RESERVOIR STORAGE

November 2013

At the end of the month, total storage in 115 of the state's major water supply reservoirs was at 19.73 million acre-feet*, or 63% of their total conservation storage capacity. This is 278 thousand acre-feet more than a month ago but 784 thousand acre-feet less than the storage at this time last year.

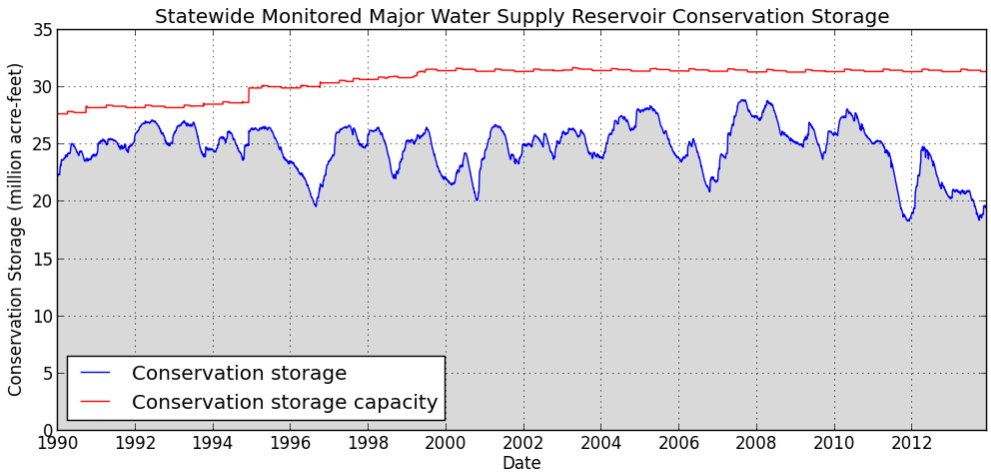
Fourteen reservoirs, most in North Central and East regions, held 100% of conservation storage capacity. Thirteen (13) reservoirs were at or below 10% full: Meredith, White River, Electra and Twin Buttes were effectively empty, North Fork Buffalo Creek and J. B. Thomas were at 1%, O. C. Fisher was at 3%, Medina and E.V. Spence were at 4%, Palo Duro and Mackenzie were at 5%, Abilene was at 6%, and Champion Creek was at 7% full.

Total combined storage was greater than 70% in the Upper Coast (94%) and East (87%) regions. The regions with the lowest percentage storage were the High Plains (1%) and Low Rolling Plains regions (23%). Storage declined in 4 regions and increased in 5 regions over the past month.

Elephant Butte reservoir held 235,173 acre-feet, or 12% of storage capacity. This is 43,252 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 Storage end of Nov 2013 (acre-feet)	(%)	Change since end of Oct 2013 (acre-feet)	(%)	Change since end of Nov 2012 (acre-feet)	(%)
HIGH PLAINS							
Palo Duro Reservoir	61,066	2,989	5	-245	0	1,232	2
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	2,494	5	-41	0	-613	-1
White River Lake	29,880	0	0	0	0	-1,624	-5
TOTAL	637,396	5,483	1	-286	0	-1,005	0
LOW ROLLING PLAINS							
Greenbelt Lake	59,968	8,497	14	-54	0	803	1
*Electra, Lake	5,626	0	0	0	0	0	0
N. Fork Buffalo Crk Reservoir	15,400	106	1	-26	0	-775	-5
Kemp, Lake	245,307	59,913	24	-4,308	-2	-11,133	-5
Millers Creek Reservoir	26,768	4,531	17	-260	-1	-2,982	-11
Alan Henry Reservoir	94,808	62,453	66	-886	-1	-8,105	-9
Stamford, Lake	51,570	8,433	16	-440	-1	-6,018	-12
J B Thomas, Lake	199,931	2,731	1	-122	0	1,503	1
Fort Phantom Hill, Lake	70,030	31,681	45	-716	-1	-3,846	-5
Sweetwater, Lake	12,267	2,600	21	-60	0	-1,167	-10
Colorado City, Lake	30,758	8,275	27	-97	0	-3,007	-10
Champion Creek Reservoir	41,580	3,109	7	-26	0	-548	-1
Abilene, Lake	7,900	490	6	-25	0	-1,140	-14
Coleman, Lake	38,075	15,585	41	-430	-1	-2,651	-7
Hords Creek Lake	8,443	2,664	32	-66	-1	-326	-4
TOTAL	902,805	211,068	23	-7,516	-1	-39,392	-4
NORTH CENTRAL							
Nocona, Lake (Farmers Crk)	21,444	9,130	43	-222	-1	-1,722	-8
Hubert H Moss Lake	24,058	19,999	83	-214	-1	-1,202	-5
Texoma, Lake (Texas)	1,258,113	1,041,560	83	-43,282	-3	-61,262	-5
Texoma, Lake (Texas & Oklahoma)	2,525,281	1,041,560	41	-43,282	-2	-61,262	-2
*Pat Mayse Lake	113,683	85,966	76	-488	0	-7,703	-7
Kickapoo, Lake	85,825	27,604	32	-1,707	-2	-8,481	-10
Arrowhead, Lake	235,997	66,613	28	-2,142	-1	-32,639	-14
Bonham, Lake	11,027	8,558	78	-19	0	961	9
Crook, Lake	9,195	8,448	92	428	5	1,696	18
Amon G Carter, Lake	19,266	9,445	49	-209	-1	-2,955	-15
Ray Roberts, Lake	788,167	590,883	75	-13,758	-2	-95,934	-12
Jim Chapman Lake (Cooper)	260,332	75,715	29	-474	0	-80,906	-31
Graham, Lake	45,288	24,146	53	-752	-2	-10,670	-24
*Lost Creek Reservoir	11,950	8,695	73	-167	-1	-1,705	-14
Bridgeport, Lake	366,236	165,087	45	-2,399	-1	-48,201	-13
Lewisville Lake	563,228	362,234	64	3,676	1	-46,947	-8
Lavon Lake	406,388	193,727	48	-4,714	-1	-46,849	-12
Hubbard Creek Reservoir	326,559	81,216	25	-3,581	-1	-19,837	-6
Possum Kingdom Lake	540,340	356,395	66	-8,204	-2	-44,995	-8
*Mineral Wells, Lake	6,760	4,042	60	-27	0	-1,046	-15
Weatherford, Lake	17,812	10,322	58	-34	0	-517	-3
Eagle Mountain Lake	179,880	123,663	69	864	0	-11,125	-6
Worth, Lake	33,495	24,412	73	1,807	5	544	2
Grapevine Lake	164,703	106,608	65	-3,009	-2	-14,739	-9
Ray Hubbard, Lake	452,040	316,101	70	-5,600	-1	-54,530	-12
New Terrell City Lake	8,583	6,058	71	197	2	-764	-9
Daniel, Lake	9,515	2,231	23	-126	-1	-794	-8

