Texas Water Development Board

WATER Conditions

RESERVOIR STORAGE

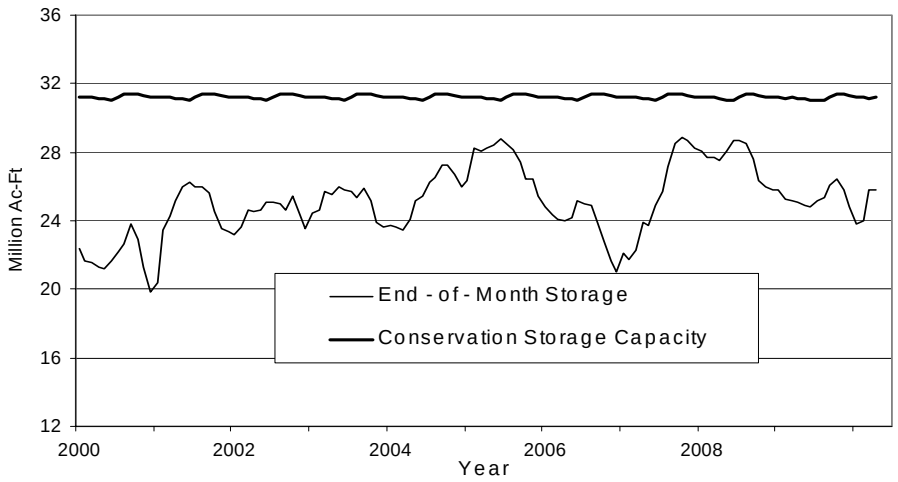
November 2009

Total storage in the state's major reservoirs remains virtually unchanged compared to that in October. Near the end of the month, the 109 reservoirs monitored for this report held 25.79 million acre-feet* in conservation storage, or 83 percent of the conservation storage capacity of the state's major water supply reservoirs.

Storage was at 100% in 45 reservoirs, 2 less than last month and mainly in the Upper Coast, East and North Central Regions. There were still six lakes at or below 10% full, the same as last month: O C Fisher Lake was still effectively empty, Palo Duro Reservoir (1%) was nearly empty, Lake Meredith was at 4%, Lake J. B. Thomas and E.V. Spence Reservoir were at 5%, and Lake Electra 8% full.

Three regions had combined storage above 90%: Upper Coast 100%, East 98%, and North Central 95%. The High Plains (6%) and Trans-Pecos regions (22%) remained very low. Storage decreased in 6 regions and increased in 3 over the month. Compared to last November, storage increased in 3 regions but decreased in 6 regions.

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS



Figures are based on end of the month data at 109 major reservoirs that represent 95 percent of the total conservation storage capacity of the 175 major water supply reservoirs in Texas. By definition, a major reservoir has a conservation storage capacity of 5,000 acre-feet or greater.

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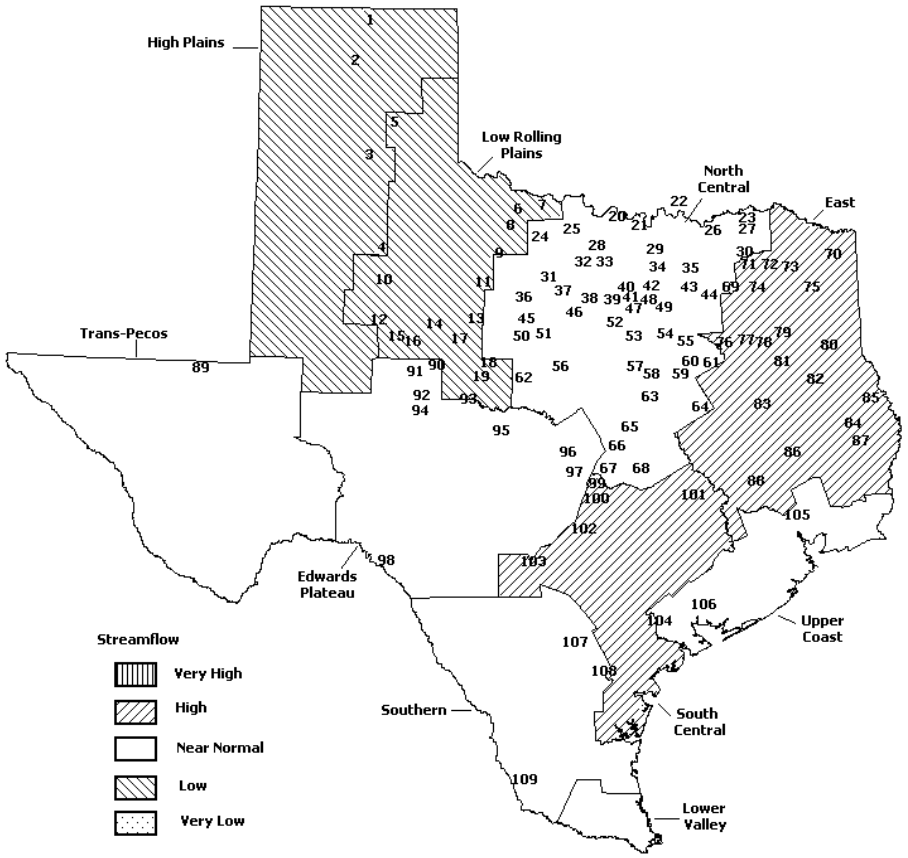
STREAMFLOW

