

Texas Water Development Board



W **A** **T** **E** **R**
Conditions

RESERVOIR STORAGE

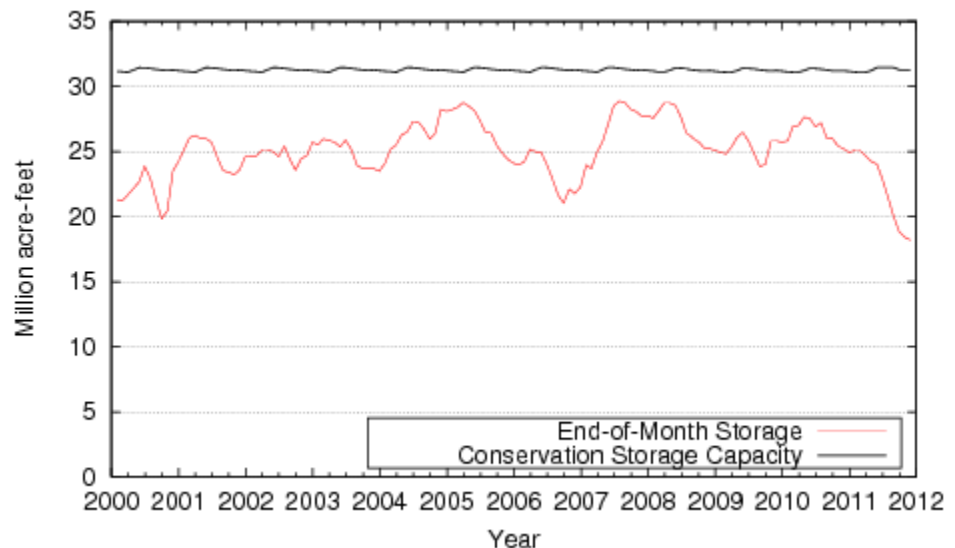
November 2011

At the end of November, total storage in 109 of the state's major reservoirs was at 18.2 million acre-feet*, or 58% of their total conservation storage capacity. This is 0.22 million acre-feet less than a month ago, 7.0 million acre-feet less than a year ago, the second greatest decline in storage for a 12-month period, and is the lowest total storage found in records that extend back to 1978.

Only Lake Houston held 100% of conservation storage capacity. Ten reservoirs were at or below 10% full: E.V. Spence, O. C. Fisher, Twin Buttes, Hords Creek Lake, and Meredith were effectively empty, Electra and J. B. Thomas were at 1% full, Red Bluff was 4%, Palo Duro was 6%, and Mackenzie was 9% full.

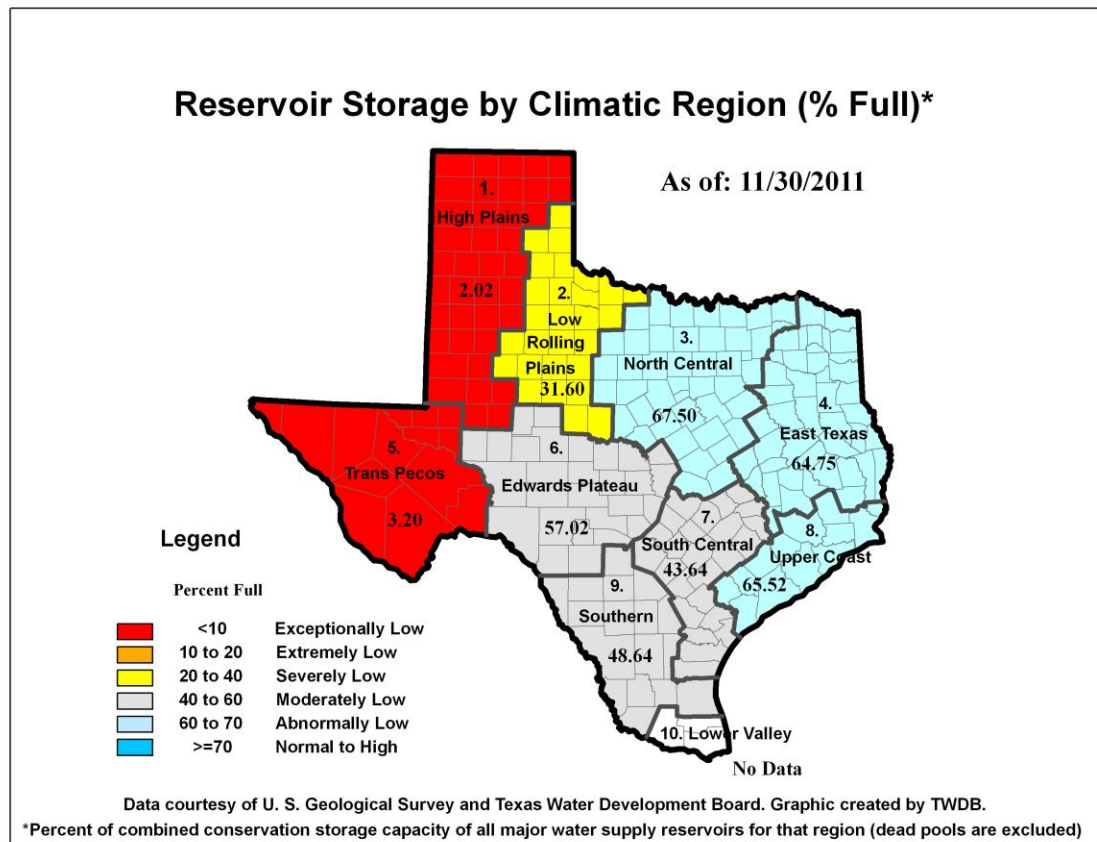
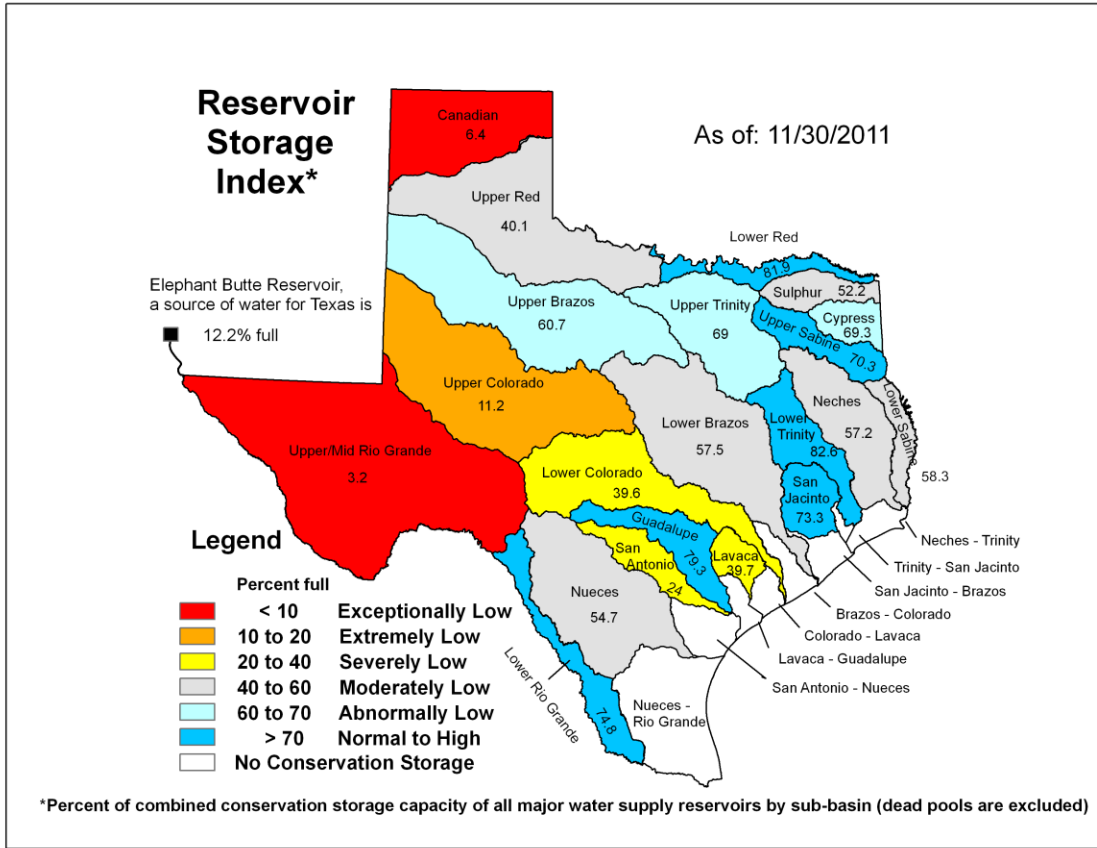
The climatic regions with the highest percent storage were the North Central and Upper Coast, both holding 67% of capacity. The regions with the lowest percentage storage were the High Plains (2%) and Trans-Pecos regions (4%). Storage declined in all regions except the Upper Coast and Trans-Pecos over the last month, and in all regions over the last year.

