RESERVOIR STORAGE

August 2012

At the end of the month, total storage in 109 of the state's major water supply reservoirs was at 21.62 million acre-feet*, or 70% of their total conservation storage capacity. This is 1.1 million acre-feet (4%) less than a month ago but 1.7 million acre-feet (5%) more than storage at this time last year.

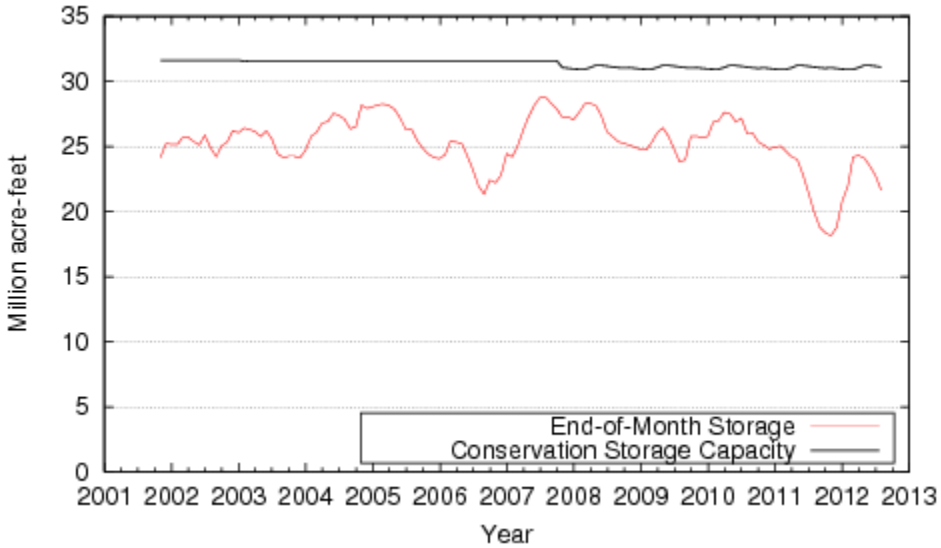
Only one reservoir, Lake Houston, held 100% of conservation storage capacity. Fourteen (14) reservoirs were at or below 10% full: E.V. Spence, O. C. Fisher, Twin Buttes, Hords Creek Lake, J. B. Thomas, Electra and Meredith were effectively empty, Palo Duro was at 3%, Mackenzie and Red Bluff were at 7% and 8% full, respectively, North Fork Buffalo Creek, Abilene, and White River were at 9% full, and Champion Creek Reservoir was at 10% full.

Total combined storage was greater than 80% in the North Central (83%), East (88%), and Upper Coast (96%) regions. The regions with the lowest percentage storage were the High Plains (1%) and Trans-Pecos regions (8%). Storage over the last month declined in all regions.

Elephant Butte reservoir held 112,700 acre-feet, or 6% of storage capacity. This is 66,500 acre-ft less than a month ago.

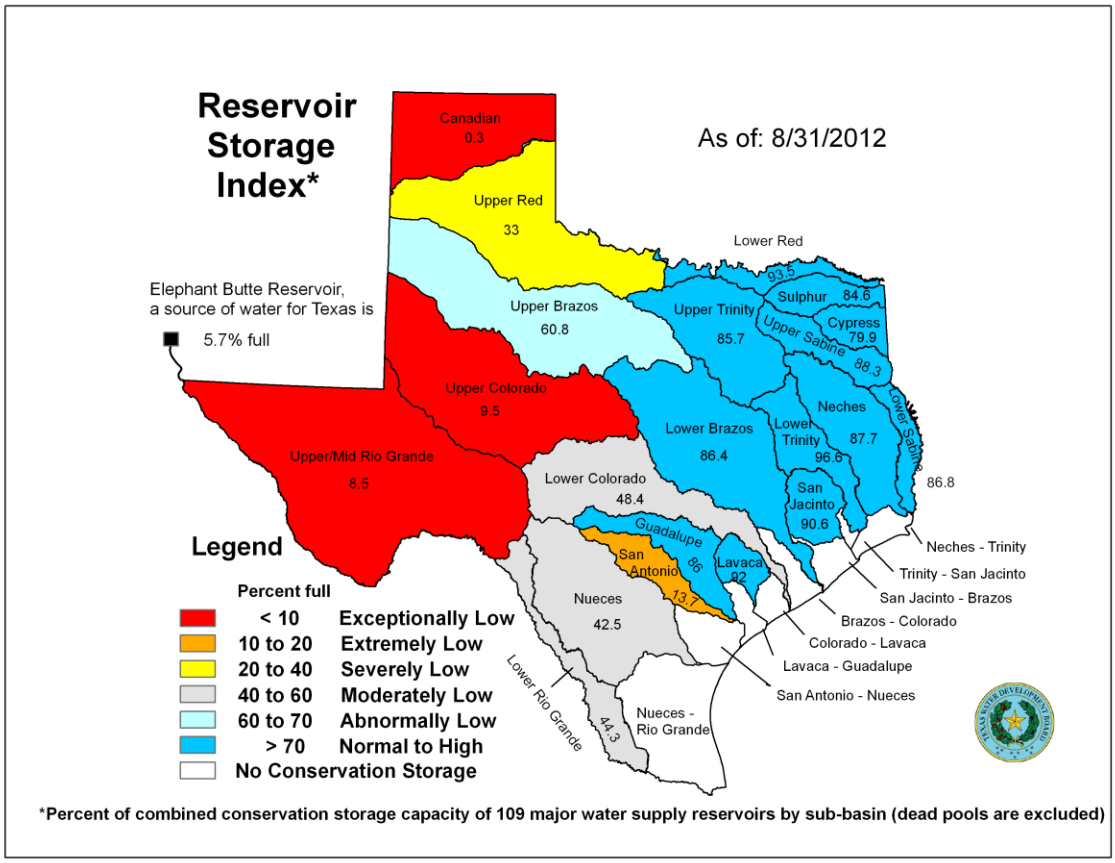
* Only the Texas share of storage in border reservoirs is counted.