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	Conservation Storage Capacity (acre-feet)	Conservation Storage end of Nov 2013 (acre-feet)	(%)	Change since end of Oct 2013 (acre-feet)	(%)	Change since end of Nov 2012 (acre-feet)	(%)
(North Central Continue)							
Palo Pinto, Lake	26,827	8,353	31	-564	-2	-9,004	-34
Benbrook Lake	85,648	67,134	78	5,924	7	10,831	13
Arlington, Lake	40,188	29,813	74	-780	-2	3,821	10
Joe Pool Lake	175,358	163,154	93	216	0	6,445	4
*Cisco, Lake	25,895	14,853	57	-315	-1	4,739	18
Leon, Lake	26,476	22,161	84	-545	-2	4,065	15
Granbury, Lake	128,046	74,137	58	-2,495	-2	-17,803	-14
Pat Cleburne, Lake	26,008	15,798	61	-221	-1	-3,133	-12
Waxahachie, Lake	10,780	7,907	73	96	1	-1,265	-12
Bardwell Lake	46,122	33,715	73	567	1	-2,801	-6
Proctor Lake	55,457	27,000	49	-614	-1	-7,946	-14
Whitney, Lake	553,344	342,323	62	-1,943	0	-42,363	-8
Aquilla Lake	44,460	31,393	71	-414	-1	-1,031	-2
Navarro Mills Lake	49,827	49,827	100	4,517	9	11,582	23
*Halbert, Lake	6,033	5,483	91	-78	-1	1,266	21
Richland-Chambers Reservoir	1,087,839	777,219	71	48,706	4	-124,977	-11
*Brownwood, Lake	128,839	74,555	58	-1,849	-1	1,322	1
Waco, Lake	189,567	164,075	87	6,296	3	6,786	4
Limestone, Lake	208,014	208,014	100	10,869	5	55,815	27
Belton Lake	435,225	322,648	74	3,746	1	-43,689	-10
Stillhouse Hollow Lake	227,771	171,005	75	-1,793	-1	-26,674	-12
Georgetown, Lake	36,823	19,092	52	628	2	-1,293	-4
Granger Lake	50,779	50,779	100	0	0	4,441	9
Tawakoni, Lake	871,685	571,104	66	-4,028	0	-147,011	-17
Mountain Creek, Lake	22,850	22,850	100	0	0	1,197	5
Squaw Creek, Lake	151,250	151,250	100	0	0	0	0
TOTAL	10,670,995	7,154,500	67	-18,230	0	-909,002	-9
EAST							
Wright Patman Lake	122,593	122,593	100	-12,476	-10	0	0
*Sulphur Springs, Lake	17,747	17,583	99	2,391	13	3,733	21
Cypress Springs, Lake	66,756	61,053	91	1,145	2	774	1
Bob Sandlin, Lake	190,822	139,187	73	1,732	1	-5,086	-3
Caddo, Lake	29,898	29,898	100	0	0	14,981	50
Martin, Lake	75,116	75,116	100	11,719	16	22,575	30
Monticello, Lake	34,740	34,740	100	0	0	730	2
Fork Reservoir, Lake	605,061	464,591	77	908	0	-30,198	-5
O the Pines, Lake	241,363	210,726	87	16,380	7	42,469	18
Cedar Creek Reservoir in Trinity	644,686	500,251	78	35,907	6	-30,194	-5
Athens, Lake	29,435	26,058	89	1,797	6	2,549	9
Palestine, Lake	373,199	373,199	100	7,223	2	40,252	11
Tyler, Lake	73,161	59,626	81	5,745	8	6,753	9
Murvaul, Lake	38,285	38,285	100	3,572	9	3,572	9
Jacksonville, Lake	25,670	25,670	100	736	3	1,829	7
Nacogdoches, Lake	39,522	35,678	90	2,231	6	2,692	7
Houston County Lake	17,113	16,881	99	1,864	11	38	0
Sam Rayburn Reservoir	2,857,077	2,273,096	80	108,258	4	-73,765	-3
Toledo Bend Reservoir (Texas)	2,245,752	1,950,942	87	44,462	2	78,322	3
Toledo Bend Reservoir (TX & LA)	4,472,900	1,950,942	44	44,462	1	78,322	2
*Livingston, Lake	1,785,348	1,785,348	100	18,706	1	57,044	3
B A Steinhagen Lake	66,961	56,433	84	-10,528	-16	2,228	3
Conroe, Lake	416,177	386,207	93	18,518	4	32,489	8
TOTAL	9,996,482	8,683,161	87	260,290	3	173,787	2