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.

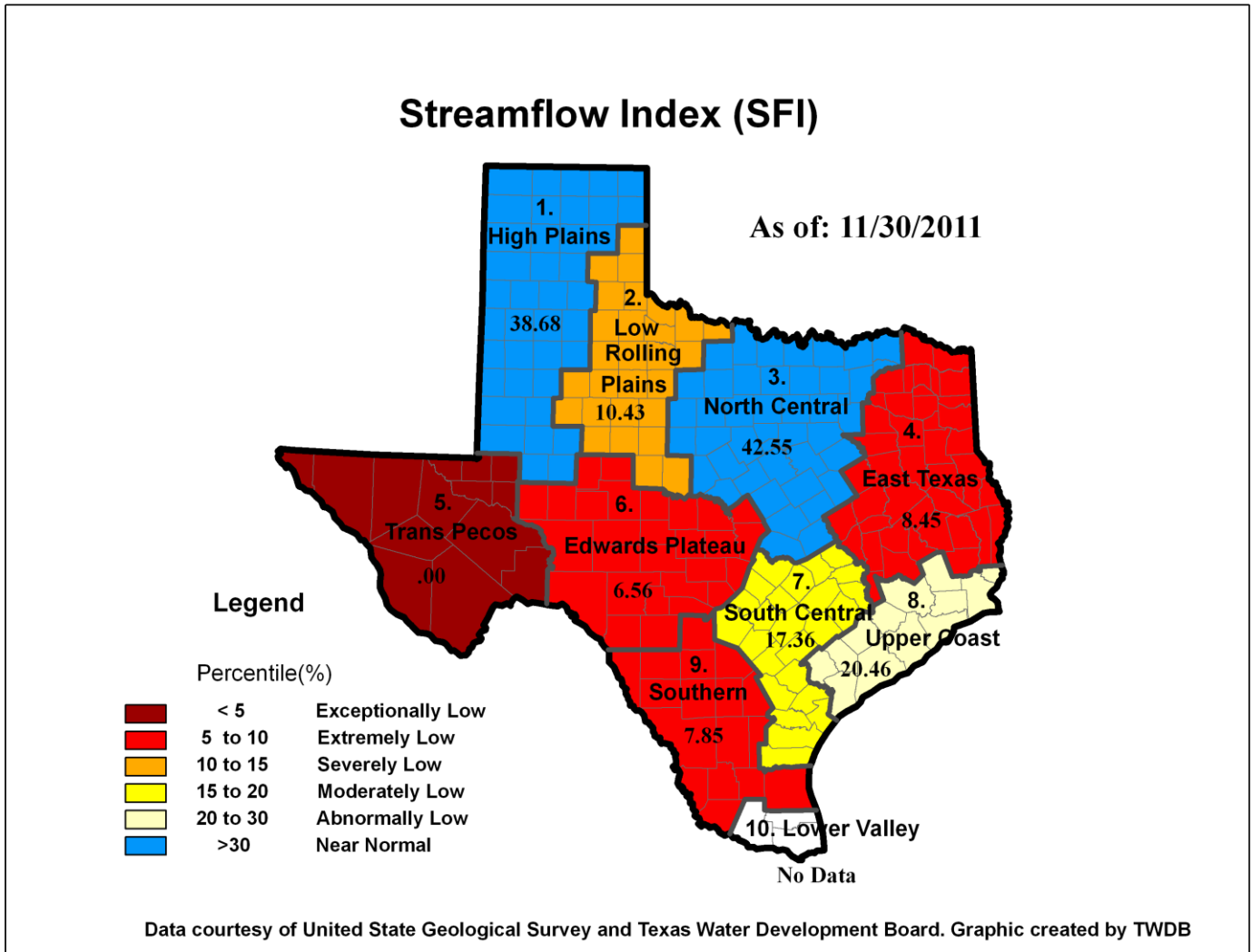
NOVEMBER RESERVOIR CONDITIONS



NOVEMBER STREAMFLOW CONDITIONS

Of 29 reporting index stations in November, computed 30-day mean flows were exceptionally low (<5%) at 7 stations, extremely low (5%-10%) at 4 stations, severely low (10-15%) at 7 stations, moderately low (15%-20%) at 2 stations, abnormally low at 2 stations (20% - 30%), and near normal (30% - 70%) at remaining 7 stations. Compared to October, flows have increased at 14 index stations and decreased at 11 stations.