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

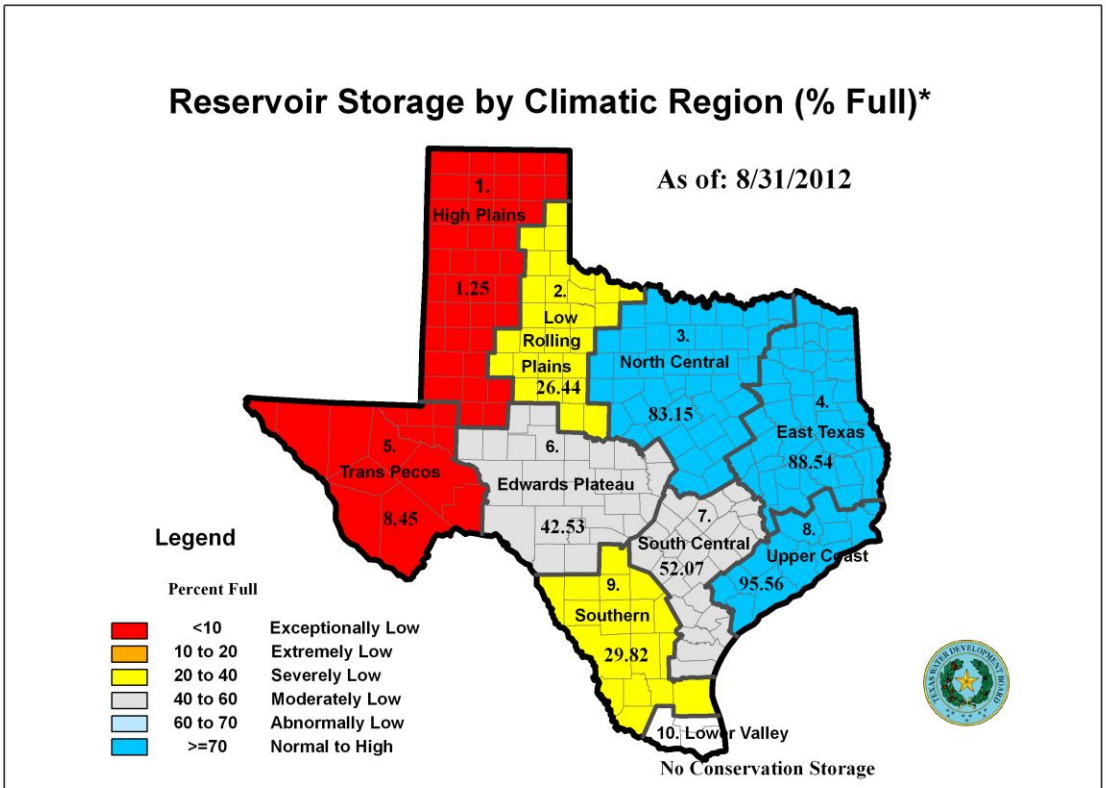


Figures are based on the end of the month data at 109 major reservoirs that represent 96 percent of the total conservation storage capacity of the 175 major water supply reservoirs in Texas. Major reservoirs are defined as having a conservation storage capacity of 5,000 acre-feet or greater.

AUGUST RESERVOIR CONDITIONS



*Percent of combined conservation storage capacity of 109 major water supply reservoirs by sub-basin (dead pools are excluded)



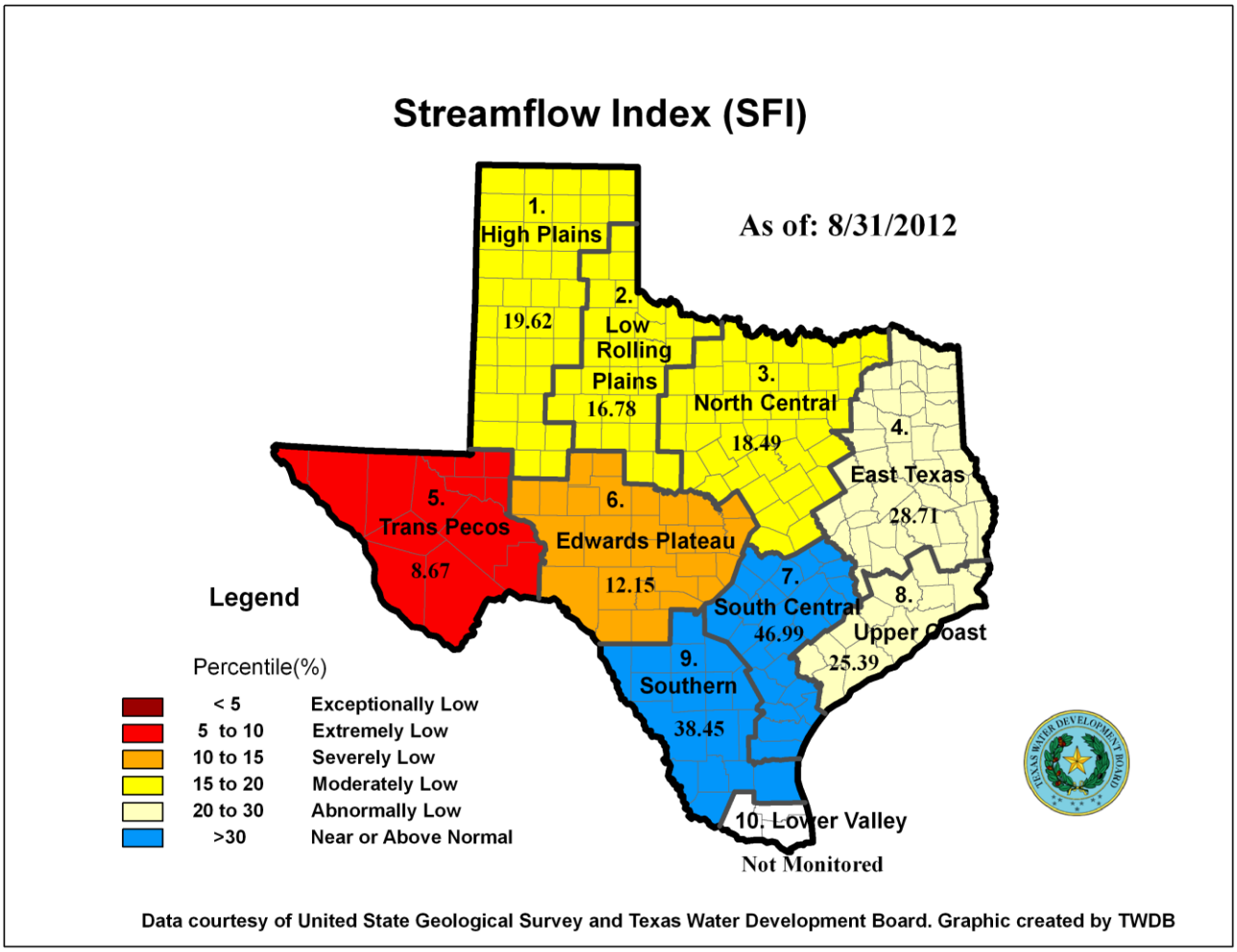
Data courtesy of U. S. Geological Survey and Texas Water Development Board. Graphic created by TWDB.

