

RESERVOIR STORAGE

August 2013

At the end of the month, total storage in 115 of the state's major water supply reservoirs was at 18.98 million acre-feet*, or 60% of their total conservation storage capacity. This is 1.015 million acre-feet less than a month ago and 2.93 million acre-feet less than the storage at this time last year.

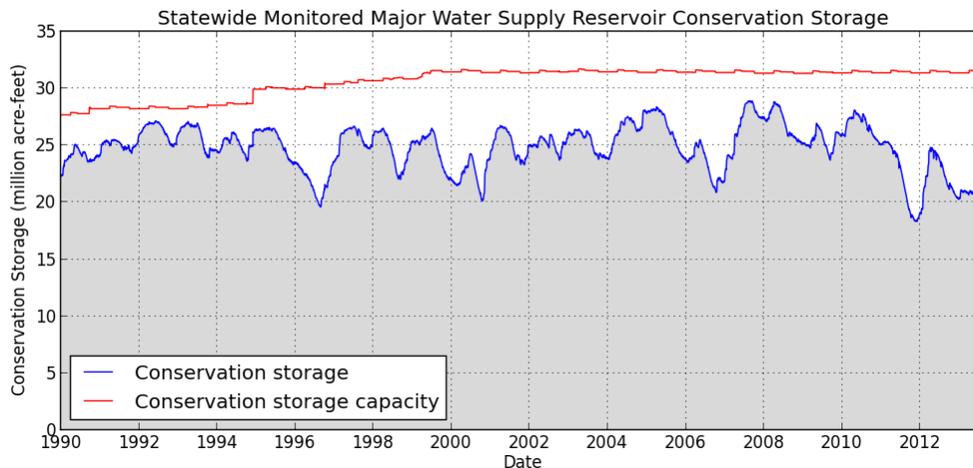
Four reservoirs, all in North Central and East regions, held 100% of conservation storage capacity. Twelve (12) reservoirs were at or below 10% full: Meredith, White River, Electra, and Twin Buttes were effectively empty, O. C. Fisher was at 1%, North Fork Buffalo Creek and J. B. Thomas were at 2%, Medina was at 4%, E.V. Spence was at 5%, Mackenzie was at 6%, and Palo Duro and Abilene were at 7% full.

Total combined storage was greater than 70% in the North Central (70%), Upper Coast (88%), and East (82%) regions. The regions with the lowest percentage storage were the High Plains (1%) and Trans-Pecos regions (18%). Storage over the last month declined in 8 regions and increased in only the High plains Region.

Elephant Butte reservoir held 90,796 acre-feet, or 5% of storage capacity. This is 17,394 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 115 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			Change since		Change since	
		Storage end of Aug 2013 (acre-feet)	(%)	(%)	end of Jul 2013 (acre-feet)	(%)	end of Aug 2012 (acre-feet)	(%)
HIGH PLAINS								
Palo Duro Reservoir	61,066	4,244	7		2,078	3	1,972	3
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	2,660	6		116	0	-702	-2
White River Lake	29,880	7	0		-336	-1	-2,534	-8
TOTAL	637,396	6,911	1		1,858	0	-1,264	-0
LOW ROLLING PLAINS								
Greenbelt Lake	59,968	8,332	14		-186	-0	-703	-1
*Electra, Lake	5,626	0	0		0	0	-17	-0
N. Fork Buffalo Crk Reservoir	15,400	280	2		-98	-1	-1,015	-7
Kemp, Lake	268,811	70,676	26		-2,568	-1	-1,394	-1
Millers Creek Reservoir	26,768	5,433	20		-472	-2	-1,412	-5
Alan Henry Reservoir	94,808	64,808	68		-207	-0	-8,584	-9
Stamford, Lake	51,570	9,739	19		-764	-1	-7,094	-14
J B Thomas, Lake	199,931	3,489	2		194	0	no data	
Fort Phantom Hill, Lake	70,030	34,206	49		-2,498	-4	4,051	6
Sweetwater, Lake	12,267	2,790	23		-169	-1	-1,188	-10
Colorado City, Lake	30,758	8,915	29		-399	-1	852	3
Champion Creek Reservoir	41,580	no data						
Abilene, Lake	7,900	592	7		-100	-1	-1,084	-14
Coleman, Lake	38,075	16,639	44		-774	-2	3,224	8
Hords Creek Lake	8,443	2,835	34		-133	-2	650	8
TOTAL	890,355	228,734	26		-2,769	-0	-8,623	-1
NORTH CENTRAL								
Nocona, Lake (Farmers Crk)	21,444	9,639	45		-733	-3	-2,292	-11
Hubert H Moss Lake	24,058	20,757	86		-647	-3	-1,792	-7
Texoma, Lake (Texas)	1,258,113	1,253,639	100		-4,474	-0	70,739	6
Texoma, Lake (Texas & Oklahoma)	2,525,281	1,253,639	50		-4,474	-0	70,739	3
*Pat Mayse Lake	113,683	89,820	79		-5,185	-5	-13,049	-11
Kickapoo, Lake	85,825	30,899	36		-1,487	-2	-5,871	-7
Arrowhead, Lake	235,997	73,683	31		-3,988	-2	-32,836	-14
Bonham, Lake	11,027	9,392	85		-950	-9	522	5
Crook, Lake	9,195	7,909	86		-663	-7	421	5
Amon G Carter, Lake	19,266	10,060	52		-680	-4	-3,654	-19
Ray Roberts, Lake	788,167	630,316	80		-22,142	-3	-101,567	-13
Jim Chapman Lake (Cooper)	260,332	95,818	37		-17,353	-7	-106,857	-41
Graham, Lake	45,288	26,979	60		-1,713	-4	-11,194	-25
*Lost Creek Reservoir	11,950	9,155	77		-256	-2	-1,744	-15
Bridgeport, Lake	366,236	172,827	47		-4,881	-1	-86,543	-24
Lewisville Lake	563,228	380,018	67		-32,098	-6	-84,226	-15
Lavon Lake	406,388	219,490	54		-26,989	-7	-81,879	-20
Hubbard Creek Reservoir	326,559	93,472	29		-5,222	-2	-14,379	-4
Possum Kingdom Lake	540,340	379,444	70		-5,836	-1	-43,692	-8
*Mineral Wells, Lake	6,760	4,296	64		-174	-3	-1,298	-19
Weatherford, Lake	17,812	10,689	60		-1,029	-6	-2,549	-14
Eagle Mountain Lake	179,880	135,246	75		-10,707	-6	-7,129	-4
Worth, Lake	33,495	22,894	68		-292	-1	-3,319	-10
Grapevine Lake	164,703	113,634	69		-6,335	-4	-29,586	-18
Ray Hubbard, Lake	452,040	340,166	75		-27,190	-6	-74,154	-16
New Terrell City Lake	8,583	5,810	68		-455	-5	-1,828	-21
Daniel, Lake	9,515	2,706	28		-305	-3	-900	-9