On a regional basis, flows in November were exceptionally low in the Trans-Pecos region, extremely low in East Texas, severely low in the Low Rolling, Edwards Plateau, and Southern regions, moderately low in South Central Texas; abnormally low in Upper Coast region, and near normal in the North Central and High Plains regions. 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		Change since Late Oct.		Change since Late Nov.		
		Capacity (acre-feet)	Late Nov. 2011 (acre-feet) (%)	2011 (acre-feet) (%)	2011 (acre-feet) (%)	2010 (acre-feet) (%)	2010 (acre-feet) (%)	
HIGH PLAINS								
Palo Duro Reservoir	1	60,897	3,890	6	-316	-1	-11,020	-18
Meredith, Lake (Texas)	2	500,000	0	0	0	0	-4,485	-1
Meredith, Lake (Texas & Oklahoma)	(2)	779,556	0	0	0	0	-4,485	-1
MacKenzie Reservoir	3	46,429	4,315	9	-80	0	-1,853	-4
White River Lake	4	29,880	4,623	15	-245	-1	-5,867	-20
TOTAL		637,206	12,828	2	-641	0	-23,225	-4
LOW ROLLING PLAINS								
Greenbelt Lake	5	59,500	10,559	18	-345	-1	-5,695	-10
*Electra, Lake	6	5,626	53	1	22	0	-366	-7
N. Fork Buffalo Crk Reservoir	7	15,400	2,423	16	-131	-1	-3,827	-25
Kemp, Lake	8	245,308	85,163	35	-575	0	-160,145	-65
Millers Creek Reservoir	9	27,888	10,384	37	-335	-1	-9,184	-33
Alan Henry Reservoir	10	94,808	74,990	79	-860	-1	-15,635	-16
Stamford, Lake	11	51,570	26,868	52	-866	-2	-24,702	-48
J B Thomas, Lake	12	199,931	2,333	1	-291	0	-9,475	-5
Fort Phantom Hill, Lake	13	70,030	37,517	54	-996	-1	-22,855	-33
Sweetwater, Lake	14	10,006	3,036	30	-165	-2	-2,760	-28
Colorado City, Lake	15	31,793	9,955	31	-254	-1	-5,048	-16
Champion Creek Reservoir	16	41,618	4,900	12	-132	0	-2,042	-5
Abilene, Lake	17	6,099	1,684	28	-183	-3	-3,302	-54
Coleman, Lake	18	38,076	15,158	40	-512	-1	-6,468	-17
Hords Creek Lake	19	5,684	0	0	0	0	-452	-8
TOTAL		903,337	285,023	32	-5,623	-1	-271,956	-30
NORTH CENTRAL								
Nocona, Lake (Farmers Crk)	20	21,445	13,055	61	-146	-1	-5,695	-27
Hubert H Moss Lake	21	24,058	20,651	86	267	1	-2,680	-11
Texoma, Lake (Texas)	22	1,334,295	1,091,938	82	70,001	5	-170,702	-13
Texoma, Lake (Texas & Oklahoma)	(22)	2,668,590	2,183,876	82	140,002	5	-341,405	-13
*Pat Mayse Lake	23	117,844	97,431	83	463	0	-7,645	-6
Kickapoo, Lake	24	85,825	45,131	53	-434	-1	-27,071	-32
Arrowhead, Lake	25	235,997	130,465	55	416	0	-66,607	-28
Bonham, Lake	26	11,026	7,006	64	-43	0	-3,249	-29
Crook, Lake	27	9,195	6,172	67	43	0	-1,679	-18
Amon G Carter, Lake	28	19,903	12,476	63	-213	-1	-5,352	-27
Ray Roberts, Lake	29	798,758	667,705	84	-1,019	0	-102,240	-13
Jim Chapman Lake (Cooper)	30	260,332	78,337	30	-6,922	-3	-82,960	-32
Graham, Lake	31	45,260	36,513	81	753	2	-6,188	-14
*Lost Creek Reservoir	32	11,950	9,273	78	-11	0	-1,890	-16
Bridgeport, Lake	33	366,236	235,054	64	-2,050	-1	-104,650	-29
Lewisville Lake	34	563,228	389,299	69	-9,268	-2	-153,929	-27
Lavon Lake	35	443,844	211,641	48	-4,800	-1	-121,472	-27
Hubbard Creek Reservoir	36	318,067	139,940	44	-4,227	-1	-56,657	-18
Possum Kingdom Lake	37	540,340	379,080	70	-6,737	-1	-136,689	-25
*Mineral Wells, Lake	38	7,065	5,069	72	-79	-1	-1,431	-20
Weatherford, Lake	39	17,789	10,275	58	-560	-3	-4,779	-27
Eagle Mountain Lake	40	179,880	125,577	70	-5,676	-3	-38,159	-21
Worth, Lake	41	24,500	16,426	67	1,843	8	-1,912	-8
Grapevine Lake	42	164,702	130,204	79	-3,569	-2	-26,108	-16
Ray Hubbard, Lake	43	452,040	325,776	72	-9,201	-2	-71,444	-16
New Terrell City Lake	44	8,583	5,349	62	-80	-1	-1,734	-20
Daniel, Lake	45	9,435	3,278	35	-156	-2	-1,465	-16
Palo Pinto, Lake	46	26,827	18,746	70	-1,066	-4	-4,888	-18
Benbrook Lake	47	85,648	45,200	53	5,601	7	-32,949	-38
Arlington, Lake	48	40,156	25,409	63	-573	-1	-9,999	-25