*Percent of combined conservation storage capacity of 109 major water supply reservoirs for that region (dead pools are excluded)

AUGUST STREAMFLOW CONDITIONS

Of 29 reporting index stations monitored this month, computed 30-day mean flows were exceptionally low (<5%) at 4 stations, extremely low (5-10%) at 7 stations, severely low (10-15%) at 2 stations, moderately low (15-20%) at 2 stations, abnormally low (20% - 30%) at 2 stations, and near normal (30% - 70%) at the remaining 12 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 extremely low in Trans-Pecos, severely low in Edwards Plateau, moderately low in North Central, High Plains and Low Rolling Plains, abnormally low in East and Upper Coast, and near normal in all other regions. 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 Late Aug. 2012 (acre-feet)	(%)	Change since Late July 2012 (acre-feet)	(%)	Change since Late Aug. 2011 (acre-feet)	(%)
HIGH PLAINS								
Palo Duro Reservoir	1	60,897	1,881	3	-449	-1	-3,352	-6
Meredith, Lake (Texas)	2	500,000	0	0	0	0	0	0
Meredith, Lake (Texas & Oklahoma)	(2)	779,556	0	0	0	0	0	0
MacKenzie Reservoir	3	46,429	3,419	7	-191	0	-1,196	-3
White River Lake	4	29,880	2,549	9	-530	-2	-3,135	-10
TOTAL		637,206	7,849	1	-1,170	0	-7,683	-1
LOW ROLLING PLAINS								
Greenbelt Lake	5	59,500	9,010	15	-591	-1	-2,833	-5
*Electra, Lake	6	5,626	16	0	-5	0	-20	0
N. Fork Buffalo Crk Reservoir	7	15,400	1,461	9	-168	-1	-1,338	-9
Kemp, Lake	8	245,308	71,948	29	-8,435	-3	-30,324	-12
Millers Creek Reservoir	9	27,888	6,846	25	-597	-2	-4,856	-17
Alan Henry Reservoir	10	94,808	73,397	77	-1,477	-2	-5,061	-5
Stamford, Lake	11	51,570	16,841	33	-1,731	-3	-13,921	-27
J B Thomas, Lake	12	199,931	792	0	-139	0	-2,910	-1
Fort Phantom Hill, Lake	13	70,030	30,165	43	-1,902	-3	-9,813	-14
Sweetwater, Lake	14	10,006	1,959	20	-239	-2	-1,635	-16
Colorado City, Lake	15	31,793	8,063	25	-708	-2	-2,891	-9
Champion Creek Reservoir	16	41,618	4,007	10	-298	-1	-951	-2
Abilene, Lake	17	6,099	570	9	-153	-3	-1,733	-28
Coleman, Lake	18	38,076	13,401	35	-603	-2	-2,652	-7
Hords Creek Lake	19	5,684	0	0	0	0	0	0
TOTAL		903,337	238,476	26	-17,046	-2	-80,938	-9
NORTH CENTRAL								
Nocona, Lake (Farmers Crk)	20	21,445	11,936	56	-598	-3	-1,925	-9
Hubert H Moss Lake	21	24,058	22,551	94	-492	-2	1,165	5
Texoma, Lake (Texas)	22	1,248,903	1,183,285	95	-41,673	-3	126,169	10
Texoma, Lake (Texas & Oklahoma)	(22)	2,497,806	2,366,570	95	-83,346	-3	252,337	10
*Pat Mayse Lake	23	117,844	107,087	91	-3,430	-3	2,274	2
Kickapoo, Lake	24	85,825	36,457	42	-1,543	-2	-10,015	-12
Arrowhead, Lake	25	235,997	106,547	45	-4,164	-2	-27,562	-12
Bonham, Lake	26	11,026	8,957	81	-411	-4	885	8
Crook, Lake	27	9,195	7,461	81	-390	-4	415	5
Amon G Carter, Lake	28	19,903	13,977	70	-905	-5	613	3
Ray Roberts, Lake	29	798,758	741,568	93	-18,686	-2	39,715	5
Jim Chapman Lake (Cooper)	30	260,332	201,770	78	-17,348	-7	82,392	32
Graham, Lake	31	45,260	38,168	84	-1,289	-3	6,174	14
*Lost Creek Reservoir	32	11,950	10,895	91	-164	-1	1,377	12
Bridgeport, Lake	33	366,236	259,681	71	-14,408	-4	25,746	7
Lewisville Lake	34	563,228	464,788	83	-27,663	-5	21,230	4
Lavon Lake	35	443,844	335,849	76	-33,643	-8	68,753	15
Hubbard Creek Reservoir	36	318,067	111,916	35	-8,072	-3	-33,813	-11
Possum Kingdom Lake	37	540,340	422,923	78	-9,957	-2	11,331	2
*Mineral Wells, Lake	38	7,065	5,534	78	-256	-4	830	12
Weatherford, Lake	39	17,789	13,237	74	-921	-5	1,621	9
Eagle Mountain Lake	40	179,880	142,865	79	-1,583	-1	2,691	1
Worth, Lake	41	24,500	17,263	70	403	2	2,139	9
Grapevine Lake	42	164,702	143,300	87	121	0	-2,057	-1
Ray Hubbard, Lake	43	452,040	414,752	92	-607	0	57,060	13
New Terrell City Lake	44	8,583	7,647	89	-249	-3	1,615	19
Daniel, Lake	45	9,435	3,540	38	-386	-4	1,218	13
Palo Pinto, Lake	46	26,827	21,291	79	-2,343	-9	3,456	13
Benbrook Lake	47	85,648	61,010	71	-9,185	-11	19,697	23
Arlington, Lake	48	40,156	30,834	77	1,141	3	5,660	14