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	Conservation Storage Capacity (acre-feet)	Conservation Storage end of Aug 2013 (acre-feet)	(%)	Change since end of Jul 2013 (acre-feet)	(%)	Change since end of Aug 2012 (acre-feet)	(%)
(North Central Continue)							
Palo Pinto, Lake	26,827	10,878	41	-1,343	-5	-10,305	-38
Benbrook Lake	85,648	61,718	72	-7,025	-8	627	1
Arlington, Lake	40,188	28,983	72	-3,199	-8	-1,902	-5
Joe Pool Lake	175,358	160,497	92	-5,033	-3	-2,585	-1
*Cisco, Lake	25,895	15,778	61	-546	-2	5,138	20
Leon, Lake	26,476	23,762	90	-983	-4	4,254	16
Granbury, Lake	128,046	79,686	62	-2,625	-2	-22,382	-17
Pat Cleburne, Lake	26,008	16,569	64	-1,327	-5	-4,611	-18
Waxahachie, Lake	10,780	8,131	75	-630	-6	-1,041	-10
Bardwell Lake	46,122	32,720	71	-2,311	-5	-8,192	-18
Proctor Lake	55,457	29,670	54	-3,818	-7	-11,276	-20
Whitney, Lake	553,344	340,389	62	-13,861	-3	-117,233	-21
Aquilla Lake	44,460	27,250	61	-2,273	-5	-10,553	-24
Navarro Mills Lake	49,827	37,185	75	-3,602	-7	-6,287	-13
*Halbert, Lake	6,033	3,806	63	-130	-2	-865	-14
Richland-Chambers Reservoir	1,087,839	727,131	67	-43,974	-4	-253,659	-23
*Brownwood, Lake	128,839	79,523	62	-3,403	-3	17,416	14
Waco, Lake	189,567	138,283	73	-9,152	-5	-34,998	-18
Limestone, Lake	208,014	132,793	64	-10,486	-5	-34,928	-17
Belton Lake	435,225	308,601	71	-29,501	-7	-86,810	-20
Stillhouse Hollow Lake	227,771	175,216	77	-5,717	-3	-35,062	-15
Georgetown, Lake	36,823	18,255	50	-1,714	-5	-4,844	-13
Granger Lake	50,779	45,006	89	-2,649	-5	-1,833	-4
Tawakoni, Lake	871,685	602,166	69	-36,617	-4	-176,957	-20
Mountain Creek, Lake	22,850	21,701	95	-1,149	-5	365	2
Squaw Creek, Lake	151,250	151,250	100	0	0	0	0
TOTAL	10,670,995	7,425,705	70	-374,852	-4	-1,439,179	-13
EAST							
Wright Patman Lake	231,496	231,496	100	0	0	0	0
*Sulphur Springs, Lake	17,747	14,266	80	-861	-5	-926	-5
Cypress Springs, Lake	66,756	57,495	86	-1,952	-3	-4,681	-7
Bob Sandlin, Lake	190,822	132,827	70	-8,553	-4	-21,497	-11
Caddo, Lake	29,898	15,860	53	-4,562	-15	-1,782	-6
Martin, Lake	75,116	56,243	75	-4,122	-5	2,967	4
Monticello, Lake	34,740	34,740	100	0	0	0	0
Fork Reservoir, Lake	605,061	463,457	77	-15,998	-3	-59,066	-10
O the Pines, Lake	268,566	175,572	65	-13,625	-5	-11,003	-4
Cedar Creek Reservoir in Trinity	644,686	461,925	72	-29,047	-5	-105,140	-16
Athens, Lake	29,435	22,596	77	-1,290	-4	-1,341	-5
Palestine, Lake	373,199	337,801	91	-17,326	-5	-9,801	-3
Tyler, Lake	73,161	51,120	70	-3,614	-5	-5,553	-8
Murvault, Lake	38,285	33,791	88	-1,819	-5	-1,786	-5
Jacksonville, Lake	25,670	24,367	95	-761	-3	247	1
Nacogdoches, Lake	39,522	33,601	85	-1,936	-5	3,675	9
Houston County Lake	17,113	14,557	85	-1,049	-6	-496	-3
Sam Rayburn Reservoir	2,857,077	2,232,960	78	-170,742	-6	-265,738	-9
Toledo Bend Reservoir (Texas)	2,245,752	1,878,336	84	-86,199	-4	-78,523	-3
Toledo Bend Reservoir (TX & LA)	4,472,900	1,878,336	42	-86,199	-2	-78,523	-2
*Livingston, Lake	1,785,348	1,656,656	93	-73,878	-4	-76,852	-4
B A Steinhagen Lake	66,961	62,698	94	918	1	2,933	4
Conroe, Lake	416,177	351,600	84	-8,526	-2	-13,199	-3
TOTAL	10,132,588	8,343,964	82	-444,942	-4	-647,562	-6

