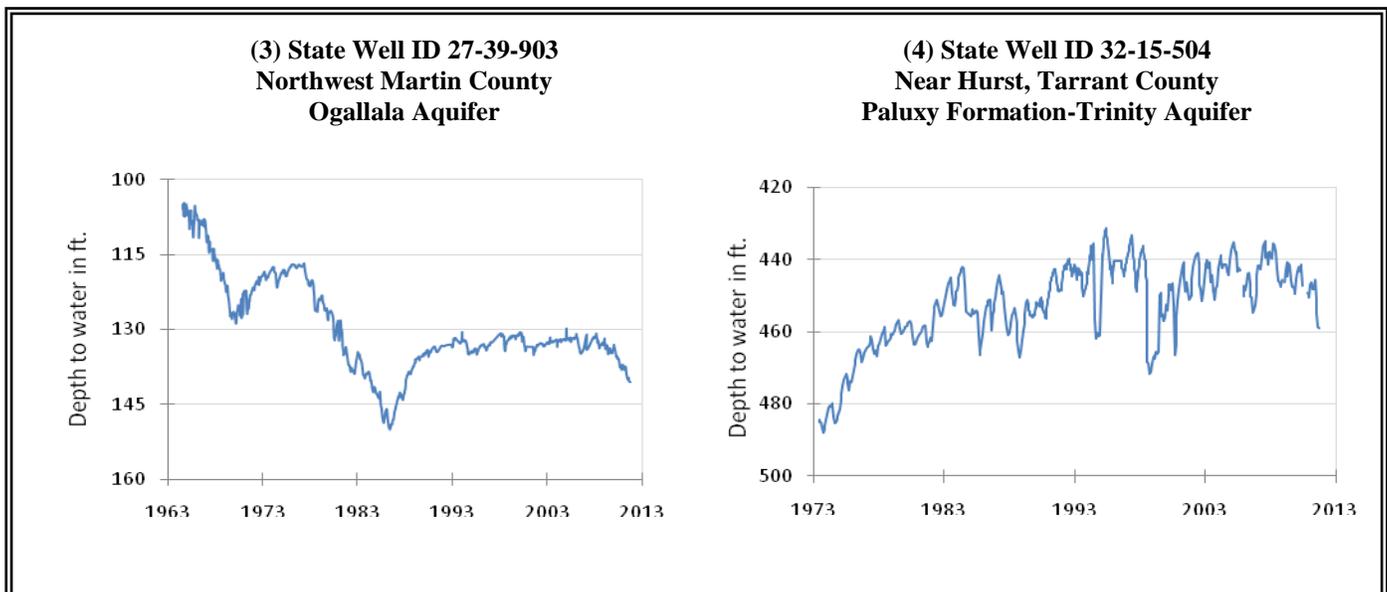
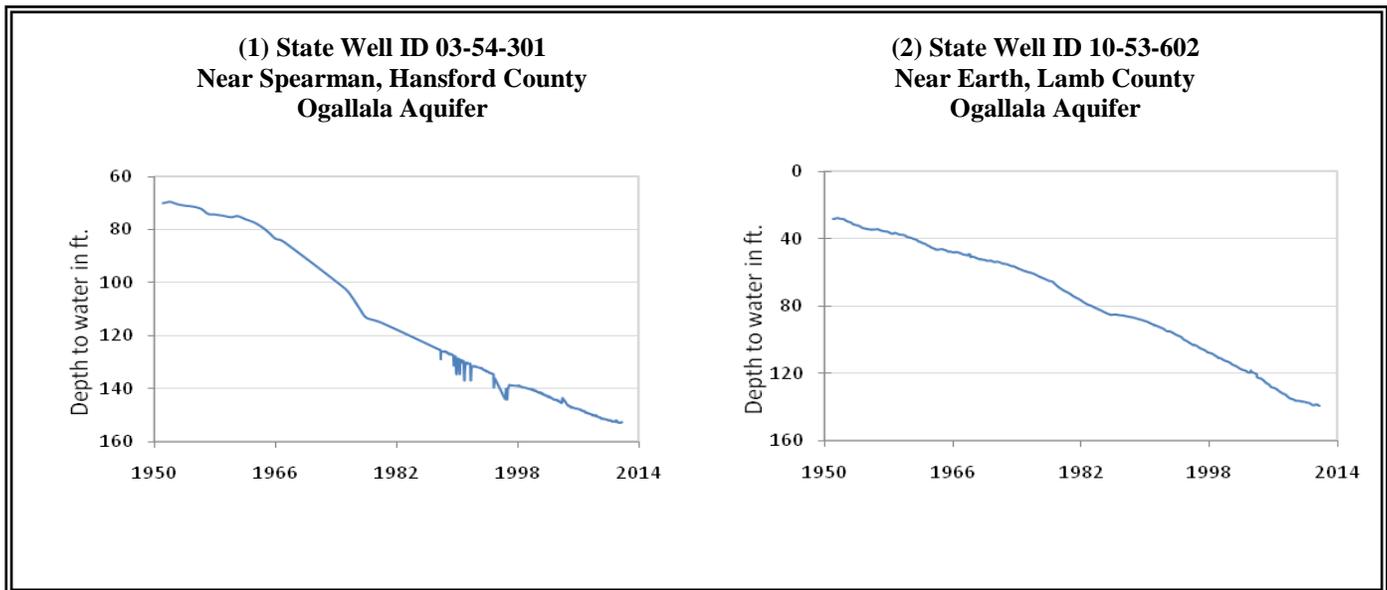
September, 2011