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

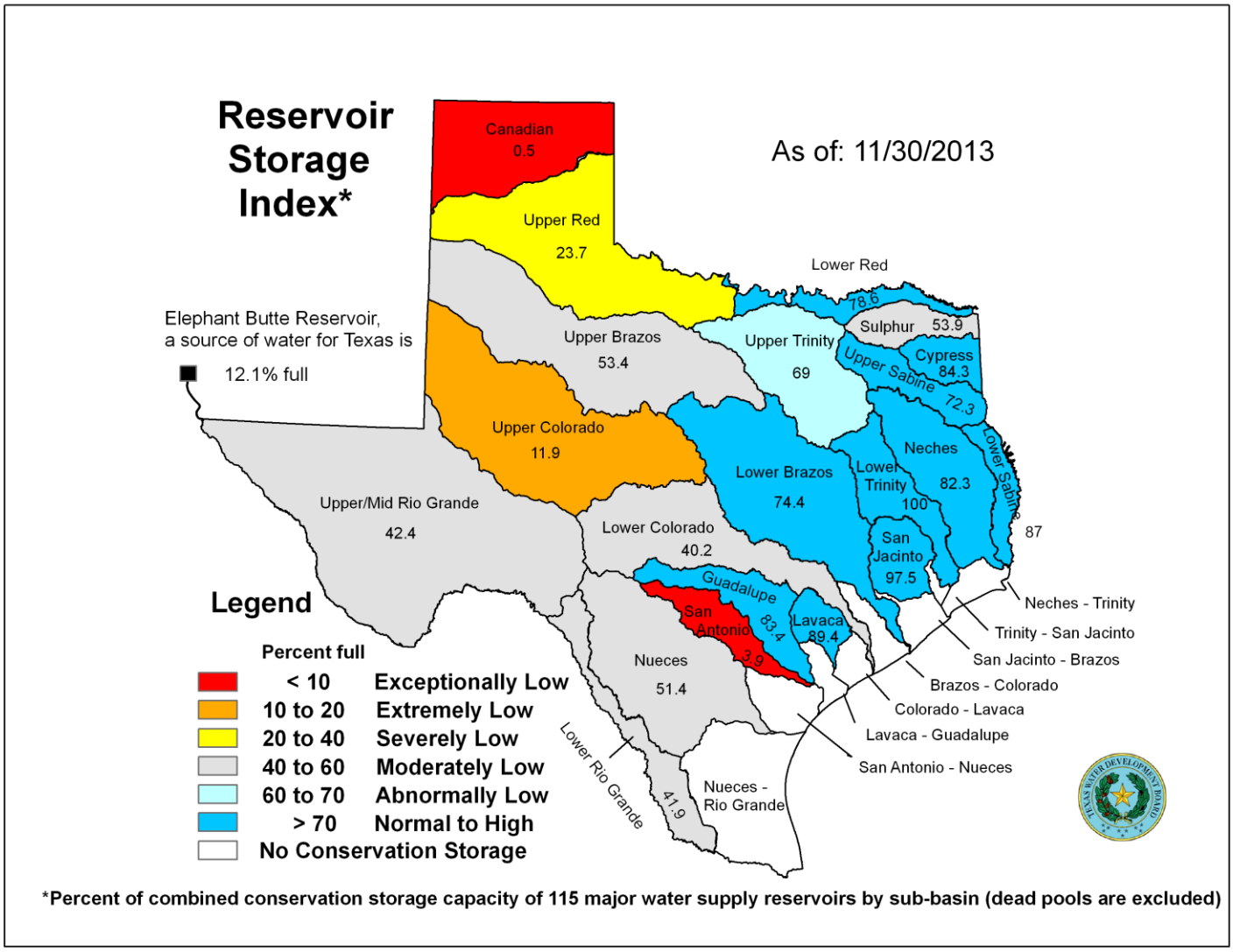
Name of Lake or Reservoir	Conservation Storage Capacity (acre-feet)	Conservation Storage end of Nov 2013 (acre-feet)	(%)	Change since end of Oct 2013 (acre-feet)	(%)	Change since end of Nov 2012 (acre-feet)	(%)
TRANS-PECOS							
Red Bluff Reservoir	151,110	64,045	42	708	0	41,506	27
TOTAL	151,110	64,045	42	708	0	41,506	27
EDWARDS PLATEAU							
Oak Creek Reservoir	39,210	8,438	22	-266	-1	-3,485	-9
E V Spence Reservoir	517,272	21,993	4	-3,377	-1	-7,140	-1
O C Fisher Lake	119,445	3,538	3	-956	-1	1,555	1
*O H Ivie Reservoir	554,340	79,345	14	-4,005	-1	-51,907	-9
Twin Buttes Reservoir	182,454	0	0	-2,028	-1	-6,200	-3
Brady Creek Reservoir	28,808	9,351	32	-97	0	1,261	4
Buchanan, Lake	860,607	314,042	36	2,950	0	-56,334	-7
Inks, Lake	13,962	12,952	93	75	1	-83	-1
Lyndon B Johnson, Lake	115,056	111,370	97	918	1	368	0
*Amistad Reservoir (Texas)	1,840,849	895,136	49	5,007	0	-8,414	0
*Amistad Reservoir (TX & Mexico)	3,275,532	895,136	27	5,007	0	-8,414	0
TOTAL	4,272,003	1,456,165	34	79,594	2	-51,034	-1
SOUTH CENTRAL							
Travis, Lake	1,113,348	395,073	35	25,207	2	-43,506	-4
*Austin, Lake	23,972	23,657	99	-16	0	931	4
Somerville Lake	147,104	116,592	79	26,184	18	-5,952	-4
Canyon Lake	378,781	320,967	85	5,054	1	7,091	2
Medina Lake	254,823	9,877	4	-520	0	-17,836	-7
*Coleto Creek Reservoir	31,040	20,973	68	-745	-2	-1,149	-4
TOTAL	1,949,068	887,139	46	55,164	3	-60,421	-3
UPPER COAST							
Houston, Lake	128,054	128,054	100	0	0	4,978	4
Texana, Lake	159,566	142,647	89	11,738	7	2,346	1
TOTAL	287,620	270,701	94	11,738	4	7,324	3
SOUTHERN							
Choke Canyon Reservoir	695,262	243,402	35	-7,310	-1	-98,680	-14
Corpus Christi, Lake	256,961	246,076	96	-10,338	-4	205,816	80
*Falcon Reservoir (Texas)	1,551,007	528,505	34	10,263	1	43,526	3
*Falcon Reservoir (TX & Mexico)	2,646,817	528,505	20	10,263	0	43,526	2
TOTAL	2,503,230	1,017,983	41	-7,385	0	150,662	6
STATE TOTAL	31,376,335	19,733,829	63	278,316	1	-784,126	-2

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

Elephant Butte Reservoir	1,973,358	235,173	12	43,252	2	112,514	6

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.