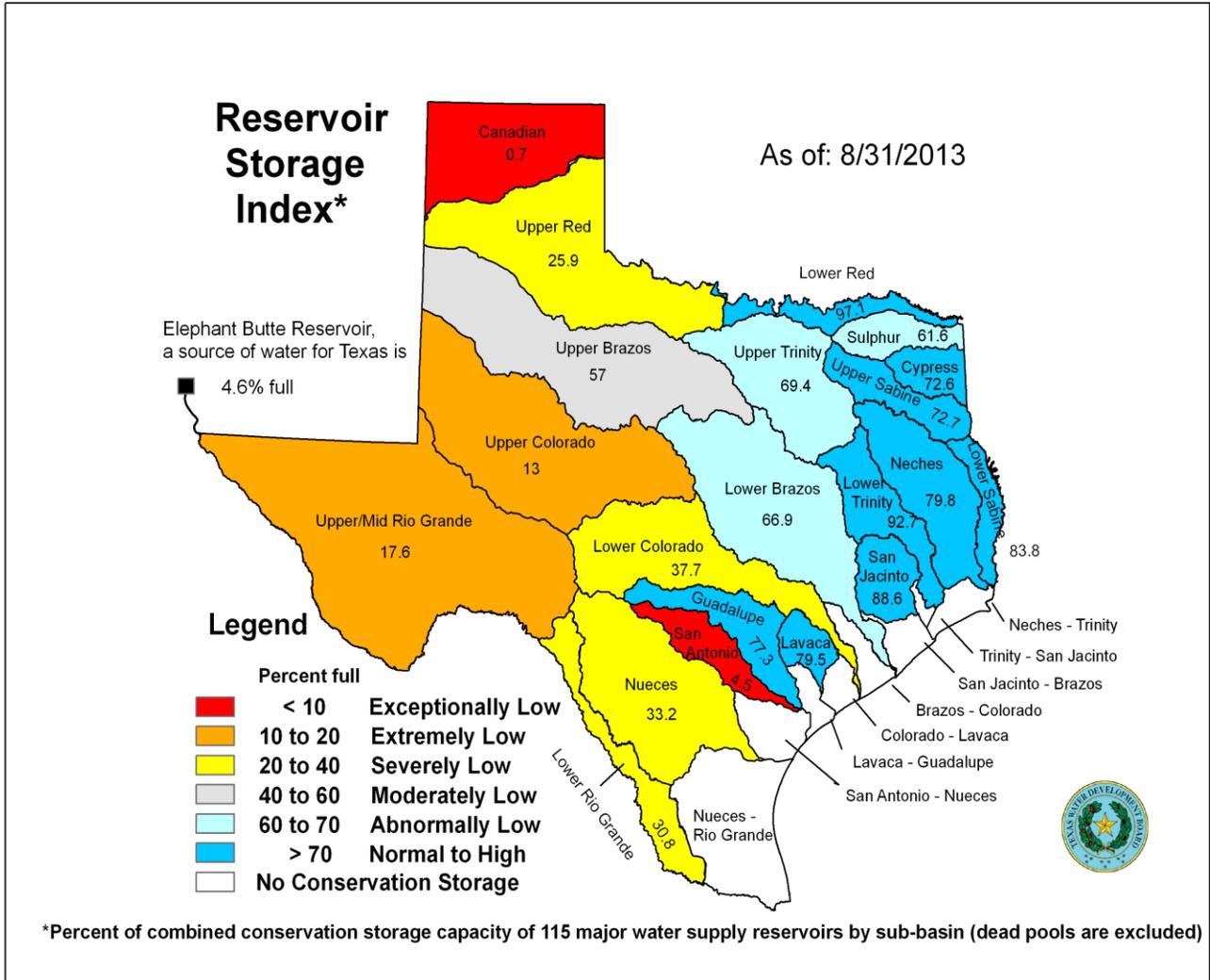
CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	Conservation Storage Capacity (acre-feet)	Conservation Storage end of Aug 2013 (acre-feet)	(%)	Change since end of Jul 2013 (acre-feet)	(%)	Change since end of Aug 2012 (acre-feet)	(%)
TRANS-PECOS							
Red Bluff Reservoir	151,110	26,532	18	-882	-1	4,319	3
TOTAL	151,110	26,532	18	-882	-1	4,319	3
EDWARDS PLATEAU							
Oak Creek Reservoir	39,210	9,035	23	-656	-2	-2,084	-5
E V Spence Reservoir	517,272	26,846	5	-3,332	-1	25,773	5
O C Fisher Lake	119,445	912	1	0	0	0	0
*O H Ivie Reservoir	554,340	93,093	17	-8,157	-1	22,614	4
Twin Buttes Reservoir	182,454	0	0	-1,774	-1	-949	-1
Brady Creek Reservoir	28,808	8,800	31	-590	-2	1,776	6
Buchanan, Lake	816,904	296,088	36	-21,906	-3	-98,836	-12
Inks, Lake	13,962	12,832	92	-135	-1	-188	-1
Lyndon B Johnson, Lake	115,056	111,186	97	795	1	0	0
*Amistad Reservoir (Texas)	1,840,849	745,935	41	9,209	1	-396,696	-22
*Amistad Reservoir (TX & Mexico)	3,275,532	745,935	23	9,209	0	-396,696	-12
TOTAL	4,228,300	1,304,727	31	-26,546	-1	-448,590	-11
SOUTH CENTRAL							
Travis, Lake	1,113,348	341,122	31	-28,914	-3	-130,650	-12
*Austin, Lake	23,972	22,788	95	-169	-1	92	0
Somerville Lake	147,104	84,458	57	-9,537	-6	-48,323	-33
Canyon Lake	378,781	293,160	77	-8,896	-2	-33,586	-9
Medina Lake	254,823	11,423	4	-1,016	-0	-23,586	-9
*Coletto Creek Reservoir	31,040	23,675	76	-1,866	-6	-2,073	-7
TOTAL	1,949,068	776,626	40	-50,398	-3	-238,126	-12
UPPER COAST							
Houston, Lake	128,054	125,074	98	-2,980	-2	-2,873	-2
Texana, Lake	159,566	126,979	80	-8,080	-5	-19,882	-12
TOTAL	287,620	252,053	88	-11,060	-4	-22,755	-8
SOUTHERN							
Choke Canyon Reservoir	695,262	254,598	37	-11,176	-2	-111,045	-16
Corpus Christi, Lake	256,961	61,979	24	-10,426	-4	23,171	9
*Falcon Reservoir (Texas)	1,551,007	299,548	19	-83,845	-5	-43,975	-3
*Falcon Reservoir (TX & Mexico)	2,646,817	299,548	11	-83,845	-3	-43,975	-2
TOTAL	2,503,230	616,125	25	-105,447	-4	-131,849	-5
STATE TOTAL							
	31,450,662	18,981,377	60	-1,015,038	-3	-2,933,629	-9
* Conservation volume is used as conservation storage capacity because the dead storage is unknown.							
Elephant Butte Reservoir	1,973,358	90,796	5	17,394	1	-21,493	-1

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.