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 Oct. 2011		Change since Late Nov. 2010		
			Late Nov. (acre-feet)	2011 (%)	(acre-feet)	(%)	(acre-feet)	(%)	
NORTH CENTRAL (Continue)									
Joe Pool Lake	49	142,861	118,192	83	-1,229	-1	-23,562	-16	
*Cisco, Lake	50	26,000	10,980	42	-257	-1	-3,571	-14	
Leon, Lake	51	26,421	11,460	43	-408	-2	-5,228	-20	
Granbury, Lake	52	128,046	89,116	70	-10,451	-8	-33,946	-27	
Pat Cleburne, Lake	53	26,008	17,193	66	-339	-1	-5,446	-21	
Waxahachie, Lake	54	10,779	7,157	66	31	0	-1,662	-15	
Bardwell Lake	55	46,122	30,850	67	-712	-2	-15,024	-33	
Proctor Lake	56	55,457	26,911	49	-596	-1	-6,494	-12	
Whitney, Lake	57	553,349	275,279	50	-4,868	-1	-105,360	-19	
Aquilla Lake	58	44,460	29,208	66	-1,028	-2	-13,464	-30	
Navarro Mills Lake	59	49,826	31,099	62	-312	-1	-15,633	-31	
*Halbert, Lake	60	6,033	3,465	57	798	13	-150	-2	
Richland-Chambers Reservoir	61	1,087,839	748,508	69	-22,258	-2	-252,021	-23	
*Brownwood, Lake	62	131,429	51,752	39	-1,672	-1	-29,479	-22	
Waco, Lake	62	198,943	146,665	74	-3,139	-2	-46,526	-23	
Limestone, Lake	64	208,015	103,189	50	-4,663	-2	-66,913	-32	
Belton Lake	65	435,225	302,017	69	-7,003	-2	-96,507	-22	
Stillhouse Hollow Lake	66	227,771	141,142	62	-4,859	-2	-85,224	-37	
Georgetown, Lake	67	36,823	14,312	39	1,571	4	-22,511	-61	
Granger Lake	68	50,779	31,867	63	-353	-1	-11,128	-22	
Tawakoni, Lake	69	888,126	632,763	71	-13,541	-2	-159,719	-18	
TOTAL		10,604,540	7,105,601	67	-52,731	0	-2,251,791	-21	
EAST									
Wright Patman Lake	70	307,973	174,993	57	-10,769	-3	52,400	17	
*Sulphur Springs, Lake	71	17,838	8,513	48	-89	0	-1,463	-8	
Cypress Springs, Lake	72	66,756	53,632	80	-257	0	-9,427	-14	
Bob Sandlin, Lake	73	200,579	126,161	63	-3,221	-2	-46,368	-23	
Fork Reservoir, Lake	74	604,927	419,745	69	-5,379	-1	-108,937	-18	
O the Pines, Lake	75	267,672	172,163	64	-438	0	-63,330	-24	
Cedar Creek Reservoir in Trinity	76	644,686	420,353	65	-6,890	-1	-141,061	-22	
Athens, Lake	77	29,435	20,882	71	-113	0	-5,546	-19	
Palestine, Lake	78	370,907	242,968	66	-2,497	-1	-80,017	-22	
Tyler, Lake	79	73,256	42,024	57	0	0	-21,207	-29	
Murvaul, Lake	80	38,284	24,075	63	766	2	-7,560	-20	
Jacksonville, Lake	81	25,670	19,770	77	-170	-1	-3,160	-12	
Nacogdoches, Lake	82	39,521	18,308	46	-246	-1	-11,315	-29	
Houston County Lake	83	17,113	12,230	71	-43	0	-3,122	-18	
Sam Rayburn Reservoir	84	2,857,077	1,586,219	56	3,022	0	-412,904	-14	
Toledo Bend Reservoir (Texas)	85	2,236,450	1,305,938	58	-4,380	0	-285,503	-13	
Toledo Bend Reservoir (TX & LA)	(85)	4,472,900	2,611,876	58	-8,761	0	-571,007	-13	
*Livingston, Lake	86	1,741,867	1,442,000	83	4,000	0	-299,867	-17	
B A Steinhagen Lake	87	66,966	51,468	77	-3,320	-5	-1,922	-3	
Conroe, Lake	88	416,188	275,721	66	-13,163	-3	-112,232	-27	
TOTAL		10,023,165	6,417,163	64	-43,187	0	-1,562,541	-16	
TRANS-PECOS									
Red Bluff Reservoir	89	130,170	4,806	4	1,239	1	-39,376	-30	
TOTAL		130,170	4,806	4	1,239	1	-39,376	-30	