Water level measurements were available for all seventeen key monitoring wells in the state. Water levels rose in ten of the monitoring wells since the beginning of September, ranging from 0.24 feet in the Hansford County Ogallala Aquifer well to 12.83 feet in the Zavala County Carrizo-Wilcox Aquifer well. Water levels declined in the remaining seven monitoring wells, ranging from 0.13 feet in the Martin County Ogallala Aquifer and the Tarrant County Trinity Aquifer wells, to 4.76 feet in the Harris County Gulf Coast Aquifer well. The J-17 well in San Antonio recorded a water level of 88.4 feet below land surface. This water level is 7.4 feet below the Stage II critical management level in that segment of the Edwards Aquifer, and 2.6 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 650 foot elevation or 81 feet below land surface.

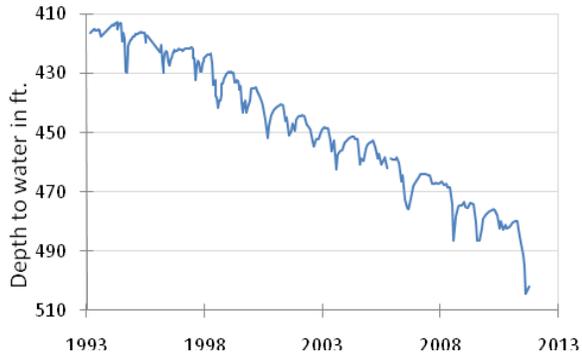
* ID is used in this publication to differentiate between the monitoring well number (1 - 17) as displayed on the aquifer map and TWDB's six- or seven-digit state well "identification" number.

Monitoring Well	Sep 2011	Aug 2011	Month Change	Year Change	Historical Change
(1) Hansford 0354301	152.43	152.67	0.24	-0.2	-82.31
(2) Lamb 1053602	139.56	139.26	-0.3	-0.97	-111.41
(3) Martin 2739903	140.53	140.40	-0.13	-3.42	-35.64
(4) Tarrant 3215504	458.85	458.72	-0.13	N/A	-80.85
(5) Coryell 4035404	501.79	504.44	2.65	-20.85	-209.79
(6) Kendall 6802609	158.64	160.00	1.36	-39.14	-98.64
(7) Bell 5804816	126.4	126.65	0.25	-5.29	-3.27
(8) Bexar 6837203	88.4	90.81	2.41	-37.64	-41.76
(9) Smith 3430907	438.84	437.22	-1.62	-3.63	-72.84
(10) Zavala 7702509	364.7	377.53	12.83	5.18	-0.43
(11) Harris 6514409	207.93	203.17	-4.76	-8.79	-72.43
(12) Victoria 8017502	39.31	37.45	-1.86	-6.29	-5.31
(13) El Paso 4913301	290.62	290.14	-0.48	-0.27	-58.72
(14) Reeves 4644501	155.03	155.71	0.60	-7.44	-62.94
(15) Pecos 5216802	239.54	241.33	1.79	-31.41	7.34
(16) Haskell 2135748	46.87	47.47	0.6	-1.89	-5.54
(17) Hudspeth 4807516	150.1	151.61	1.51	-4.42	-46.18