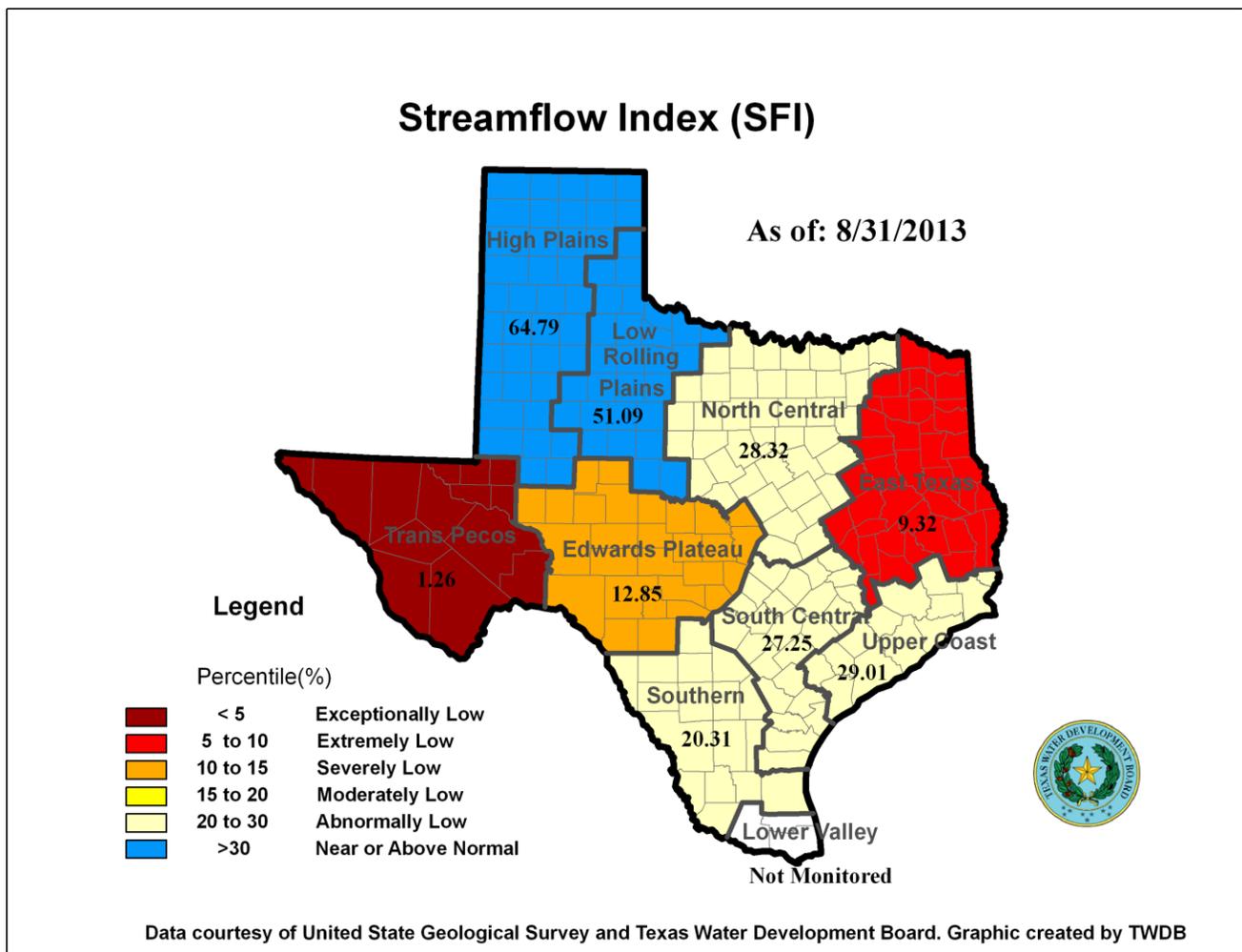
AUGUST RESERVOIR CONDITIONS



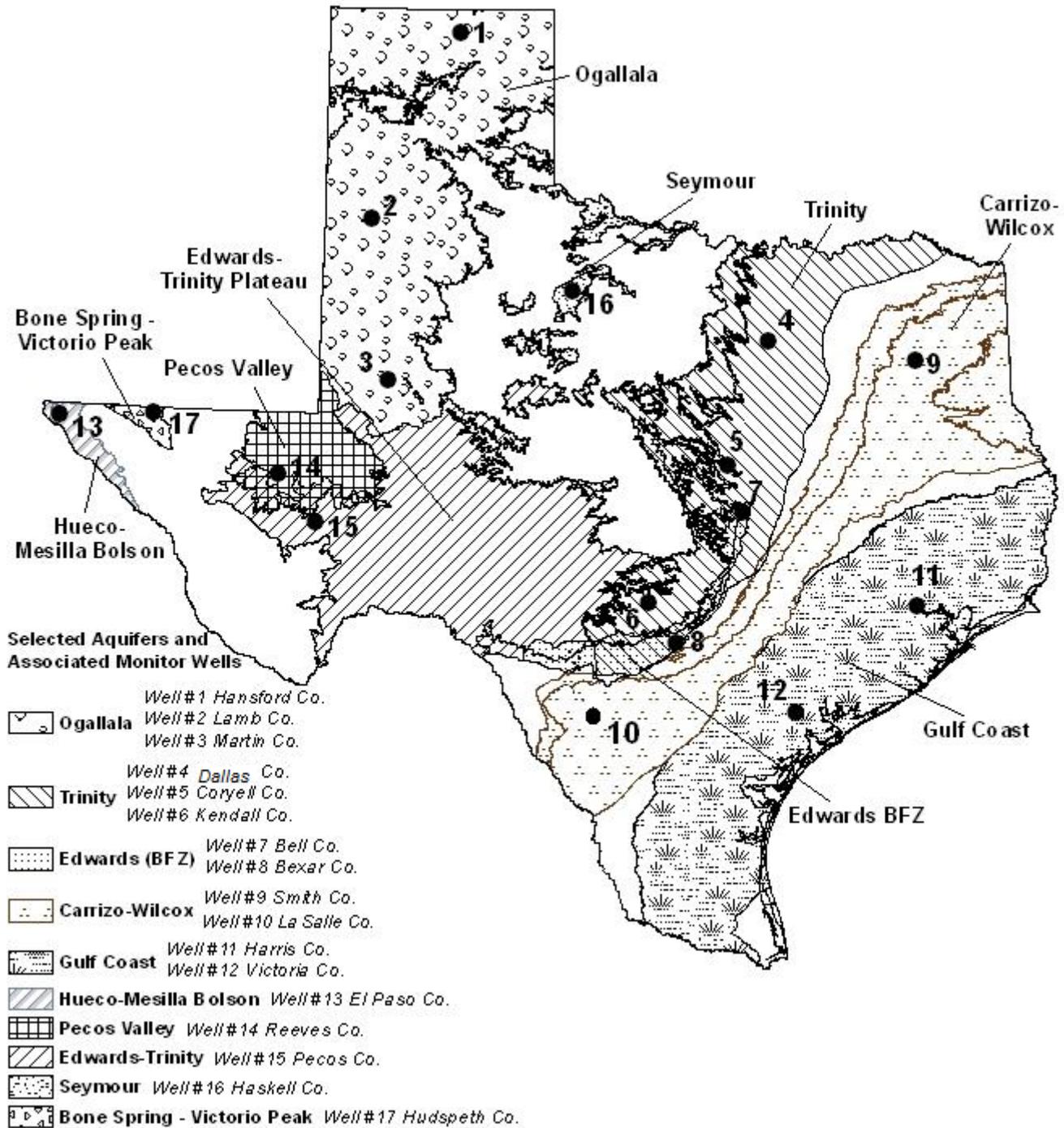
AUGUST STREAMFLOW CONDITIONS

Of 29 reporting index stations monitored this month, computed 30-day mean flows were exceptionally low (<5%) at 8 stations, extremely low (5-10%) at 5 stations, severely low (10-15%) at 1 station, abnormally low (20% - 30%) at 2 