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

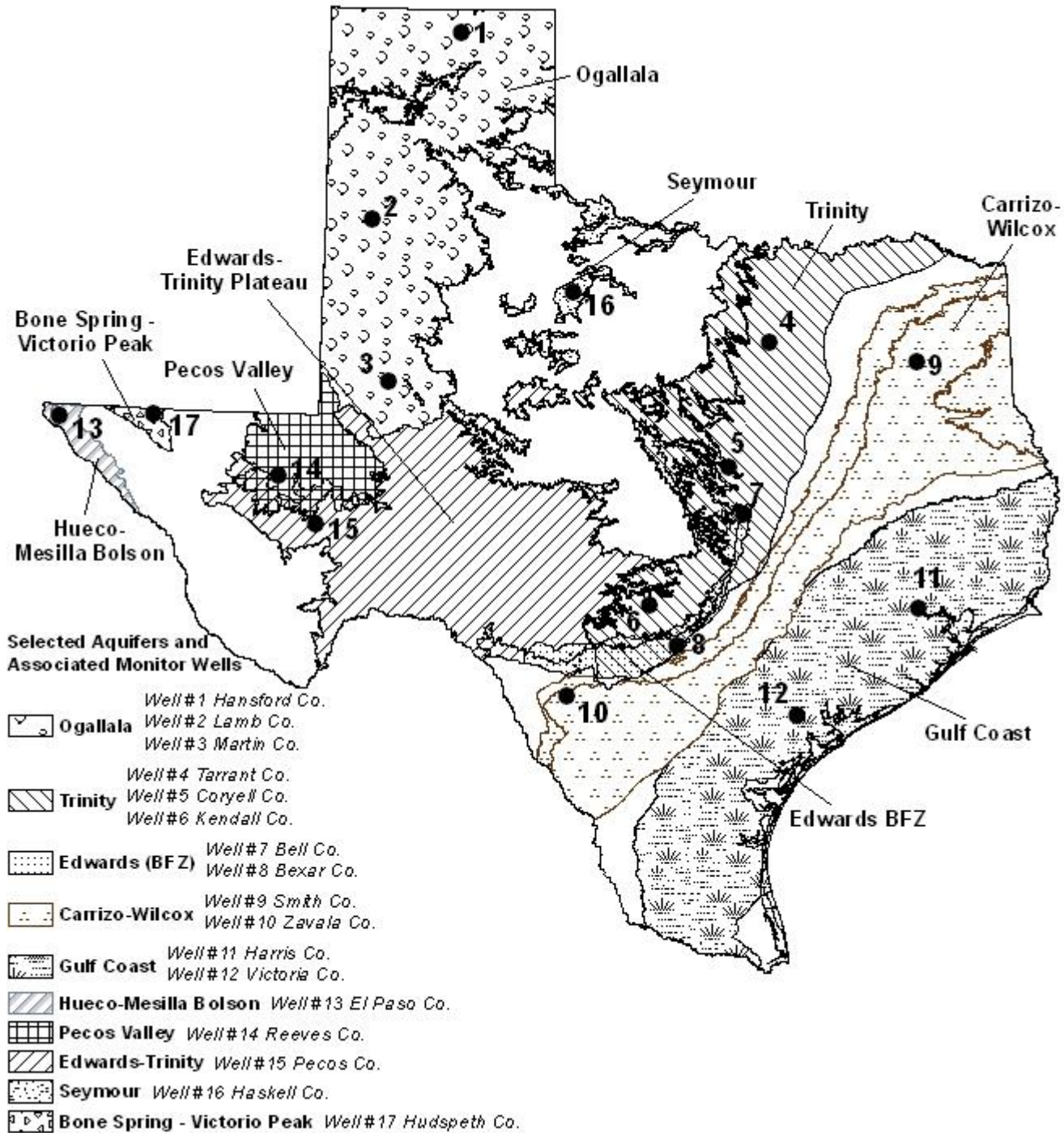
Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage		Change since Late Oct. 2011		Change since Late Nov. 2010		
			Late Nov. (acre-feet)	2011 (%)	(acre-feet)	(%)	(acre-feet)	(%)	
EDWARDS PLATEAU									
Oak Creek Reservoir	90	39,260	14,846	38	-389	-1	-8,480	-22	
E V Spence Reservoir	91	517,272	2,179	0	-144	0	-15,274	-3	
O C Fisher Lake	92	79,483	0	0	0	0	0	0	
*O H Ivie Reservoir	93	554,335	102,512	18	-6,349	-1	-82,561	-15	
Twin Buttes Reservoir	94	177,850	0	0	0	0	-20,156	-11	
Brady Creek Reservoir	95	29,110	7,118	24	-196	-1	-6,207	-21	
Buchanan, Lake	96	875,610	329,885	38	-11,445	-1	-338,023	-39	
Lyndon B Johnson, Lake	97	113,323	111,500	98	-608	-1	-608	-1	
*Amistad Reservoir (Texas)	98	1,840,849	1,530,000	83	-39,000	-2	-311,000	-17	
*Amistad Reservoir (TX & Mexico)	(98)	3,275,532	2,780,000	85	-48,000	-1	-495,532	-15	
TOTAL		4,227,092	2,098,040	50	-58,131	-1	-782,309	-19	
SOUTH CENTRAL									
Travis, Lake	99	1,113,255	385,225	35	-7,731	-1	-499,130	-45	
*Austin, Lake	100	21,804	20,579	94	-226	-1	-725	-3	
Somerville Lake	101	147,104	56,476	38	-800	-1	-71,788	-49	
Canyon Lake	102	378,781	300,301	79	-4,819	-1	-72,509	-19	
Medina Lake	103	254,823	61,116	24	-5,431	-2	-115,743	-45	
*Coletto Creek Reservoir	104	31,040	24,851	80	368	1	-4,852	-16	
TOTAL		1,946,807	848,548	44	-18,639	-1	-764,747	-39	
UPPER COAST									
Houston, Lake	105	128,863	128,500	100	23,800	18	-363	0	
Texana, Lake	106	153,246	61,638	40	-5,154	-3	-72,268	-47	
TOTAL		282,109	190,138	67	18,646	7	-72,631	-26	
SOUTHERN									
Choke Canyon Reservoir	107	695,262	431,088	62	-10,133	-1	-134,635	-19	
Corpus Christi, Lake	108	256,961	90,854	35	-11,397	-4	-142,556	-55	
*Falcon Reservoir (Texas)	109	1,551,034	696,000	45	-44,000	-3	-943,000	-61	
*Falcon Reservoir (TX & Mexico)	(109)	2,646,817	1,116,000	42	-57,000	-2	-1,530,817	-58	
TOTAL		2,503,257	1,217,942	49	-65,530	-3	-1,220,191	-49	
STATE TOTAL		31,257,683	18,180,089	58	-224,597	-1	-6,988,767	-22	

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

In Addition

Elephant Butte Reservoir	1,975,000	239,159	12	31,618	2	-153,780	-8
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NOVEBER 2011 GROUNDWATER LEVELS IN OBSERVATION WELLS