NOVEMBER RESERVOIR CONDITIONS

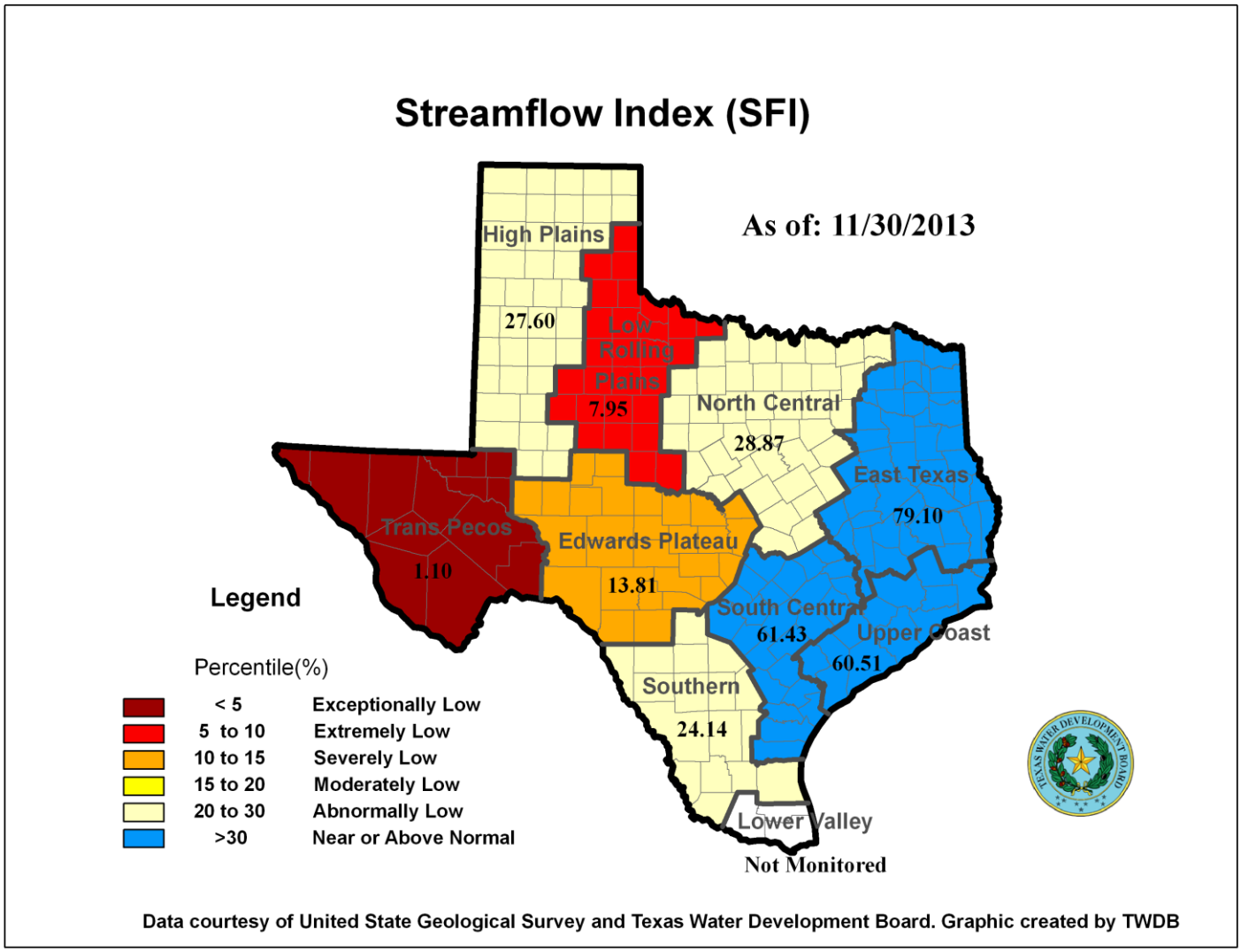


*Percent of combined conservation storage capacity of 115 major water supply reservoirs by sub-basin (dead pools are excluded)