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage Late Aug. 2012 (acre-feet)	(%)	Change since Late July 2012 (acre-feet)	(%)	Change since Late Aug. 2011 (acre-feet)	(%)
NORTH CENTRAL (Continue)								
Joe Pool Lake	49	142,861	130,585	91	-3,024	-2	6,724	5
*Cisco, Lake	50	26,000	10,678	41	-462	-2	-770	-3
Leon, Lake	51	26,421	19,574	74	-1,187	-4	8,014	30
Granbury, Lake	52	128,046	102,248	80	-6,903	-5	2,312	2
Pat Cleburne, Lake	53	26,008	21,213	82	-1,411	-5	2,838	11
Waxahachie, Lake	54	10,779	9,171	85	-289	-3	1,130	10
Bardwell Lake	55	46,122	40,920	89	-2,262	-5	5,625	12
Proctor Lake	56	55,457	40,508	73	-4,304	-8	18,153	33
Whitney, Lake	57	553,349	458,474	83	-39,996	-7	165,422	30
Aquilla Lake	58	44,460	37,835	85	-2,414	-5	5,528	12
Navarro Mills Lake	59	49,826	43,481	87	-3,657	-7	6,897	14
*Halbert, Lake	60	6,033	4,674	77	-114	-2	2,125	35
Richland-Chambers Reservoir	61	1,087,839	980,459	90	-40,416	-4	134,526	12
*Brownwood, Lake	62	131,429	63,631	48	-3,585	-3	9,713	7
Waco, Lake	62	198,943	183,863	92	-8,745	-4	29,789	15
Limestone, Lake	64	208,015	168,005	81	-12,589	-6	43,392	21
Belton Lake	65	435,225	395,547	91	-21,467	-5	58,470	13
Stillhouse Hollow Lake	66	227,771	210,472	92	-4,045	-2	61,812	27
Georgetown, Lake	67	36,823	23,100	63	-4,267	-12	7,941	22
Granger Lake	68	50,779	46,839	92	-1,632	-3	9,762	19
Tawakoni, Lake	69	888,126	792,482	89	-32,075	-4	94,597	11
TOTAL		10,519,148	8,730,848	83	-393,545	-4	1,082,854	10
EAST								
Wright Patman Lake	70	262,330	231,788	88	-26,936	-10	1,710	1
*Sulphur Springs, Lake	71	17,838	15,208	85	-790	-4	5,718	32
Cypress Springs, Lake	72	66,756	62,152	93	-1,535	-2	5,254	8
Bob Sandlin, Lake	73	200,579	162,284	81	-5,501	-3	24,210	12
Fork Reservoir, Lake	74	604,927	520,852	86	-11,594	-2	63,605	11
O the Pines, Lake	75	267,672	188,862	71	-8,977	-3	-9,129	-3
Cedar Creek Reservoir in Trinity	76	644,686	567,166	88	-22,325	-3	98,449	15
Athens, Lake	77	29,435	23,907	81	-1,102	-4	1,172	4
Palestine, Lake	78	370,907	345,562	93	-7,958	-2	75,968	20
Tyler, Lake	79	73,256	56,649	77	-2,049	-3	7,738	11
Murvaul, Lake	80	38,284	35,691	93	-1,168	-3	9,974	26
Jacksonville, Lake	81	25,670	24,123	94	-745	-3	3,214	13
Nacogdoches, Lake	82	39,521	29,929	76	-1,746	-4	8,780	22
Houston County Lake	83	17,113	15,058	88	-1,026	-6	1,316	8
Sam Rayburn Reservoir	84	2,857,077	2,500,906	88	-201,335	-7	780,955	27
Toledo Bend Reservoir (Texas)	85	2,236,450	1,938,572	87	-67,659	-3	532,427	24
Toledo Bend Reservoir (TX & LA)	(85)	4,472,900	3,877,145	87	-135,317	-3	1,064,854	24
*Livingston, Lake	86	1,741,867	1,685,000	97	-37,000	-2	142,000	8
B A Steinhagen Lake	87	66,966	60,313	90	-2,620	-4	-1,310	-2
Conroe, Lake	88	416,188	364,853	88	-7,979	-2	33,310	8
TOTAL		9,977,522	8,828,875	88	-410,045	-4	1,785,361	18
TRANS-PECOS								
Red Bluff Reservoir	89	130,170	11,003	8	-751	-1	4,047	3
TOTAL		130,170	11,003	8	-751	-1	4,047	3