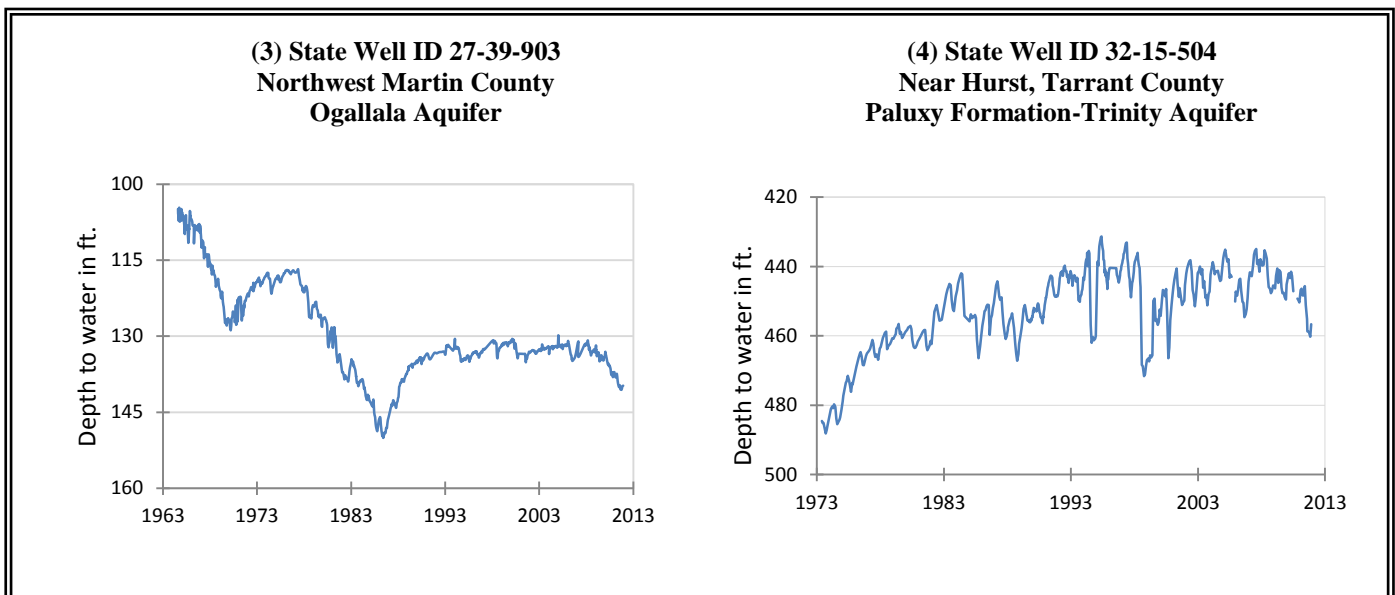
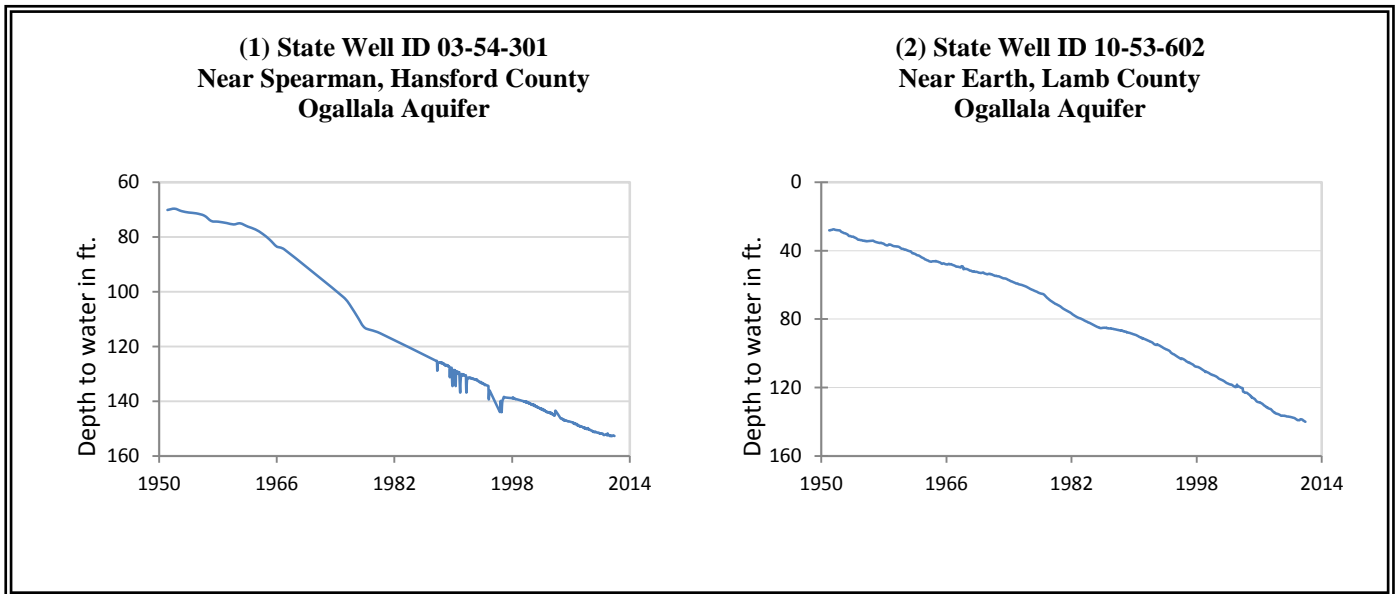
November, 2011

Water level measurements were available for all seventeen key monitoring wells in the state. Water levels rose in fourteen of the monitoring wells since the beginning of November, ranging from 0.15 feet in the Martin County Ogallala Aquifer well to 15.26 feet in the Pecos County Edwards-Trinity Plateau Aquifer well. Water levels declined in the remaining three monitoring wells, ranging from 0.13 feet in the Hansford County Ogallala Aquifer well to 3.33 feet in the La Salle County Carrizo-Wilcox Aquifer well. The J-17 well in San Antonio recorded a water level of 81.10 feet below land surface. This water level is 0.10 feet below the Stage II critical management level in that segment of the Edwards Aquifer. Stage II restrictions were triggered on June 1, 2011 by the E.A.A. after the 10 day average of water levels fell below 650 foot elevation or 81 feet below land surface.

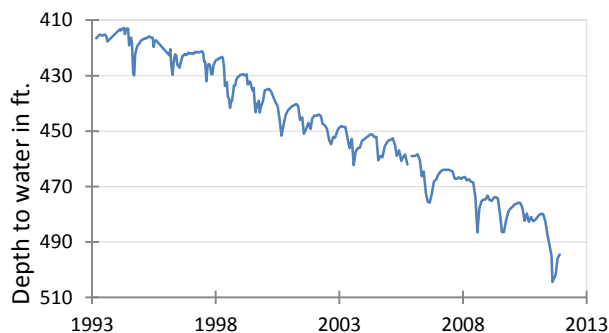
* ID is used in this publication to differentiate between the monitoring well number (1 - 17) as displayed on the aquifer map and the TWDB's six- or seven-digit state well "identification" number.

Monitoring Well	Nov 2011	Oct 2011	Month Change	Year Change	Historical Change
(1) Hansford 0354301	152.68	152.55	-0.13	-0.22	-82.56
(2) Lamb 1053602	140.07	139.85	-0.22	-0.97	-111.92
(3) Martin 2739903	139.75	139.9	0.15	-2.65	-34.86
(4) Tarrant 3215504	456.65	460.26	3.61	-6.89	-78.65
(5) Coryell 4035404	494.54	495.91	1.37	-12.47	-202.54
(6) Kendall 6802609	146.10	151.02	4.92	-26.46	-86.10
(7) Bell 5804816	125.54	126.12	0.58	-4.00	-2.41
(8) Bexar 6837203	81.10	82.71	1.61	-23.76	-34.46
(9) Smith 3430907	437.81	438.70	0.89	-3.51	-71.81
(10) La Salle 7738103	387.93	384.60	-3.33	-75.55	-134.86
(11) Harris 6514409	209.36	209.75	0.39	-11.07	-73.86
(12) Victoria 8017502	39.85	40.62	0.77	-6.47	-5.85
(13) El Paso 4913301	290.33	290.57	0.24	0.77	-58.43
(14) Reeves 4644501	148.72	153.46	4.74	-3.88	-56.63
(15) Pecos 5216802	215.30	230.56	15.26	-12.53	31.58
(16) Haskell 2135748	46.27	46.53	0.26	-2.42	-4.94
(17) Hudspeth 4807516	139.47	144.9	5.43	-2.92	-35.55