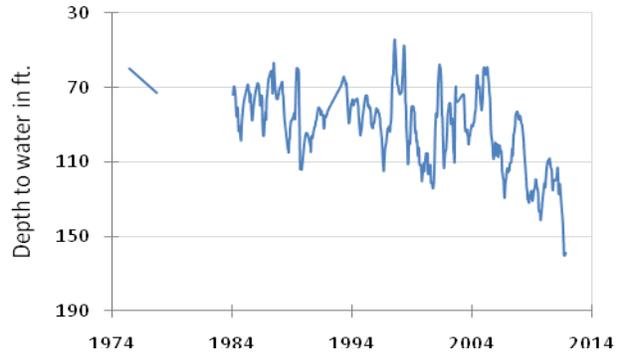
SEPTEMBER GROUNDWATER LEVELS IN OBSERVATION WELLS



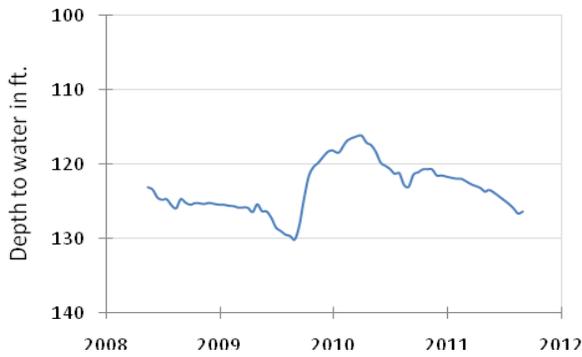
**(5) State Well ID 40-35-404
Gatesville, Coryell County
Hosston Formation-Trinity Aquifer**



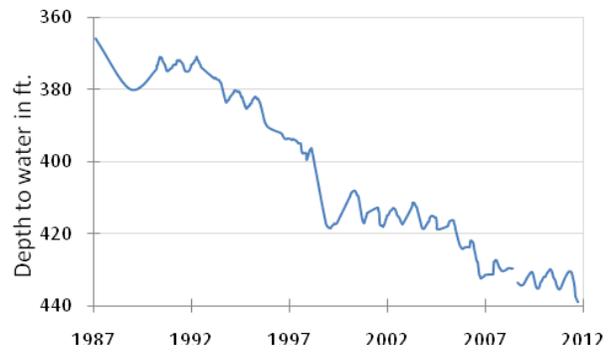
**(6) State Well ID 68-02-609
Waring, Kendall County
Cow Creek Formation-Trinity Aquifer**



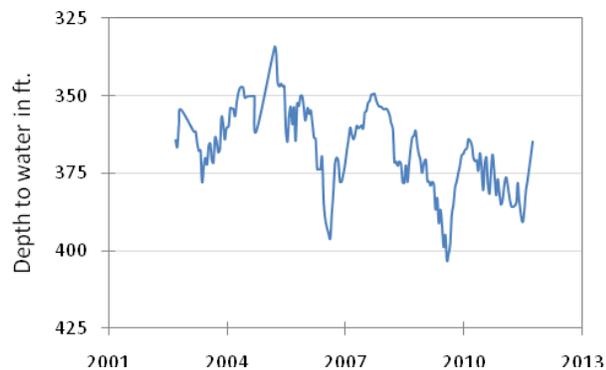
**(7) State Well ID 58-04-816
Near Salado, Bell County
Edwards (BFZ) Aquifer**



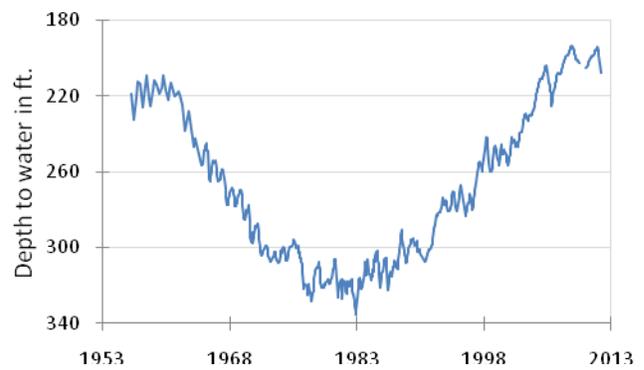
**(9) State Well ID 34-30-907
Red Springs, Smith County
Carrizo-Wilcox Aquifer**