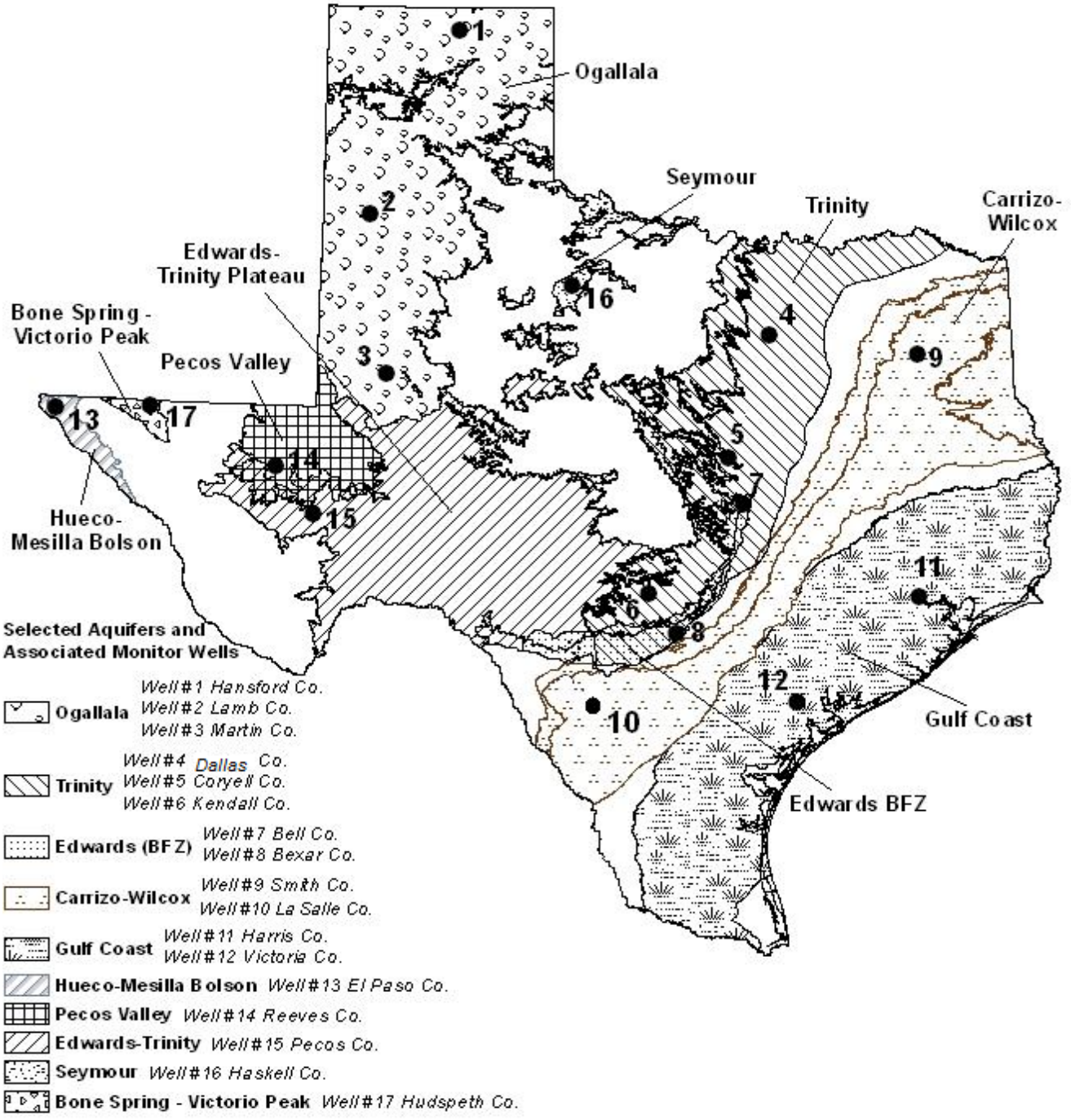
NOVEMBER STREAMFLOW CONDITIONS

Of 29 reporting index stations monitored this month, computed 30-day mean flows were exceptionally low (<5%) at 9 stations, extremely low (5-10%) at 1 station, severely low (10-15%) at 2 stations, moderately low (15-20%) at 1 station, abnormally low (20-30%) at 3 stations, and near normal (30% - 70%) at the remaining 13 stations. Compared to last month, flows have increased at 14 index stations and decreased at 10 stations.

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



NOVEMBER 2013 GROUNDWATER LEVELS IN OBSERVATION WELLS



November, 2013

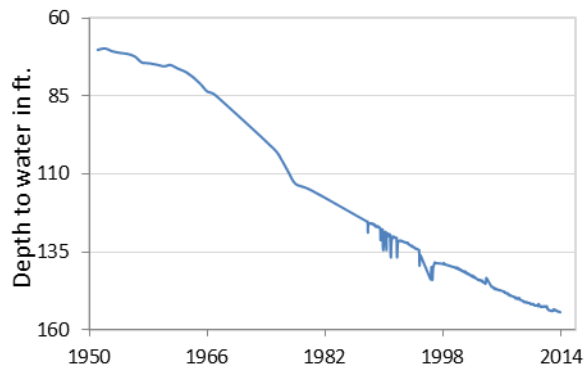
Water level measurements were available for all seventeen key monitoring wells in the state. Water levels rose in ten of the monitoring wells since the beginning of November, ranging from 0.34 feet in the El Paso County Hueco-Mesilla Bolson Aquifer well to 12.89 feet in the Pecos County Edwards Trinity Aquifer well. Water levels declined in six monitoring wells, ranging from 0.21 feet in the Hansford County Ogallala Aquifer well and Haskell County Seymour Aquifer well to 9.79 feet in the La Salle County Carrizo (-Wilcox) Aquifer well. The J-17 well in San Antonio recorded a water level of 89.8 feet below land surface or 641.2 feet above mean sea level. This water level is 1.2 feet above the Stage III critical management level in that segment of the Edwards Aquifer. Stage II restrictions were declared by the EAA when the ten-day average fell below the 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.**

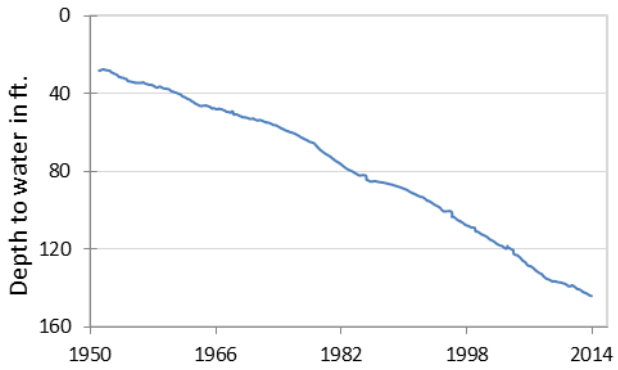
Monitoring Well	November	October	month change	year change	historical change	first measured
(1) Hansford 0354301	154.41	154.2	-0.21	-0.41	-84.29	1951
(2) Lamb 1053602	144.05	144.05	0.0	-1.7	-115.9	1951
(3) Martin 2739903	142.54	143.68	1.14	-2.75	-37.65	1964
(4) Dallas 3319101	490.15	489.45	-0.7	1.11	-268.15	1954
(5) Coryell 4035404	502.93	504.68	1.75	1.27	-210.93	1955
(6) Kendall 6802609	132.39	136.31	3.92	4.81	-72.39	1975
(7) Bell 5804816	124.3	125.74	1.44	1.49	-1.17	2008
(8) Bexar 6837203	89.8	88.6	-1.2	-7.01	-43.16	1932
(9) Smith 3430907	440.65	441.9	1.25	-1.35	-74.65	1987
(10) La Salle 7738103	499.34	489.55	-9.79	-50.84	-246.27	2003
(11) Harris 6514409	197.43	198.38	0.95	4.53	-61.93	1956
(12) Victoria 8017502	38.92	39.27	0.35	-1.98	-4.92	1958
(13) El Paso 4913301	294.38	294.72	0.34	NA	-62.48	1967
(14) Reeves 4644501	158.60	154.63	-3.97	-9.97	-66.51	1952
(15) Pecos 5216802	215.42	228.31	12.89	-3.93	31.46	1976
(16) Haskell 2135748	48.68	48.47	-0.21	-1.42	-7.35	2002
(17) Hudspeth 4807516	139.05	143.66	5.4	1.68	-39.74	1964