stations, and near normal (30% - 70%) at the remaining 13 stations. Compared to last month, flows have increased at 10 index stations and decreased at 17 stations.

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



AUGUST 2013 GROUNDWATER LEVELS IN OBSERVATION WELLS



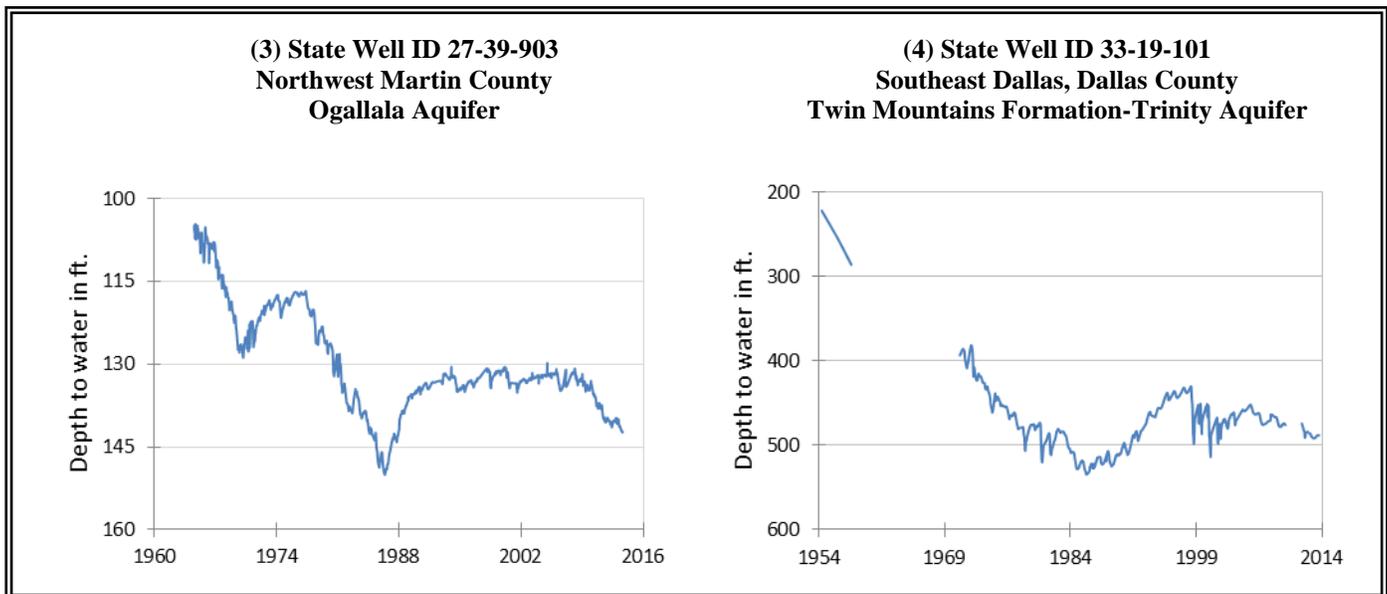
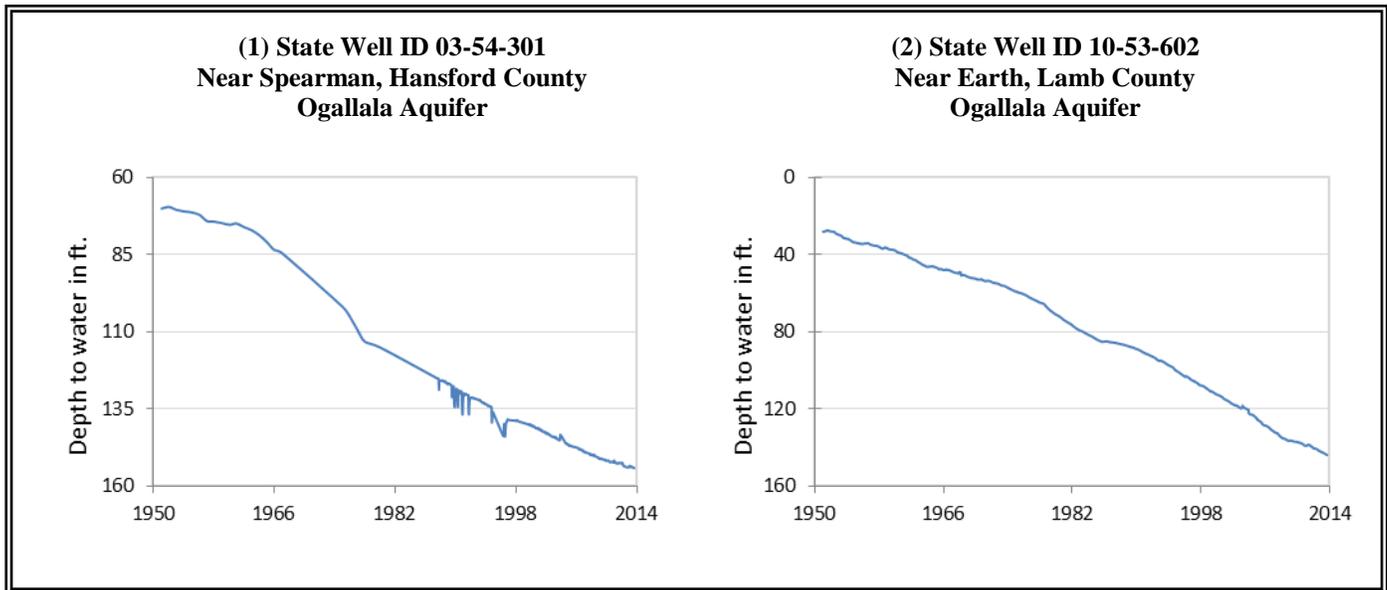
August, 2013