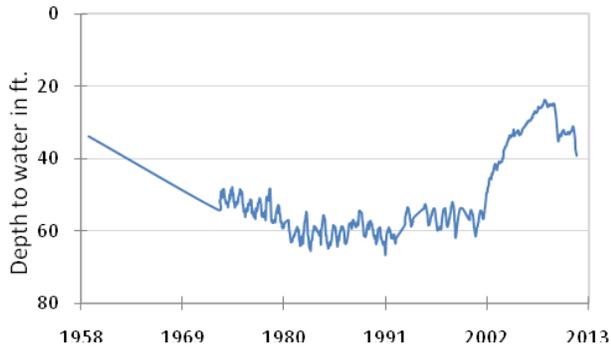
**(10) State Well ID 77-02-509
La Pryor, Zavala County
Carrizo-Wilcox Aquifer**



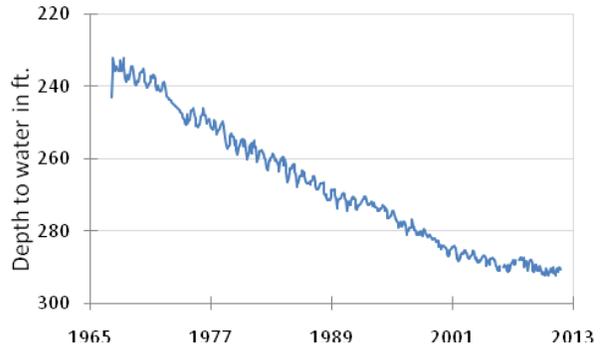
**(11) State Well ID 65-14-409
Alief, Harris County
Evangeline Formation-Gulf Coast Aquifer**



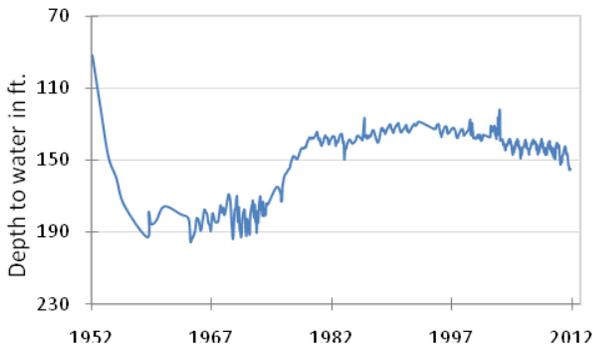
(12) State Well ID 80-17-502
Near Bloomington, Victoria County
Lissie Formation-Gulf Coast Aquifer



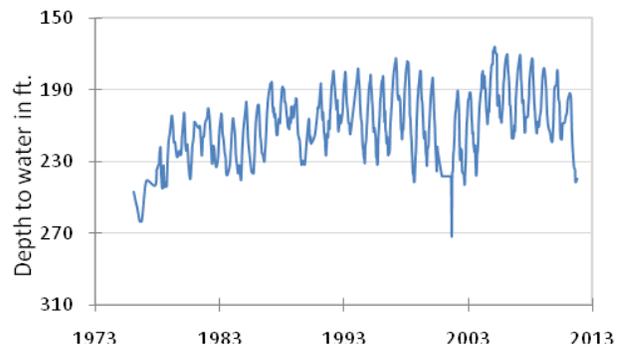
(13) State Well ID 49-13-301
El Paso, El Paso County
Hueco-Mesilla Bolson Aquifer



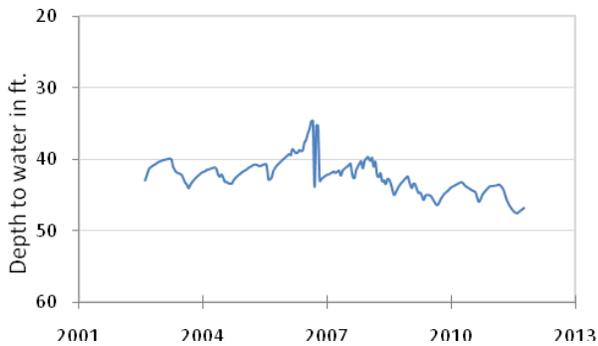
(14) State Well ID 46-44-501
Near Pecos, Reeves County
Pecos Valley Aquifer



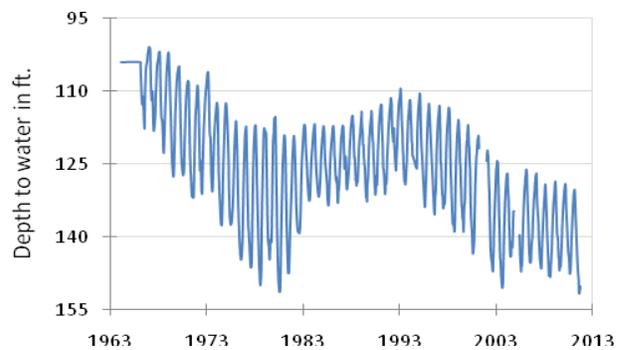
(15) State Well ID 52-16-802
Fort Stockton, Pecos County
Edwards-Trinity (Plateau) Aquifer