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

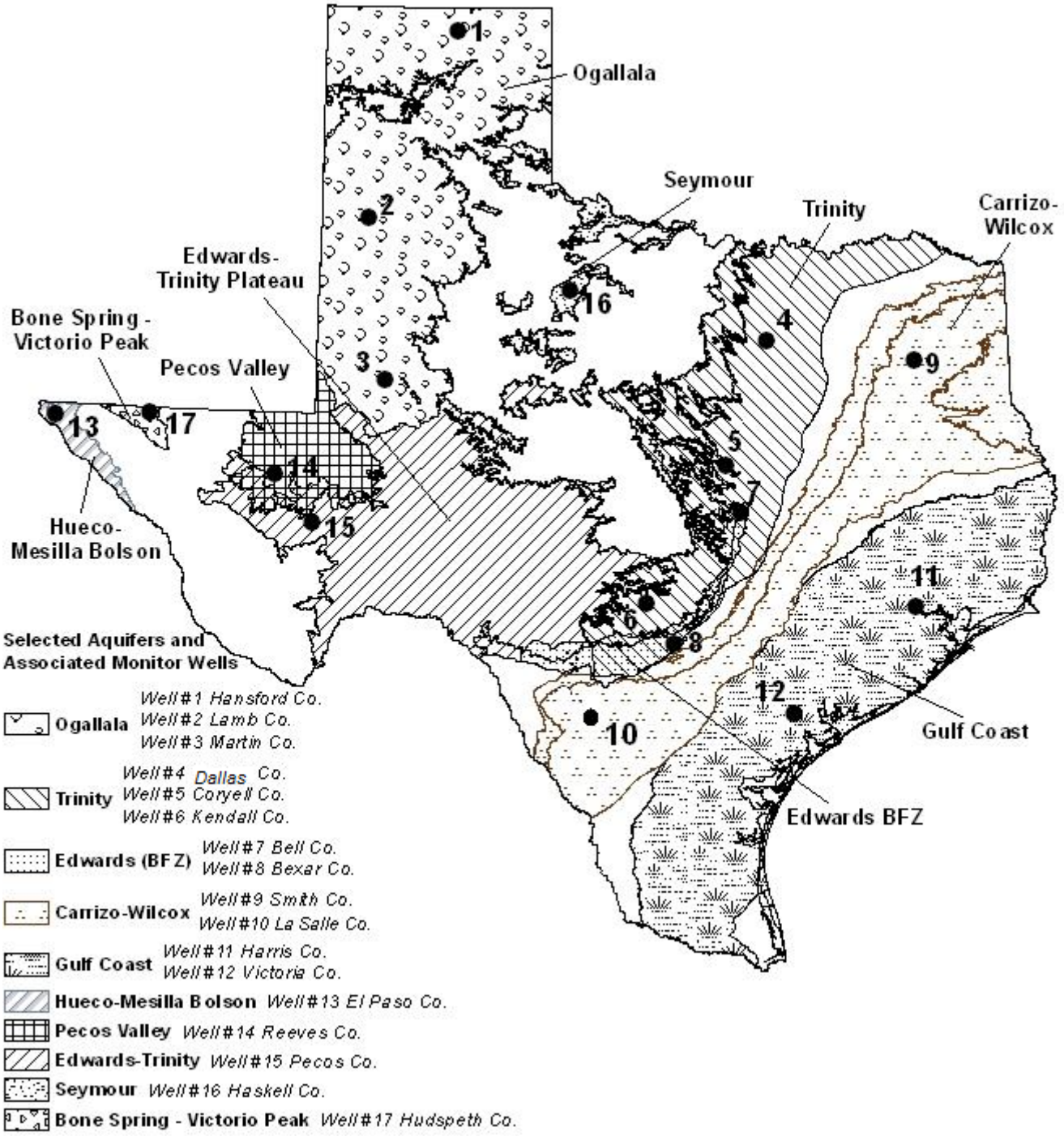
Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage Late Aug. 2012 (acre-feet)	(%)	Change since Late July 2012 (acre-feet)	(%)	Change since Late Aug. 2011 (acre-feet)	(%)
EDWARDS PLATEAU								
Oak Creek Reservoir	90	39,260	11,376	29	-690	-2	-5,143	-13
E V Spence Reservoir	91	517,272	1,079	0	-477	0	-1,485	0
O C Fisher Lake	92	79,483	0	0	0	0	0	0
*O H Ivie Reservoir	93	554,335	70,516	13	-6,923	-1	-53,352	-10
Twin Buttes Reservoir	94	177,850	0	0	0	0	-3,647	-2
Brady Creek Reservoir	95	29,110	6,075	21	-416	-1	-2,142	-7
Buchanan, Lake	96	824,519	410,155	50	-25,369	-3	21,325	3
Lyndon B Johnson, Lake	97	113,323	111,622	98	547	0	-61	0
*Amistad Reservoir (Texas)	98	1,840,849	1,161,000	63	-134,000	-7	-489,000	-27
*Amistad Reservoir (TX & Mexico)	(98)	3,275,532	1,793,000	55	-115,000	-4	-1,134,000	-35
TOTAL		4,176,001	1,771,823	42	-167,328	-4	-533,505	-13
SOUTH CENTRAL								
Travis, Lake	99	1,113,255	472,283	42	-36,464	-3	13,830	1
*Austin, Lake	100	21,804	20,594	94	-90	0	15	0
Somerville Lake	101	147,104	132,918	90	-7,891	-5	66,776	45
Canyon Lake	102	378,781	326,833	86	-7,969	-2	5,117	1
Medina Lake	103	254,823	35,041	14	-6,629	-3	-49,473	-19
*Coleto Creek Reservoir	104	31,040	25,771	83	-2,728	-9	2,658	9
TOTAL		1,946,807	1,013,440	52	-61,771	-3	38,923	2
UPPER COAST								
Houston, Lake	105	128,863	128,863	100	0	0	43,853	34
Texana, Lake	106	159,640	147,013	92	-11,799	-7	70,039	44
TOTAL		288,503	275,876	96	-11,799	-4	113,892	39
SOUTHERN								
Choke Canyon Reservoir	107	695,262	366,056	53	-20,003	-3	-97,160	-14
Corpus Christi, Lake	108	256,961	38,827	15	-14,514	-6	-86,957	-34
*Falcon Reservoir (Texas)	109	1,551,034	342,000	22	-28,000	-2	-555,000	-36
*Falcon Reservoir (TX & Mexico)	(109)	2,646,817	502,000	19	-71,000	-3	-851,000	-32
TOTAL		2,503,257	746,883	30	-62,517	-2	-739,117	-30
STATE TOTAL		31,081,951	21,625,073	70	-1,125,972	-4	1,663,834	5
In Addition								
Elephant Butte Reservoir		1,975,000	112,688	6	-66,478	-3	-90,800	-5

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

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.

AUGUST 2012 GROUNDWATER LEVELS IN OBSERVATION WELLS



August, 2012

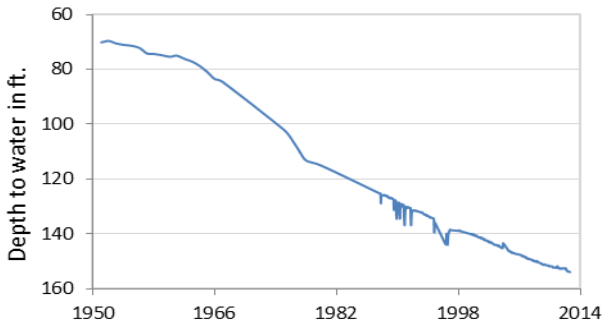
Water level measurements were available for all seventeen key monitoring wells in the state. Water levels rose in two of the monitoring wells since the beginning of August, ranging from 0.39 feet in the El Paso County Hueco Mesilla Bolson Aquifer well to 1 foot in the Reeves County Pecos Valley Aquifer well. Water levels declined in the remaining fifteen monitoring wells, ranging from 0.08 feet in the Hansford County Ogallala Aquifer well to 8.96 feet in the La Salle County Carrizo Wilcox Aquifer well. The J-17 well in San Antonio recorded a water level of 90.2 feet below land surface or 640.8 feet above mean sea level. This water level is 0.8 feet below the Stage III critical management level in that segment of the Edwards Aquifer. Stage III restrictions were declared by the E.A.A on August 15th when the ten-day average fell below 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.**