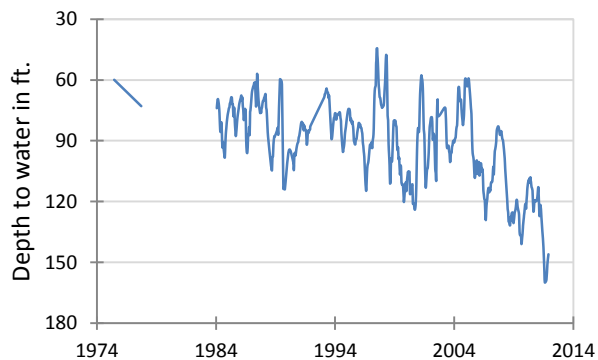
NOVEMBER GROUNDWATER LEVELS IN OBSERVATION WELLS



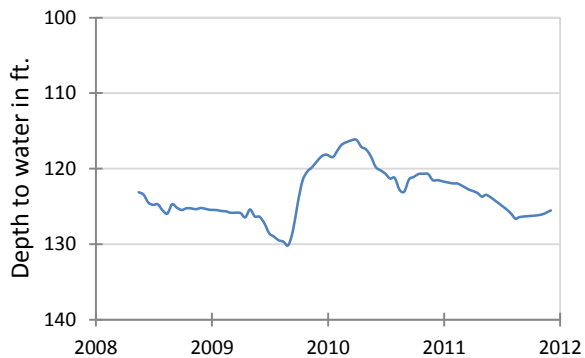
**(5) State Well ID 40-35-404
Gatesville, Coryell County
Hosston Formation-Trinity Aquifer**



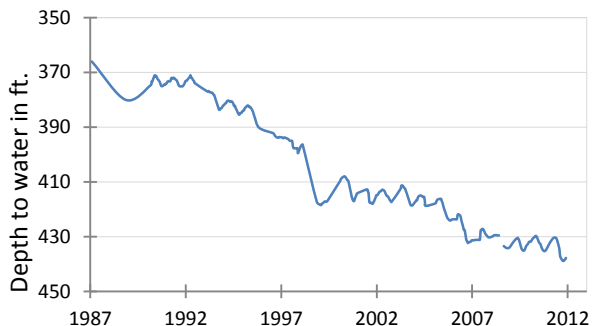
**(6) State Well ID 68-02-609
Waring, Kendall County
Cow Creek Formation-Trinity Aquifer**



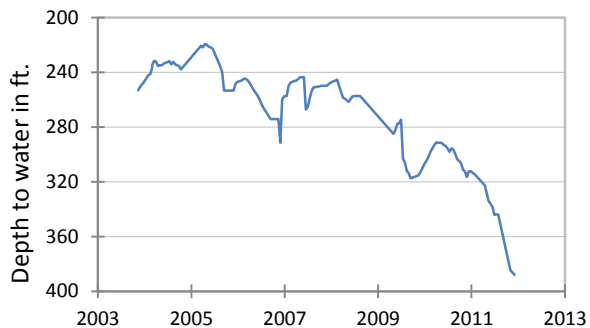
**(7) State Well ID 58-04-816
Near Salado, Bell County
Edwards (BFZ) Aquifer**



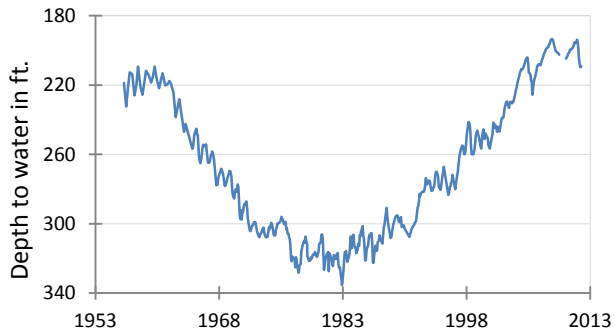
**(9) State Well ID 34-30-907
Red Springs, Smith County
Carrizo-Wilcox Aquifer**



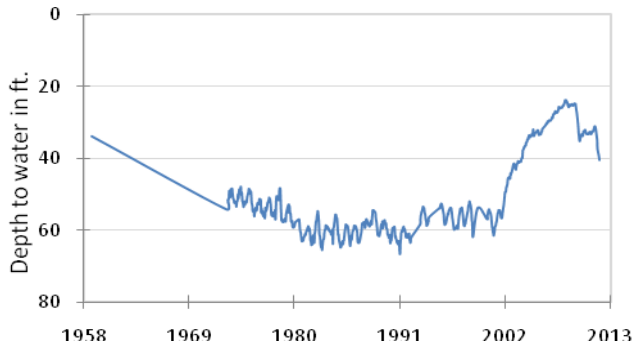
**(10) State Well ID 77-38-103
Near Cotulla, La Salle County
Carrizo-Wilcox Aquifer**



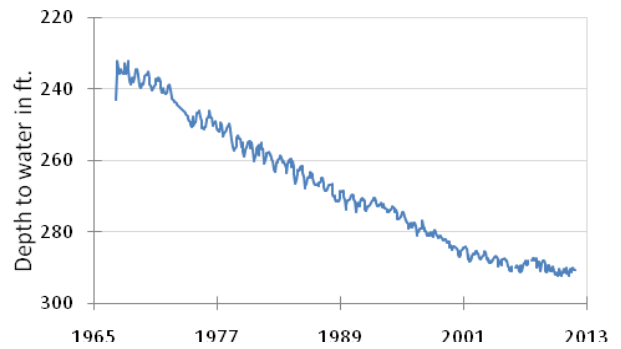
**(11) State Well ID 65-14-409
Alief, Harris County
Evangeline Formation-Gulf Coast Aquifer**



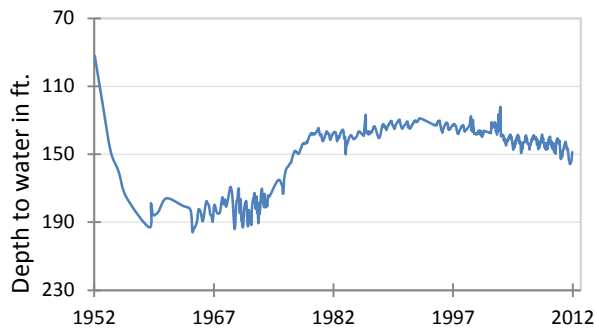
(12) State Well ID 80-17-502
Near Bloomington, Victoria County
Lissie Formation-Gulf Coast Aquifer



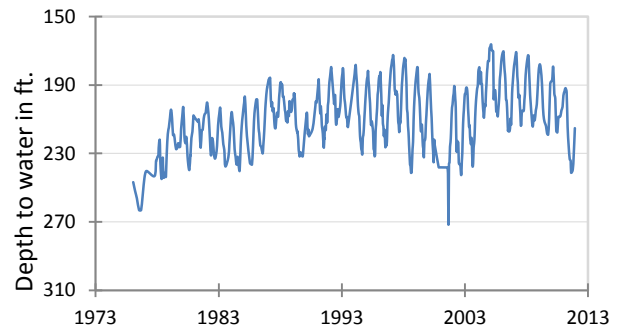
(13) State Well ID 49-13-301
El Paso, El Paso County
Hueco-Mesilla Bolson Aquifer