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 0.01 feet in the Martin County Ogallala Aquifer well to 0.06 feet in the Hansford County Ogallala Aquifer well. Water levels declined in fifteen monitoring wells, ranging from 0.14 feet in the Lamb County Ogallala Aquifer well to 7.19 feet in the Pecos County Edwards-Trinity Plateau Aquifer well. The J-17 well in San Antonio recorded a water level of 97.2 feet below land surface or 633.8 feet above mean sea level. This water level is 6.2 feet below 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.

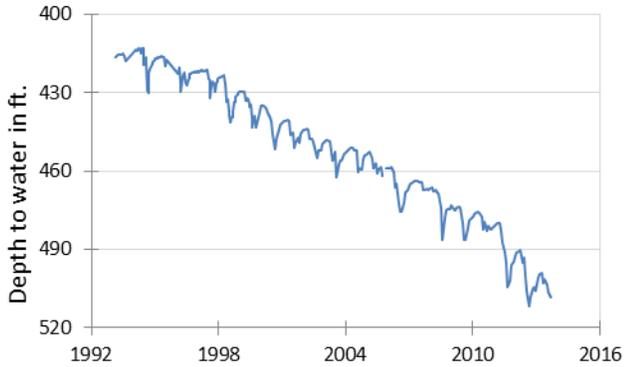
* ID is used in this publication to differentiate between the monitoring well number (1 - 17) as displayed on the aquifer map and the TWDB's six- or seven-digit state well "identification" number.

Monitoring Well	August	July	month change	year change	historical change	first measured
(1) Hansford 0354301	154.14	154.2	0.06	-0.25	-84.02	1951
(2) Lamb 1053602	143.86	143.72	-0.14	-2.30	-115.71	1951
(3) Martin 2739903	142.31	142.32	0.01	-1.91	-37.42	1964
(4) Dallas 3319101	488.21	488.02	-0.19	-0.19	-266.21	1954
(5) Coryell 4035404	508.33	506.18	-2.15	3.29	-216.33	1955
(6) Kendall 6802609	151.76	147.97	-3.79	4.07	-91.76	1975
(7) Bell 5804816	129.59	128.53	-1.06	-3.80	-6.46	2008
(8) Bexar 6837203	97.20	94	-3.20	-7.00	-50.56	1932
(9) Smith 3430907	441.53	439.62	-1.91	-4.57	-75.53	1987
(10) La Salle 7738103	487.71	484.47	-3.24	-54.88	-234.68	2003
(11) Harris 6514409	196.55	194.63	-1.92	5.97	-61.05	1956
(12) Victoria 8017502	37.53	35.48	-2.05	-0.63	-3.53	1958
(13) El Paso 4913301	295.25	293.97	-1.28	-4.24	-63.35	1967
(14) Reeves 4644501	157.95	156.1	-1.85	-6.91	-65.86	1952
(15) Pecos 5216802	238.77	231.58	-7.19	-0.60	8.11	1976
(16) Haskell 2135748	48.79	48.05	-0.74	-0.36	-7.46	2002
(17) Hudspeth 4807516	151.08	147.32	-3.76	-1.02	-47.16	1964

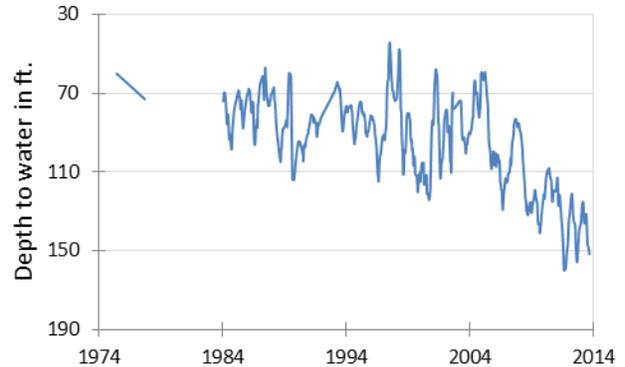
AUGUST GROUNDWATER LEVELS IN OBSERVATION WELLS



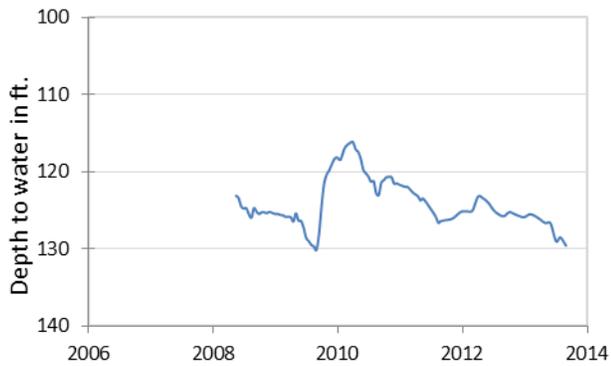
**(5) State Well ID 40-35-404
Gatesville, Coryell County
Hosston Formation-Trinity Aquifer**



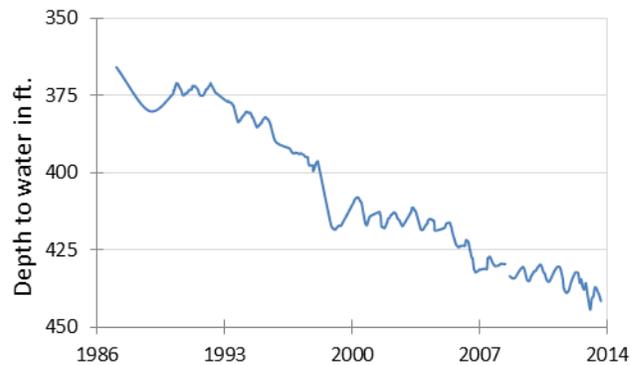
**(6) State Well ID 68-02-609
Waring, Kendall County
Cow Creek Formation-Trinity Aquifer**