Of 29 reporting index stations in November, computed 30-day mean flows were very high (<5%) at 1 station, high (5% - 30%) at 9 stations, low (70% - 95%) at 7 stations, and near normal (30% - 70%) at the remaining 12 stations. Compared to October, flows have increased at 9 index stations and decreased at 18 stations.

On a regional basis, flows in November were high in the East and South Central regions, low in Low Rolling Plains and High Plains regions, but normal everywhere else. Streamflow in the Lower Valley Region is not monitored.

NOVEMBER STREAMFLOW CONDITIONS



Reservoirs Shown on Map

1. Palo Duro Reservoir
2. Meredith, Lake
3. MacKenzie Reservoir
4. White River Lake
5. Greenbelt Lake
6. Electra, Lake
7. N. Fork Buffalo Creek Reservoir
8. Kemp, Lake
9. Miller's Creek Reservoir
10. Alan Henry Reservoir
11. Stamford, Lake
12. Lake J. B. Thomas
13. Fort Phantom Hill, Lake
14. Sweetwater, Lake
15. Colorado City, Lake
16. Champion Creek Reservoir
17. Abilene, Lake
18. Coleman, Lake
19. Hords Creek Lake
20. Farmers Creek Reservoir
21. Hubert H Moss Lake
22. Texoma, Lake
23. Pat Mayse Lake
24. Lake Kickapoo
25. Lake Arrowhead
26. Bonham, Lake
27. Crook, Lake
28. Amon G Carter, Lake
29. Ray Roberts, Lake
0. Jim Chapman Lake
31. Graham, Lake
32. Lost Creek Reservoir
33. Bridgeport Reservoir
34. Lewisville Lake
35. Lavon Lake
36. Hubbard Creek Reservoir
37. Possum Kingdom Lake
38. Mineral Wells, Lake
39. Weatherford, Lake
40. Eagle Mountain Lake
41. Worth, Lake
42. Grapevine Lake
43. Lake Ray Hubbard
44. New Terrell City Lake
45. Daniel, Lake
46. Palo Pinto, Lake
47. Benbrook Lake
48. Arlington, Lake
49. Joe Pool Lake
50. Cisco, Lake
51. Leon, Lake
52. Lake Granbury
53. Pat Cleburne, Lake
54. Waxahacie, Lake
55. Bardwell Lake
56. Proctor Lake
57. Whitney Lake
58. Aquilla Lake
59. Navarro Mills Lake
60. Halbert, Lake
61. Richland-Chambers Reservoir
62. Lake Brownwood
63. Waco Lake
64. Limestone, Lake
65. Belton Lake
66. Stillhouse Hollow Lake
67. Georgetown, Lake
68. Granger Lake
69. Tawakoni, Lake
70. Wright Patman Lake
71. Sulphur Springs, Lake
72. Cypress Springs, Lake
73. Bob Sandlin, Lake
74. Fork Reservoir, Lake
75. O' the Pines, Lake
76. Cedar Creek Reservoir Trinity
77. Athens, Lake
78. Palestine, Lake
79. Tyler, Lake
80. Murvaul, Lake
81. Jacksonville, Lake
82. Nacogdoches, Lake
83. Houston County Lake
84. Sam Rayburn Reservoir
85. Toledo Bend Reservoir
86. Livingston, Lake
87. B. A. Steinhagen Lake
88. Conroe, Lake
89. Red Bluff Reservoir
90. Oak Creek Reservoir
91. E. V. Spence Reservoir
92. O. C. Fisher Lake
93. O. H. Ivie Reservoir
94. Twin Buttes Reservoir
95. Vrady Creek Reservoir
96. Buchanan, Lake
97. Lyndon B Johnson, Lake
98. Amistad Reservoir, Intl.
99. Travis, Lake
100. Austin, Lake
101. Somerville Lake
102. Canyon Lake
103. Medina Lake
104. Coleto Creek Reservoir
105. Lake Houston
106. Texana, Lake
107. Choke Canyon Reservoir
108. Lake Corpus Christi
109. Falcon Reservoir, Intl.