NOVEMBER GROUNDWATER LEVELS IN OBSERVATION WELLS

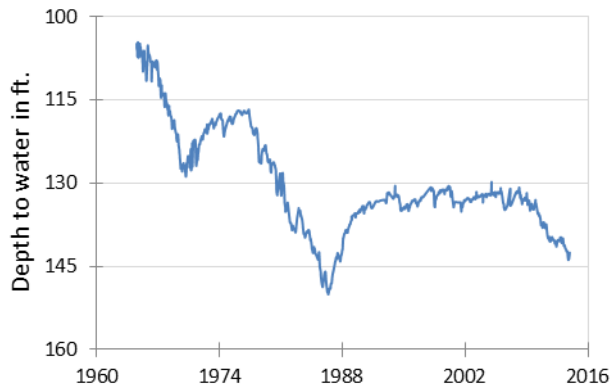
(1) State Well ID 03-54-301
Near Spearman, Hansford County
Ogallala Aquifer



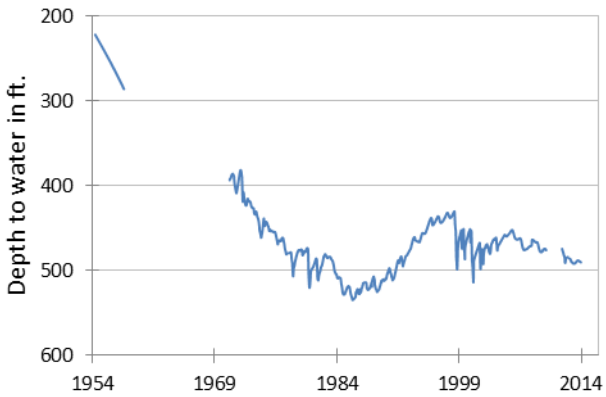
(2) State Well ID 10-53-602
Near Earth, Lamb County
Ogallala Aquifer



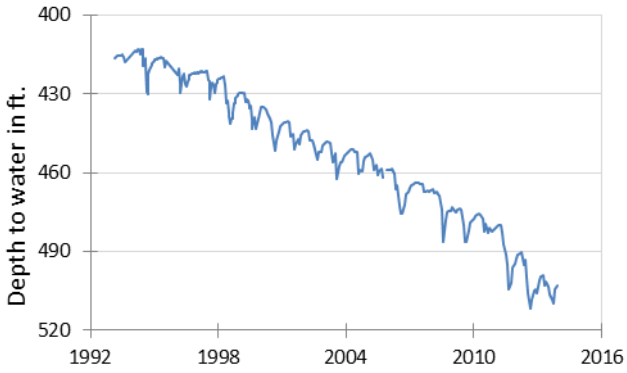
(3) State Well ID 27-39-903
Northwest Martin County
Ogallala Aquifer



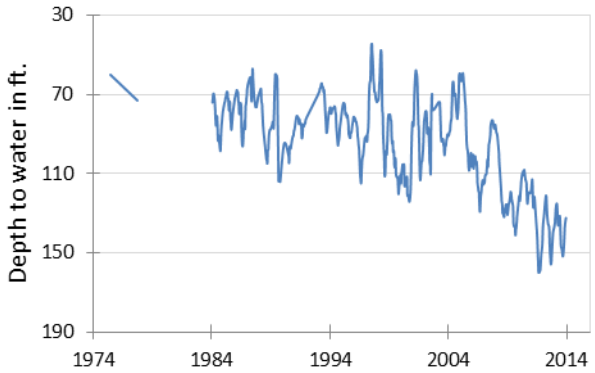
(4) State Well ID 33-19-101
Southeast Dallas, Dallas County
Twin Mountains Formation-Trinity Aquifer



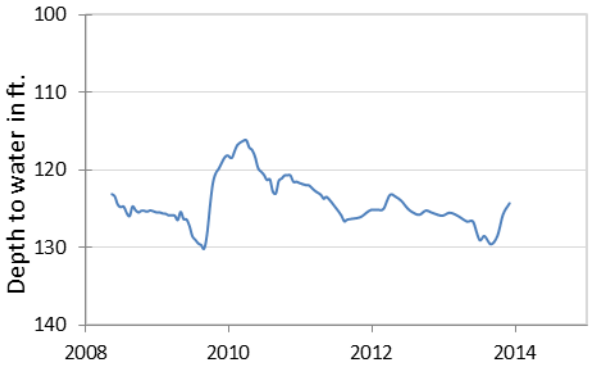
(5) State Well ID 40-35-404
Gatesville, Coryell County
Hosston Formation-Trinity Aquifer



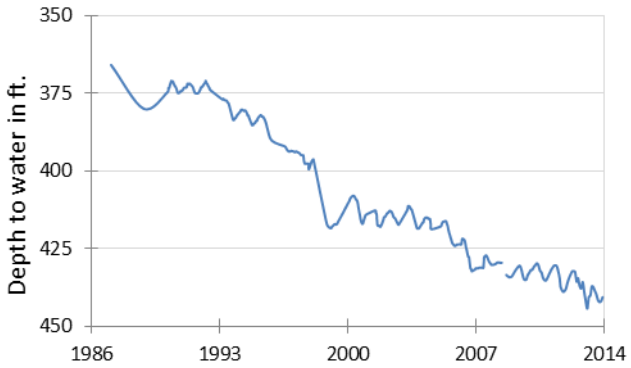
(6) State Well ID 68-02-609
Waring, Kendall County
Cow Creek Formation-Trinity Aquifer