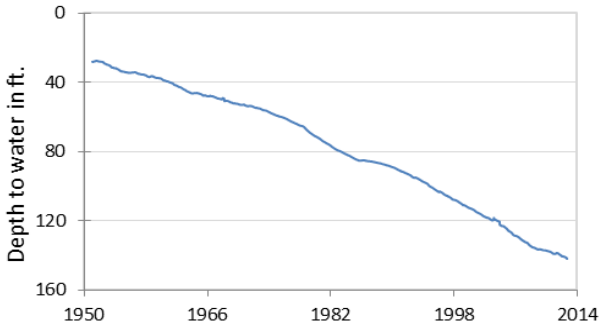
Monitoring Well	Aug 2012	July 2012	Month Change	Year Change	Historical Change
(1) Hansford 0354301	153.89	153.81	-0.08	-1.22	-83.77
(2) Lamb 1053602	141.56	141.36	-0.2	-2.3	-113.41
(3) Martin 2739903	140.4	140.25	-0.15	0	-35.51
(4) Dallas 3319101	486.96	485.9	-1.06	-12.72	-264.96
(5) Coryell 4035404	511.62	506.03	-5.59	-7.18	-219.62
(6) Kendall 6802609	155.83	148.36	-7.47	4.17	-95.83
(7) Bell 5804816	125.79	125.48	-0.31	0.86	-2.66
(8) Bexar 6837203	90.2	88.47	-1.73	0.61	-43.56
(9) Smith 3430907	436.96	434.52	-2.44	0.26	-70.96
(10) La Salle 7738103	432.83	423.87	-8.96	NA	-179.76
(11) Harris 6514409	202.52	201.08	-1.44	0.65	-67.02
(12) Victoria 8017502	36.9	36.53	-0.37	0.55	-2.9
(13) El Paso 4913301	291.01	291.40	0.39	-0.87	-59.11
(14) Reeves 4644501	151.04	152.04	1	4.67	-58.95
(15) Pecos 5216802	238.17	229.35	-8.16	3.16	8.71
(16) Haskell 2135748	48.43	47.82	-0.61	-0.96	-7.1
(17) Hudspeth 4807516	150.06	148.86	-1.2	1.55	-46.14

AUGUST GROUNDWATER LEVELS IN OBSERVATION WELLS

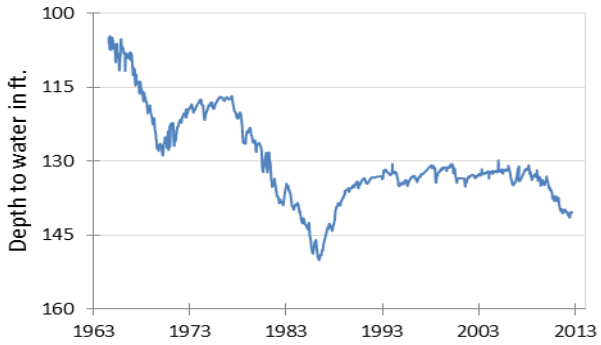
(1) State Well ID 03-54-301
Near Spearman, Hansford County
Ogallala Aquifer



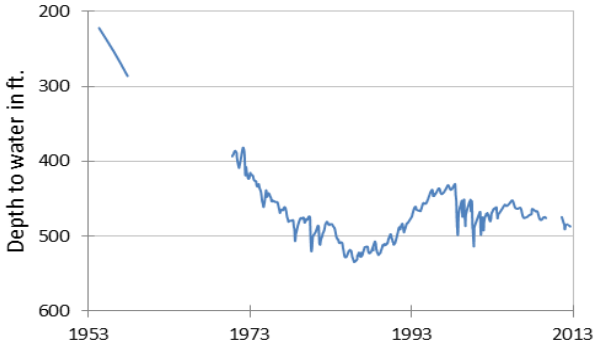
(2) State Well ID 10-53-602
Near Earth, Lamb County
Ogallala Aquifer



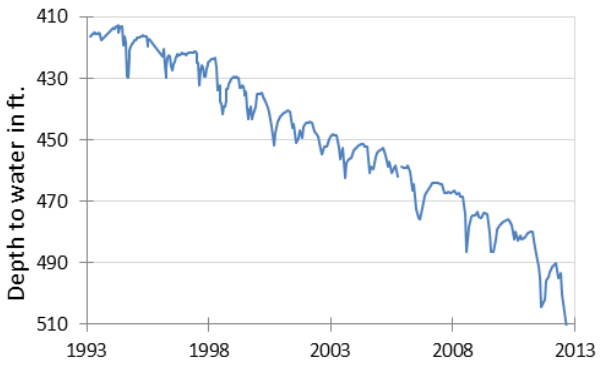
(3) State Well ID 27-39-903
Northwest Martin County
Ogallala Aquifer



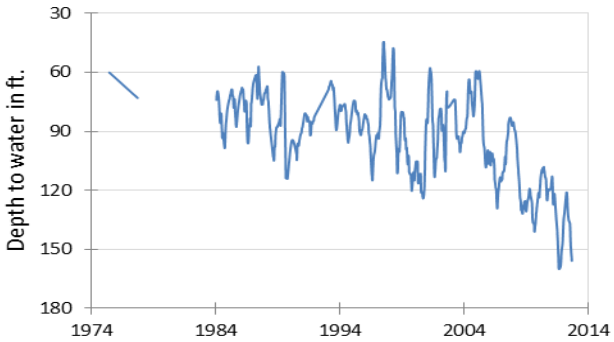
(4) State Well ID 33-19-101
Southeast Dallas, Dallas County
Twin Mountains Formation-Trinity Aquifer