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage Late Nov. 2009 (acre-feet)	(%)	Change since Late October 2009 (acre-feet)	(%)	Change since Late November 2008 (acre-feet)	(%)
HIGH PLAINS								
Palo Duro Reservoir	1	60,897	391	1	-85	0	-1,266	-2
Meredith, Lake (Texas)	2	500,000	30,852	6	-1,796	0	-34,196	-7
Meredith, Lake (Texas & Oklahoma)	(2)	779,556	30,852	4	-1,796	0	-34,196	-4
MacKenzie Reservoir	3	46,429	5,827	13	-120	0	-171	0
White River Lake	4	29,880	3,097	10	-249	-1	-4,004	-13
TOTAL		637,206	40,167	6	-2,250	0	-39,637	-6
LOW ROLLING PLAINS								
Greenbelt Lake	5	59,500	15,248	26	-180	0	-3,347	-6
*Electra, Lake	6	5,626	473	8	-34	-1	-558	-10
N. Fork Buffalo Crk Reservoir	7	15,400	4,194	27	-186	-1	0	0
Kemp, Lake	8	245,308	159,726	65	-284	0	-12,593	-5
Millers Creek Reservoir	9	27,888	12,450	45	-424	-2	-4,694	-17
Alan Henry Reservoir	10	94,808	87,054	92	-926	-1	-7,324	-8
Stamford, Lake	11	51,570	35,318	68	-1,196	-2	-2,313	-4
J B Thomas, Lake	12	199,931	9,541	5	-545	0	-8,525	-4
Fort Phantom Hill, Lake	13	70,030	46,837	67	-2,811	-4	-18,245	-26
Sweetwater, Lake	14	10,006	5,862	59	-134	-1	-1,908	-19
Colorado City, Lake	15	31,793	17,721	56	-342	-1	-4,707	-15
Champion Creek Reservoir	16	41,618	5,497	13	-1,295	-3	-3,585	-9
Abilene, Lake	17	6,099	1,836	30	-164	-3	-2,304	-38
Coleman, Lake	18	38,076	21,652	57	-496	-1	-7,301	-19
Hords Creek Lake	19	5,684	1,457	26	-103	-2	-1,618	-28
TOTAL		903,337	424,866	47	-9,120	-1	-79,022	-9
NORTH CENTRAL								
Nocona, Lake (Farmers Crk)	20	21,445	19,461	91	-247	-1	1,835	9
Hubert H Moss Lake	21	24,058	23,823	99	-235	-1	2,437	10
Texoma, Lake (Texas)	22	1,315,070	1,308,534	100	-6,536	0	64,052	5
Texoma, Lake (Texas & Oklahoma)	(22)	2,630,141	2,617,068	100	-13,073	0	128,104	5
*Pat Mayse Lake	23	118,100	118,100	100	0	0	10,196	9
Kickapoo, Lake	24	85,825	45,013	52	-1,122	-1	3,074	4
Arrowhead, Lake	25	235,997	152,047	64	-4,463	-2	-11,553	-5
Bonham, Lake	26	11,026	10,882	99	-144	-1	2,410	22
Crook, Lake	27	9,195	9,184	100	-11	0	403	4
Amon G Carter, Lake	28	19,903	18,553	93	-406	-2	1,808	9
Ray Roberts, Lake	29	798,758	798,758	100	0	0	58,021	7
Jim Chapman Lake (Cooper)	30	260,332	260,332	100	0	0	84,650	33
Graham, Lake	31	45,260	37,161	82	-760	-2	-4,710	-10
*Lost Creek Reservoir	32	11,950	11,911	100	63	1	1,280	11
Bridgeport, Lake	33	366,236	271,152	74	-1,823	0	-14,262	-4
Lewisville Lake	34	543,988	543,988	100	0	0	111,514	20
Lavon Lake	35	443,844	443,844	100	0	0	88,751	20
Hubbard Creek Reservoir	36	318,067	210,713	66	-3,470	-1	-55,468	-17
Possum Kingdom Lake	37	540,340	461,836	85	-7,504	-1	-42,322	-8
*Mineral Wells, Lake	38	7,065	6,712	95	-229	-3	1,392	20
Weatherford, Lake	39	18,645	15,563	83	-203	-1	2,691	14
Eagle Mountain Lake	40	182,500	175,772	96	-2,184	-1	25,305	14
Worth, Lake	41	24,500	22,243	91	-135	-1	4,577	19
Grapevine Lake	42	164,702	164,702	100	0	0	39,830	24
Ray Hubbard, Lake	43	452,040	452,040	100	0	0	20,983	5
New Terrell City Lake	44	8,583	8,583	100	0	0	952	11
Daniel, Lake	45	9,435	4,313	46	-140	-1	-2,762	-29
Palo Pinto, Lake	46	27,150	19,954	73	-797	-3	3,615	13
Benbrook Lake	47	85,648	85,648	100	0	0	26,911	31
Arlington, Lake	48	38,740	37,847	98	-893	-2	12,807	33