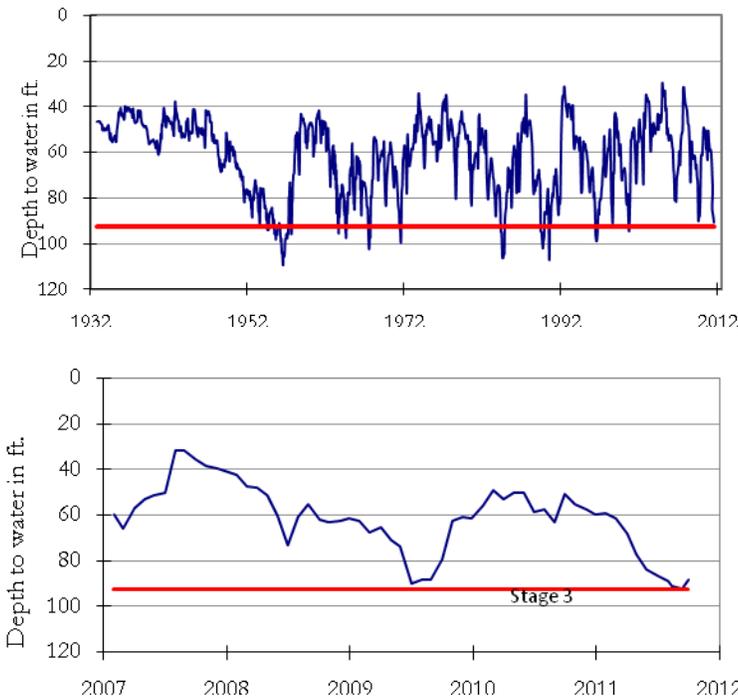
(16) State Well ID 21-35-748
Near O'Brien, Haskell County
Seymour Aquifer



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



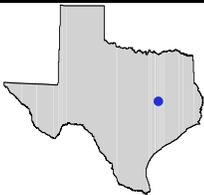
**(8) State Well ID 68-37-203 (J-17)
In San Antonio, Bexar County
Edwards (BFZ) Aquifer**



The late August water level measurement in this Edwards (BFZ) Aquifer well, elevation 731 feet above sea level, was 88.4 feet below land surface. This was 2.41 feet above last month's measurement, 37.64 feet below last year's measurement, and 41.76 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

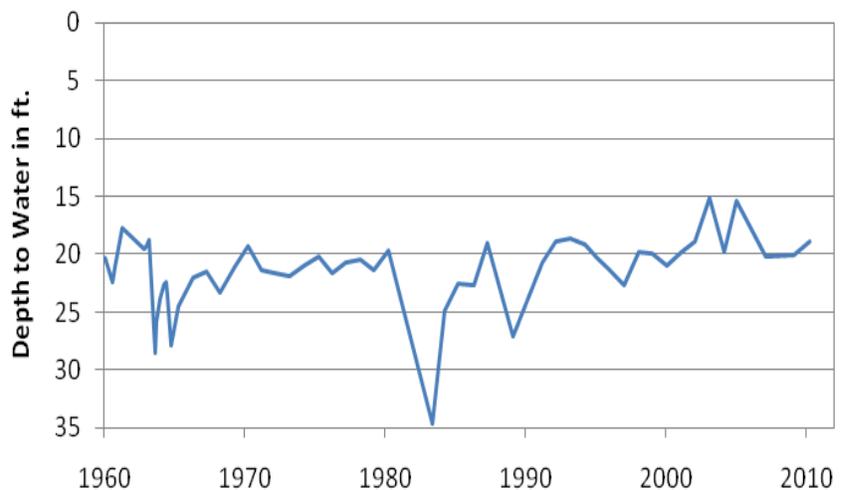


Each month this space features a new hydrograph (marked with the • symbol on the map) depicting different aquifers and different conditions in Texas.

Brazos River Alluvium 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 discharge to the Brazos River, withdrawals from wells, and some evapotranspiration. 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 Co.**



*TEXAS WATER DEVELOPMENT BOARD
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