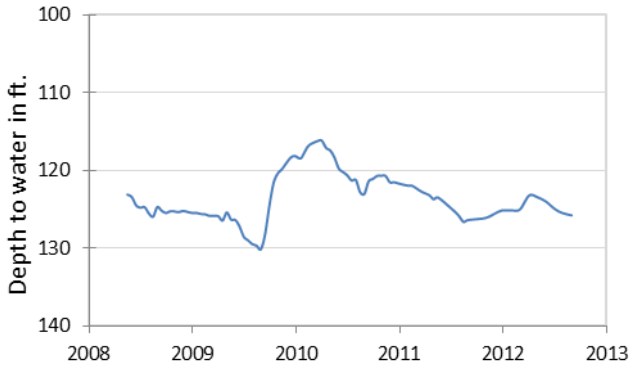
(5) State Well ID 40-35-404
Gatesville, Coryell County
Hosston Formation-Trinity Aquifer



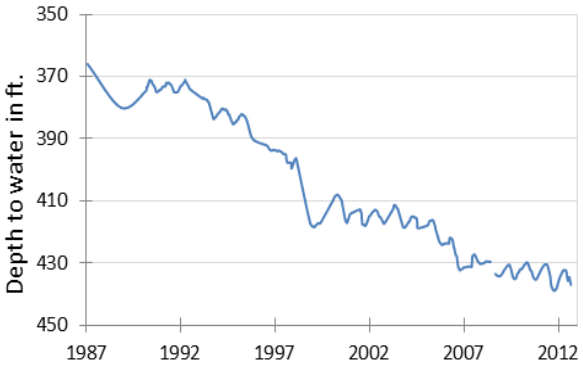
(6) State Well ID 68-02-609
Waring, Kendall County
Cow Creek Formation-Trinity Aquifer



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

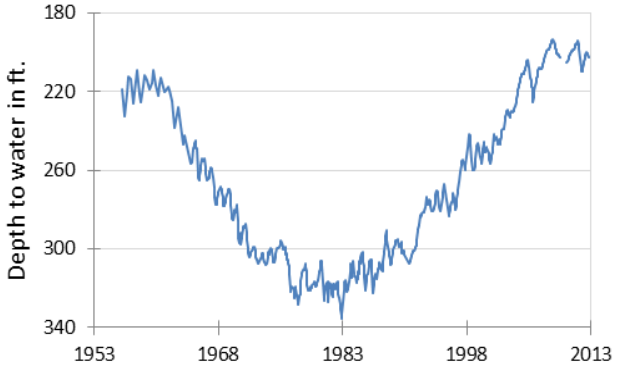


(9) State Well ID 34-30-907
Red Springs, Smith County
Carrizo-Wilcox Aquifer

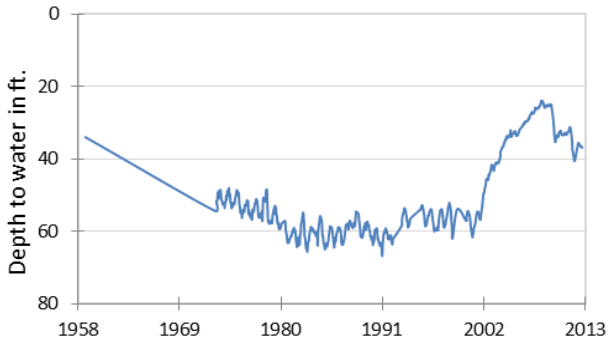


(10) State Well ID 77-38-103
Near Cotulla, La Salle County
Carrizo-Wilcox Aquifer

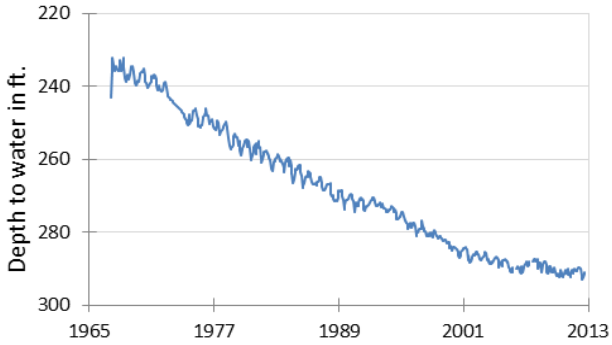
(11) State Well ID 65-14-409
Alief, Harris County
Evangeline Formation-Gulf Coast Aquifer



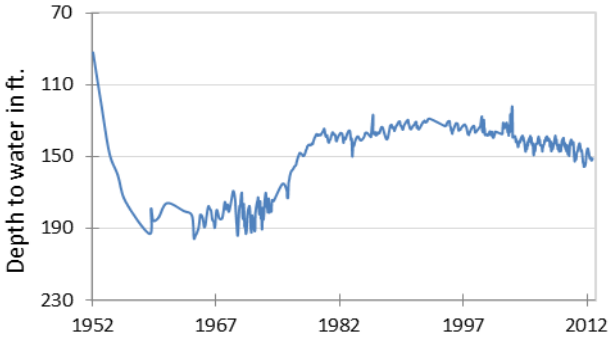
(12) State Well ID 80-17-502
Near Bloomington, Victoria County
Lissie Formation-Gulf Coast Aquifer



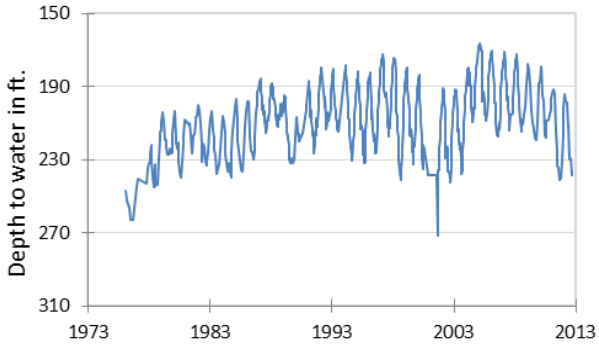
(13) State Well ID 49-13-301
El Paso, El Paso County
Hueco-Mesilla Bolson Aquifer