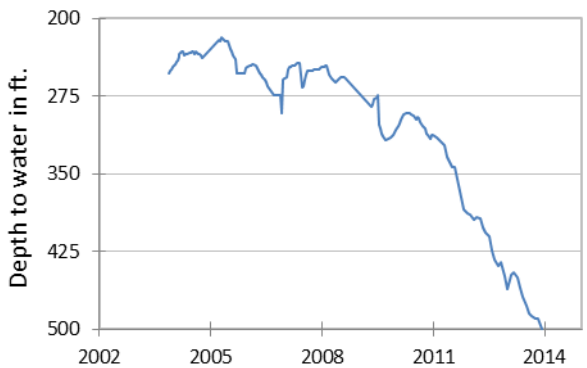
(7) State Well ID 58-04-816
Near Salado, Bell County
Edwards (BFZ) Aquifer



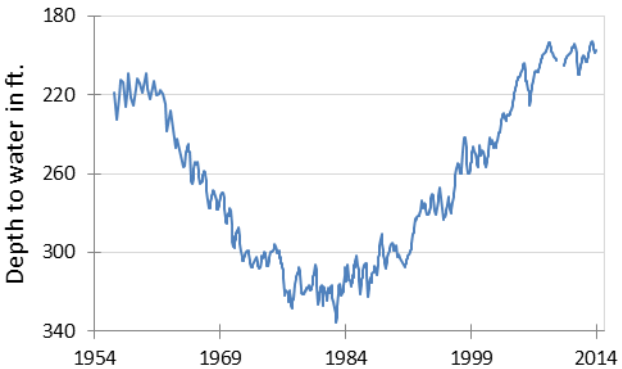
(9) State Well ID 34-30-907
Red Springs, Smith County
Carrizo-Wilcox Aquifer



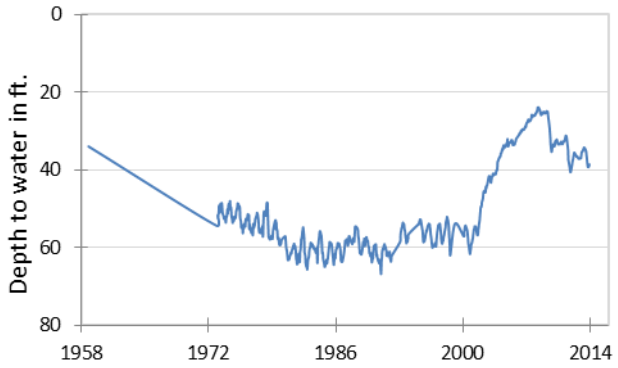
(10) State Well ID 77-38-103
Near Cotulla, La Salle County
Carrizo-Wilcox Aquifer



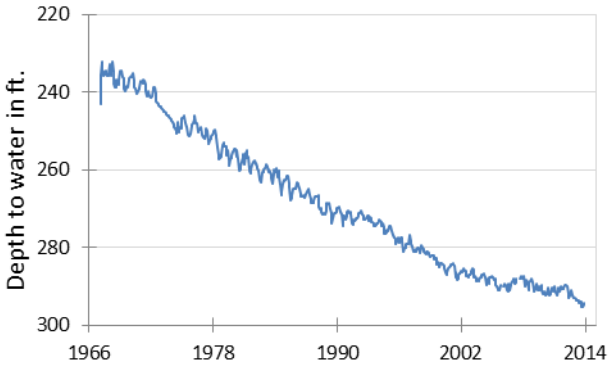
(11) State Well ID 65-14-409
Alief, Harris County
Evangeline Formation-Gulf Coast Aquifer



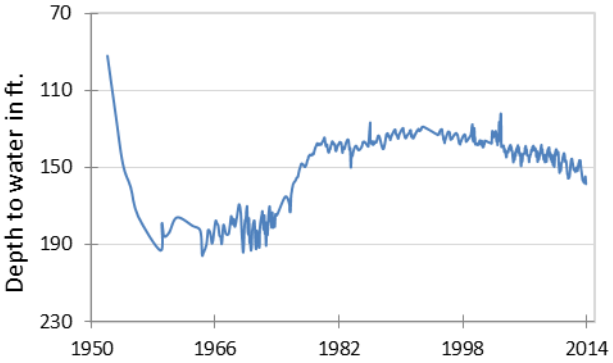
(12) State Well ID 80-17-502
Near Bloomington, Victoria County
Lissie Formation-Gulf Coast Aquifer



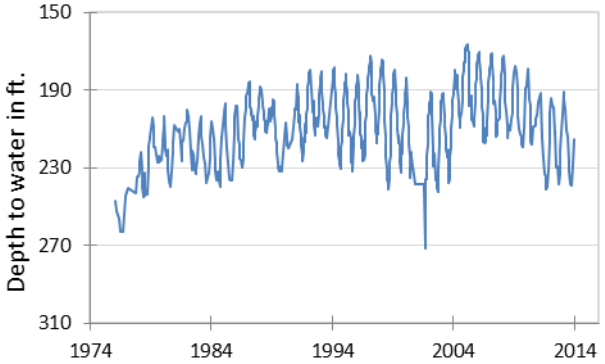
(13) State Well ID 49-13-301
El Paso, El Paso County
Hueco-Mesilla Bolson Aquifer