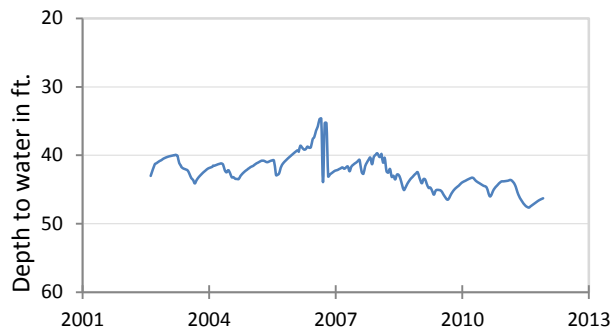
(14) State Well ID 46-44-501
Near Pecos, Reeves County
Pecos Valley Aquifer



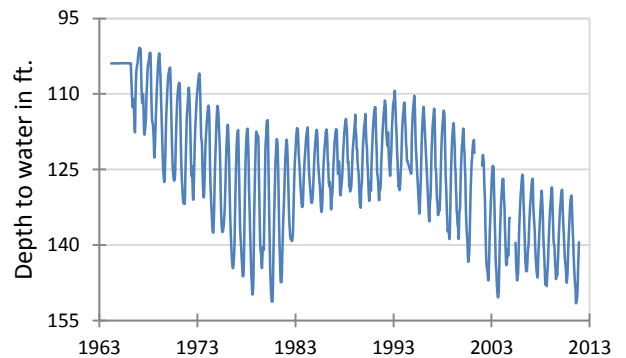
(15) State Well ID 52-16-802
Fort Stockton, Pecos County
Edwards-Trinity (Plateau) Aquifer



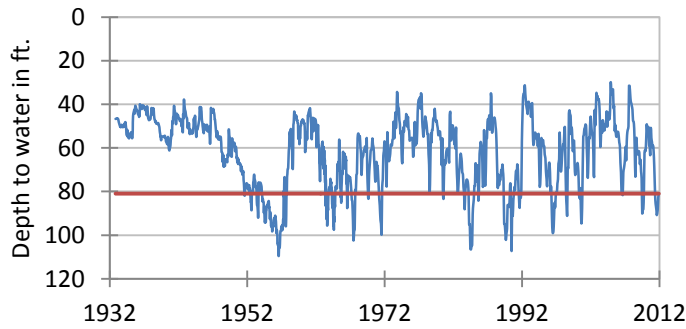
(16) State Well ID 21-35-748
Near O'Brien, Haskell County
Seymour Aquifer



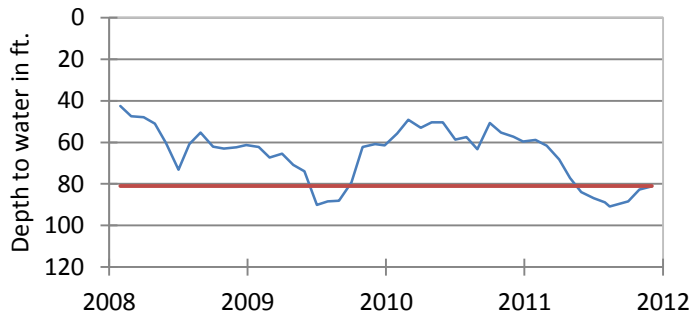
(17) State Well ID 48-07-516
Dell City, Hudspeth County
Bone Spring - Victorio Peak Aquifer



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



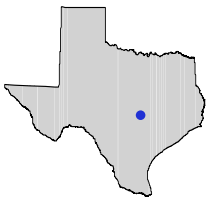
The late November water level measurement in this Edwards (BFZ) Aquifer well, elevation 731 feet above sea level, was 81.10 feet below land surface. This was 1.61 feet above last month's measurement, 23.76 feet below last year's measurement, and 34.46 feet below the initial measurement recorded in 1932.



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

HYDROGRAPH OF THE MONTH

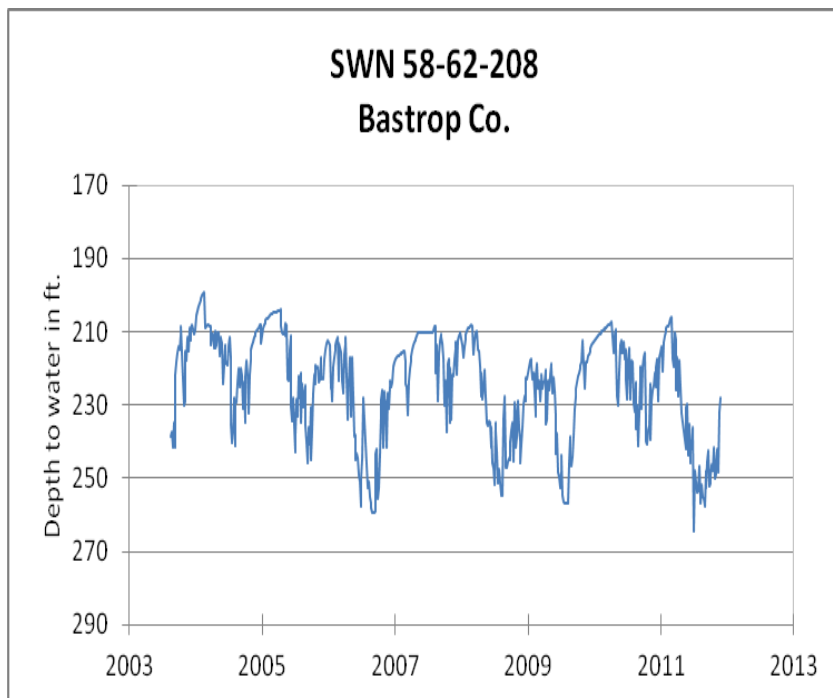
Each month this space features a new hydrograph (marked with the • symbol on the map) depicting different aquifers and different conditions in Texas.



Carrizo-Wilcox Aquifer

This Carrizo-Wilcox Aquifer water level recorder well is located within the City of Bastrop at an elevation of 528 feet above sea level. The high fluctuations seen in the hydrograph show the varying demands placed on this aquifer between the high use summer months, and the low use winter months. Groundwater from the Carrizo-Wilcox Aquifer is generally fresh and typically contains less than 500 milligrams per liter of total dissolved solids. High iron and manganese content in excess of secondary drinking water standards is characteristic in the deeper subsurface portions of the aquifer. Significant water level declines have been observed in the Winter Garden area due to irrigation pumping, and in the northeastern part of the aquifer due to municipal pumping.

**SWN 58-62-208
Bastrop Co.**



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