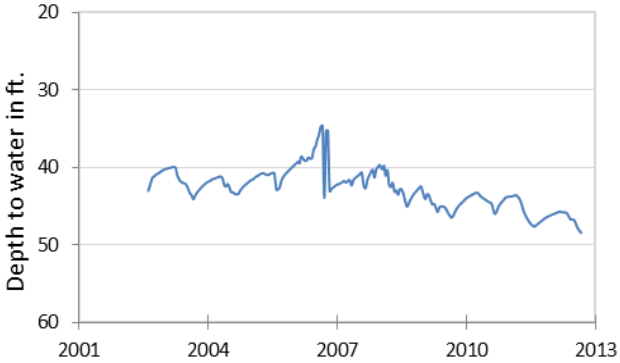
(14) State Well ID 46-44-501
Near Pecos, Reeves County
Pecos Valley Aquifer



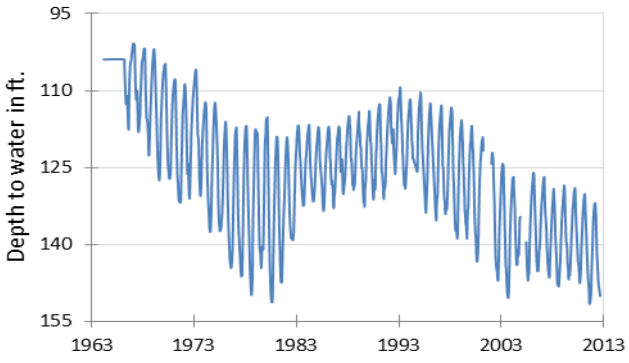
(15) State Well ID 52-16-802
Fort Stockton, Pecos County
Edwards-Trinity (Plateau) Aquifer



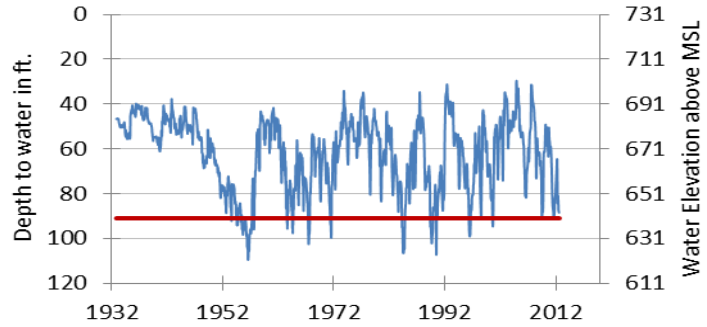
(16) State Well ID 21-35-748
Near O'Brien, Haskell County
Seymour Aquifer

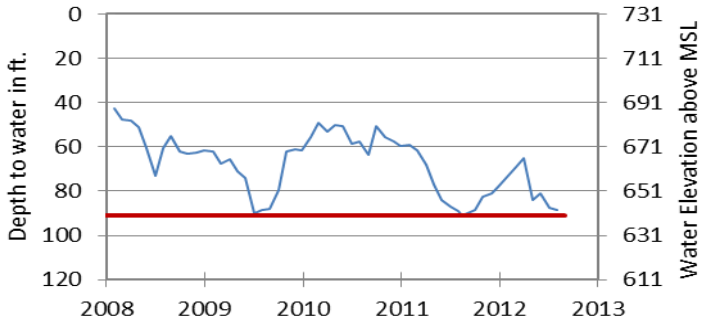


(17) State Well ID 48-07-516
Dell City, Hudspeth County
Bone Spring - Victorio Peak Aquifer



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

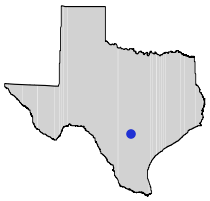




The late August water level measurement in this Edwards (BFZ) Aquifer well, elevation 731 feet above sea level, was 90.2 feet below land surface, or 640.8 feet above mean sea level. This was 1.73 feet below last month's measurement, 0.61 feet below last year's measurement, and 43.56 feet below the initial measurement recorded in 1932.

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

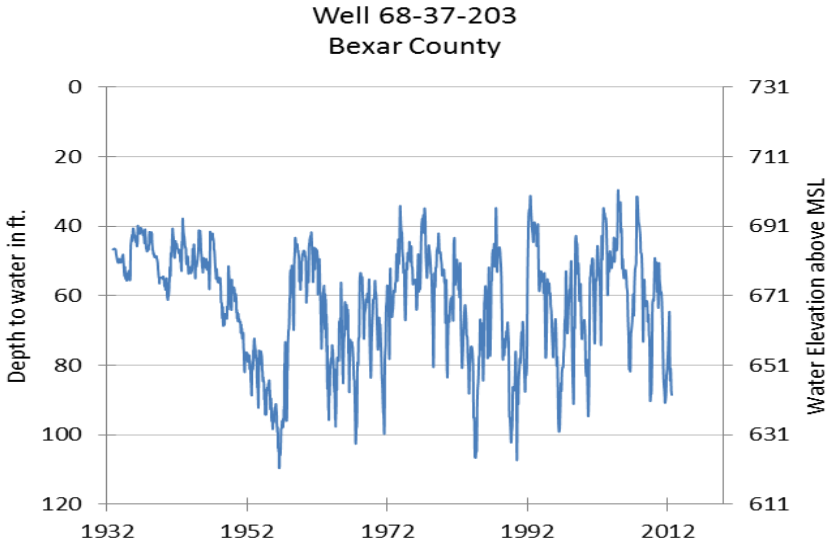
HYDROGRAPH OF THE MONTH



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

Edwards-Balcones Fault Zone Aquifer

The Edwards (Balcones Fault Zone) Aquifer is a major aquifer in the south central part of the state. It consists of fractured and partially dissolved limestone that creates a highly permeable aquifer. Water quality, although hard, is generally fresh and contains less than 500 milligrams per liter of total dissolved solids. Water from the aquifer is primarily used for municipal, irrigation, and recreational purposes. San Antonio obtains almost all of its water supply from the Edwards (Balcones Fault Zone) Aquifer. The aquifer feeds several well-known springs, including Comal Springs in Comal County, which is the largest spring in the state, and San Marcos Springs in Hays County. Hueco, San Pedro, San Antonio, and Leona springs also discharge from the aquifer. Because of the aquifer's highly permeable nature, water levels and spring flows respond quickly to rainfall, drought, and pumping. Although water levels periodically and seasonally decline rapidly in wells throughout the aquifer, they also rebound quickly with adequate rainfall



Total depth of this well is 874 ft. It is not used for production but is the primary monitoring well for the Edwards Aquifer Authority which manages groundwater use in BFZ portion of the Edwards Aquifer.

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