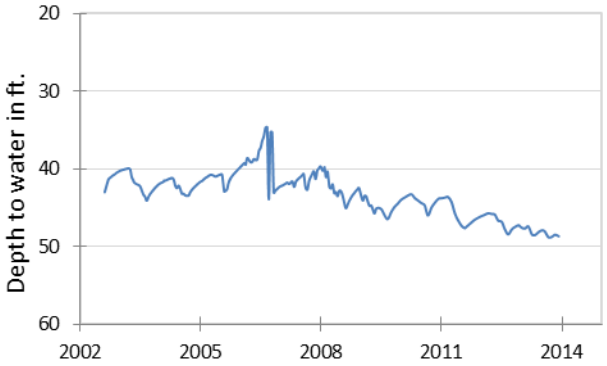
(14) State Well ID 46-44-501
Near Pecos, Reeves County
Pecos Valley Aquifer



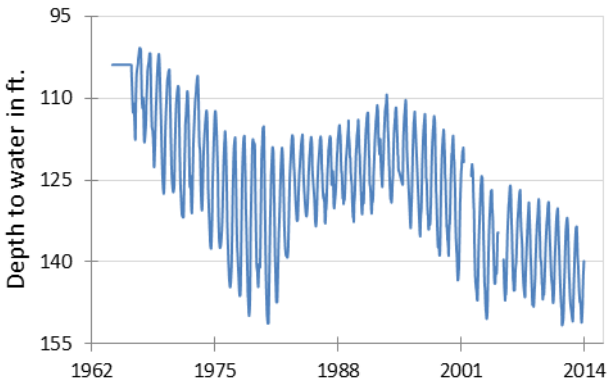
(15) State Well ID 52-16-802
Fort Stockton, Pecos County
Edwards-Trinity (Plateau) Aquifer



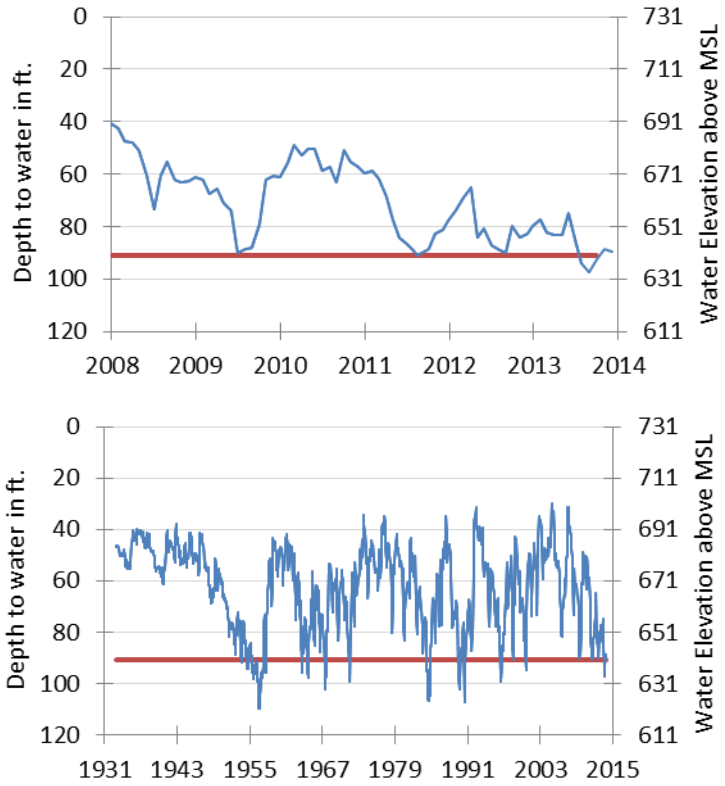
(16) State Well ID 21-35-748
Near O'Brien, Haskell County
Seymour Aquifer



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



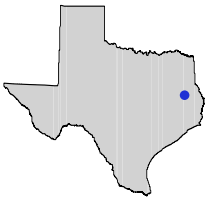
(8) State Well ID 68-37-203 (J-17)
In San Antonio, Bexar County
Edwards (BFZ) Aquifer



The late November water-level measurement in this Edwards (BFZ) Aquifer well, elevation 731 feet above mean sea level, was 89.8 feet below land surface, or 641.2 feet above mean sea level. This was 1.2 feet below last month's measurement, 7.01 feet below last year's measurement, and 43.16 feet below the initial measurement recorded in 1932.

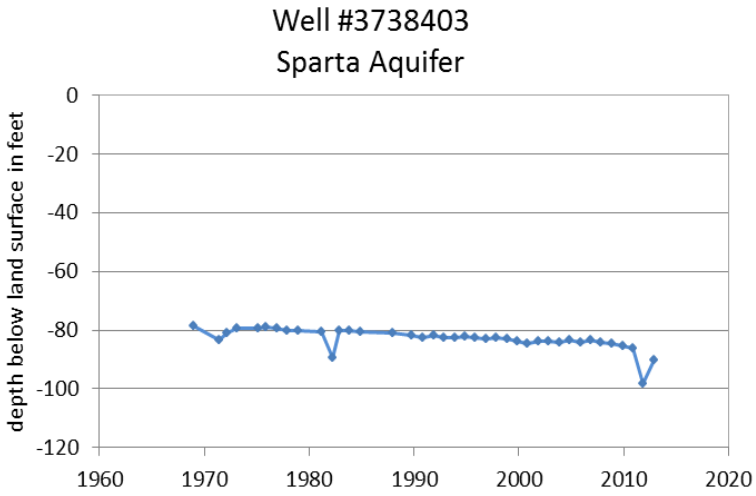
***** Water levels below the red line indicate Edwards Aquifer Authority Stage III drought restrictions. *****

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.

Sparta Aquifer



This unused well, in southeast Nacogdoches County, elevation 271 feet above mean sea level, was completed in the Sparta Aquifer at a total depth of 300 feet below land surface. The TWDB has measured the water level in this well for almost 45 years, during which time it has declined nearly 12 feet, as determined from the initial reading at 78.5 feet to the most recent reading at 90.2 feet below land surface.

This well is the downdip or confined portion of the aquifer where the water level is above the top of the aquifer, confined by overlying, more impermeable formations. While the overall decline in this well for this period of time is not significant in either the confined or unconfined portion of the aquifer, in general a water-level decline in the unconfined portion of the aquifer—where the water table defines the top of the aquifer—is of greater concern than the same rate of decline in the confined portion.

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