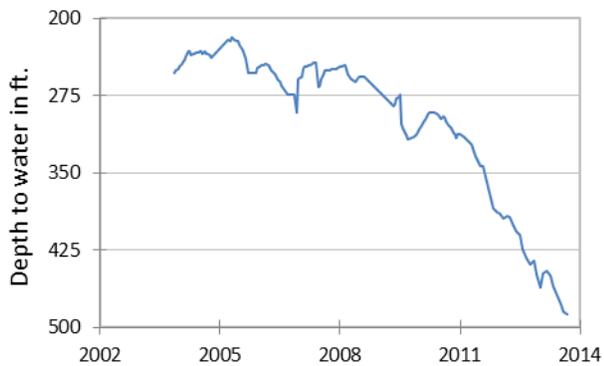
**(7) State Well ID 58-04-816
Near Salado, Bell County
Edwards (BFZ) Aquifer**



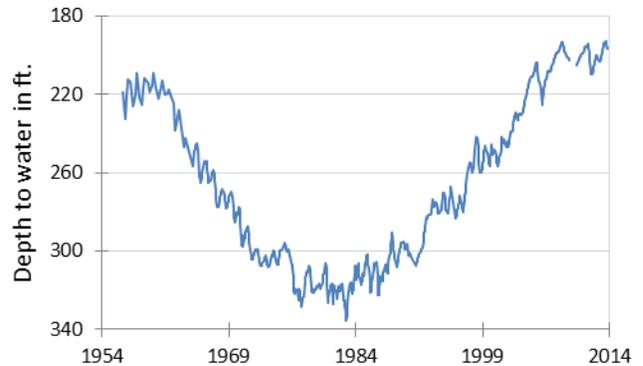
**(9) State Well ID 34-30-907
Red Springs, Smith County
Carrizo-Wilcox Aquifer**



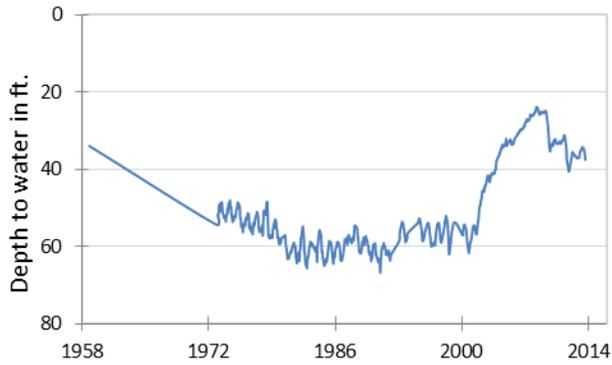
**(10) State Well ID 77-38-103
Near Cotulla, La Salle County
Carrizo-Wilcox Aquifer**



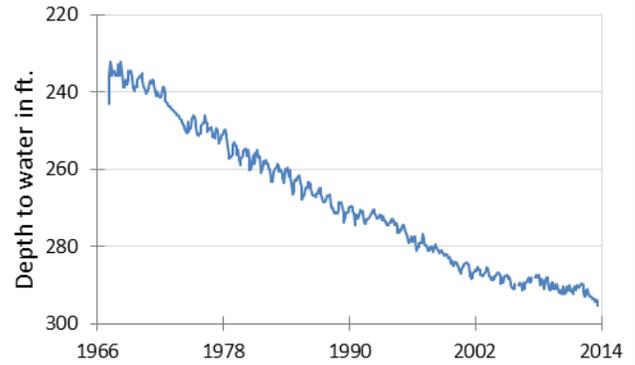
**(11) State Well ID 65-14-409
Alief, Harris County
Evangeline Formation-Gulf Coast Aquifer**



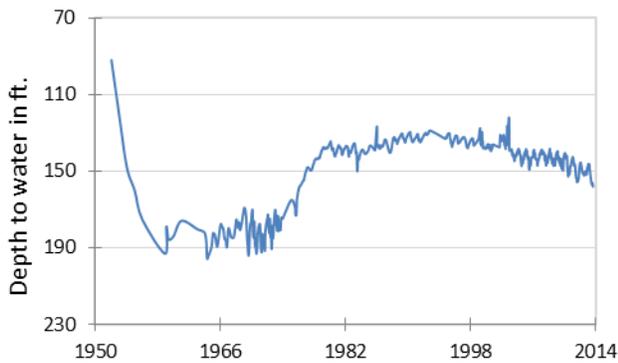
(12) State Well ID 80-17-502
Near Bloomington, Victoria County
Lissie Formation-Gulf Coast Aquifer



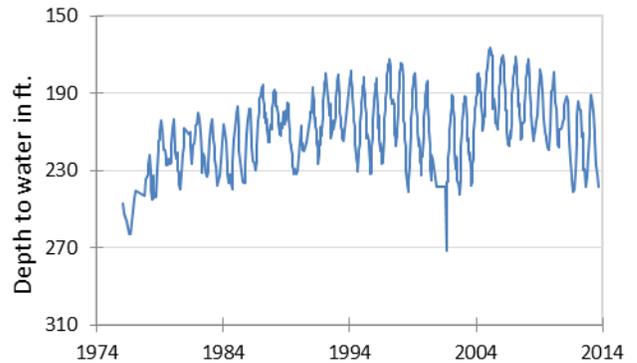
(13) State Well ID 49-13-301
El Paso, El Paso County
Hueco-Mesilla Bolson Aquifer



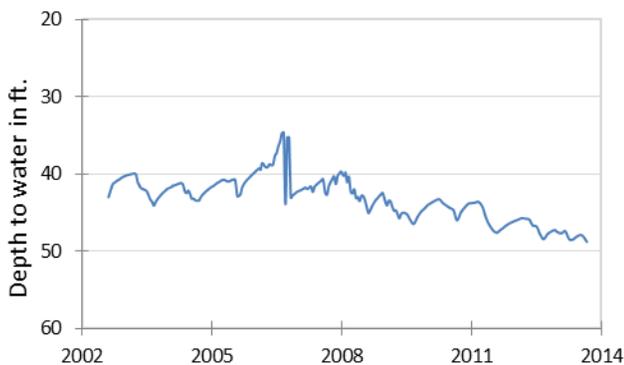
(14) State Well ID 46-44-501
Near Pecos, Reeves County
Pecos Valley Aquifer



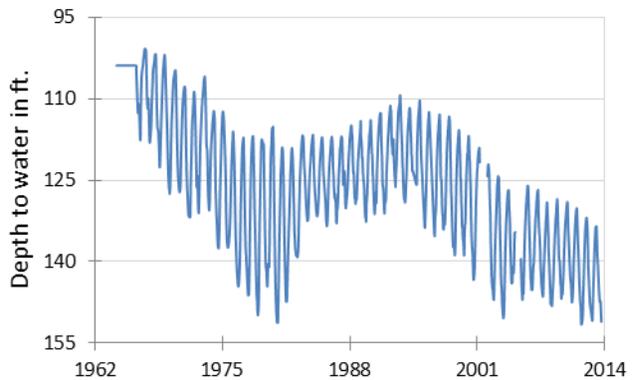
(15) State Well ID 52-16-802
Fort Stockton, Pecos County
Edwards-Trinity (Plateau) Aquifer



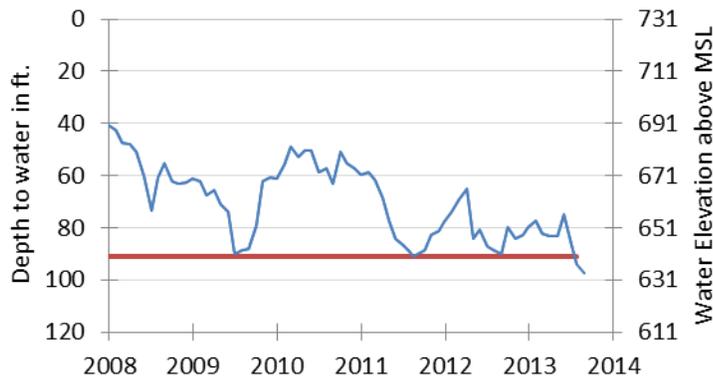
(16) State Well ID 21-35-748
Near O'Brien, Haskell County
Seymour Aquifer



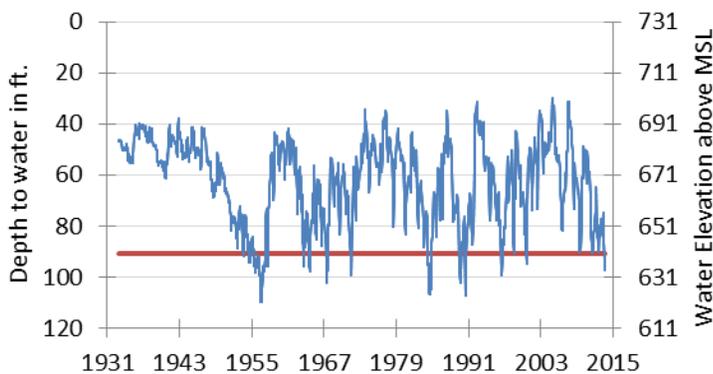
(17) State Well ID 48-07-516
Dell City, Hudspeth County
Bone Spring - Victorio Peak Aquifer



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

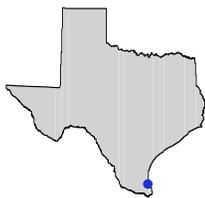


The late August water level measurement in this Edwards (BFZ) Aquifer well, elevation 731 feet above mean sea level, was 97.20 feet below land surface, or 633.80 feet above mean sea level. This was 3.20 feet below last month's measurement, 7.00 feet below last year's measurement, and 50.56 feet below the initial measurement recorded in 1932.



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

HYDROGRAPH OF THE MONTH

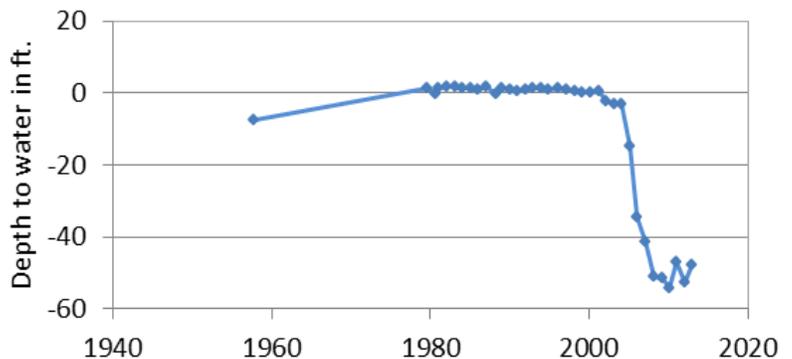


Each month this space features a new hydrograph (marked with the • symbol on the map) depicting different aquifers and different conditions in Texas.

Gulf Coast Aquifer

The Gulf Coast Aquifer in the Lower Rio Grande Valley of South Texas is an important groundwater resource to municipal, agricultural, and domestic users. This major aquifer comprises several subsidiary aquifers—the Jasper, Evangeline (and time-equivalent Goliad), and Chicot—that consist of discontinuous sand, silt, clay, and gravel beds. These sediments were originally deposited in deltaic and fluvial environments proximal to inland areas near sediment source areas and in more marine settings in offshore areas. Basin subsidence resulted in progressive thickening of formations toward the Gulf, with growth faults contributing to additional thickness during sedimentation. From records in the TWDB groundwater database, the median depth of Gulf Coast Aquifer wells is 950 feet in Willacy County. Water levels in the region are typically less than 50 feet below land surface. Although groundwater levels in neighboring Hidalgo and Cameron counties have remained relatively flat or have risen slightly throughout their periods of record, water levels in some Willacy County wells have declined since the mid-2000s by 20 to nearly 40 feet.

**Well #88-34-101
Willacy County TX**



Drilled in 1950, this unused oil and gas production well is at an elevation of 40 feet above sea level. It was completed at a depth of 870 feet in the Goliad Sands (Gulf Coast Aquifer). This was a flowing well, periodically, in the fifties up until 2000, at which time a nearby well began pumping water for a desalination plant. Total dissolved solids from the most recent analysis in 1984 are 1,805 milligrams per liter, and sulfate and chloride concentrations are also above their secondary drinking water standards.

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