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage Late Nov. 2009 (acre-feet)	(%)	Change since Late October 2009 (acre-feet)	(%)	Change since Late November 2008 (acre-feet)	(%)
NORTH CENTRAL (Continue)								
Joe Pool Lake	49	142,861	142,861	100	0	0	16,545	12
*Cisco, Lake	50	26,000	16,696	64	-274	-1	-3,095	-12
Leon, Lake	51	26,421	17,926	68	-307	-1	-3,934	-15
Granbury, Lake	52	128,046	124,648	97	831	1	8,539	7
Pat Cleburne, Lake	53	25,730	25,730	100	0	0	5,492	21
Waxahachie, Lake	54	10,779	10,779	100	0	0	1,240	12
Bardwell Lake	55	46,122	46,122	100	0	0	9,231	20
Proctor Lake	56	55,457	29,052	52	1,570	3	-8,507	-15
Whitney, Lake	57	553,349	524,887	95	-866	0	141,782	26
Aquilla Lake	58	45,092	45,092	100	0	0	9,397	21
Navarro Mills Lake	59	55,817	55,817	100	0	0	12,242	22
*Halbert, Lake	60	6,033	5,396	89	-144	-2	1,715	28
Richland-Chambers Reservoir	61	1,103,816	1,103,816	100	0	0	153,893	14
*Brownwood, Lake	62	131,429	89,007	68	-1,081	-1	-17,116	-13
Waco, Lake	62	198,943	198,943	100	0	0	19,392	10
Limestone, Lake	64	208,015	208,015	100	610	0	25,118	12
Belton Lake	65	435,225	435,225	100	0	0	24,836	6
Stillhouse Hollow Lake	66	227,771	227,771	100	0	0	25,346	11
Georgetown, Lake	67	36,823	36,823	100	0	0	20,421	55
Granger Lake	68	52,525	52,525	100	0	0	12,501	24
Tawakoni, Lake	69	888,126	888,126	100	0	0	145,035	16
TOTAL		10,592,782	10,023,926	95	-30,900	0	1,038,490	10
EAST								
Wright Patman Lake	70	122,593	122,593	100	-12,656	-10	0	0
*Sulphur Springs, Lake	71	17,838	17,838	100	0	0	3,024	17
Cypress Springs, Lake	72	67,689	67,689	100	0	0	0	0
Bob Sandlin, Lake	73	200,579	200,579	100	0	0	3,710	2
Fork Reservoir, Lake	74	604,927	604,927	100	0	0	14,519	2
O the Pines, Lake	75	238,933	238,933	100	0	0	0	0
Cedar Creek Reservoir in Trinity	76	644,686	644,686	100	0	0	71,465	11
Athens, Lake	77	29,435	29,435	100	0	0	1,076	4
Palestine, Lake	78	370,907	370,907	100	0	0	0	0
Tyler, Lake	79	73,256	73,256	100	0	0	0	0
Murvaul, Lake	80	38,284	38,284	100	0	0	342	1
Jacksonville, Lake	81	30,300	30,151	100	-149	0	1,053	3
Nacogdoches, Lake	82	39,521	38,773	98	-748	-2	3,792	10
Houston County Lake	83	17,113	17,113	100	153	1	0	0
Sam Rayburn Reservoir	84	2,857,077	2,693,587	94	38,793	1	599,692	21
Toledo Bend Reservoir (Texas)	85	2,236,450	2,203,293	99	-33,157	-1	300,175	13
Toledo Bend Reservoir (TX & LA)	(85)	4,472,900	4,406,587	99	-66,313	-1	600,350	13
*Livingston, Lake	86	1,741,867	1,741,867	100	0	0	0	0
B A Steinhagen Lake	87	66,966	57,087	85	638	1	2,386	4
Conroe, Lake	88	416,188	416,188	100	0	0	19,675	5
TOTAL		9,814,609	9,607,186	98	-7,126	0	1,020,909	10
TRANS-PECOS								
Red Bluff Reservoir	89	289,670	64,779	22	295	0	-12,496	-4
TOTAL		289,670	64,779	22	295	0	-12,496	-4

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

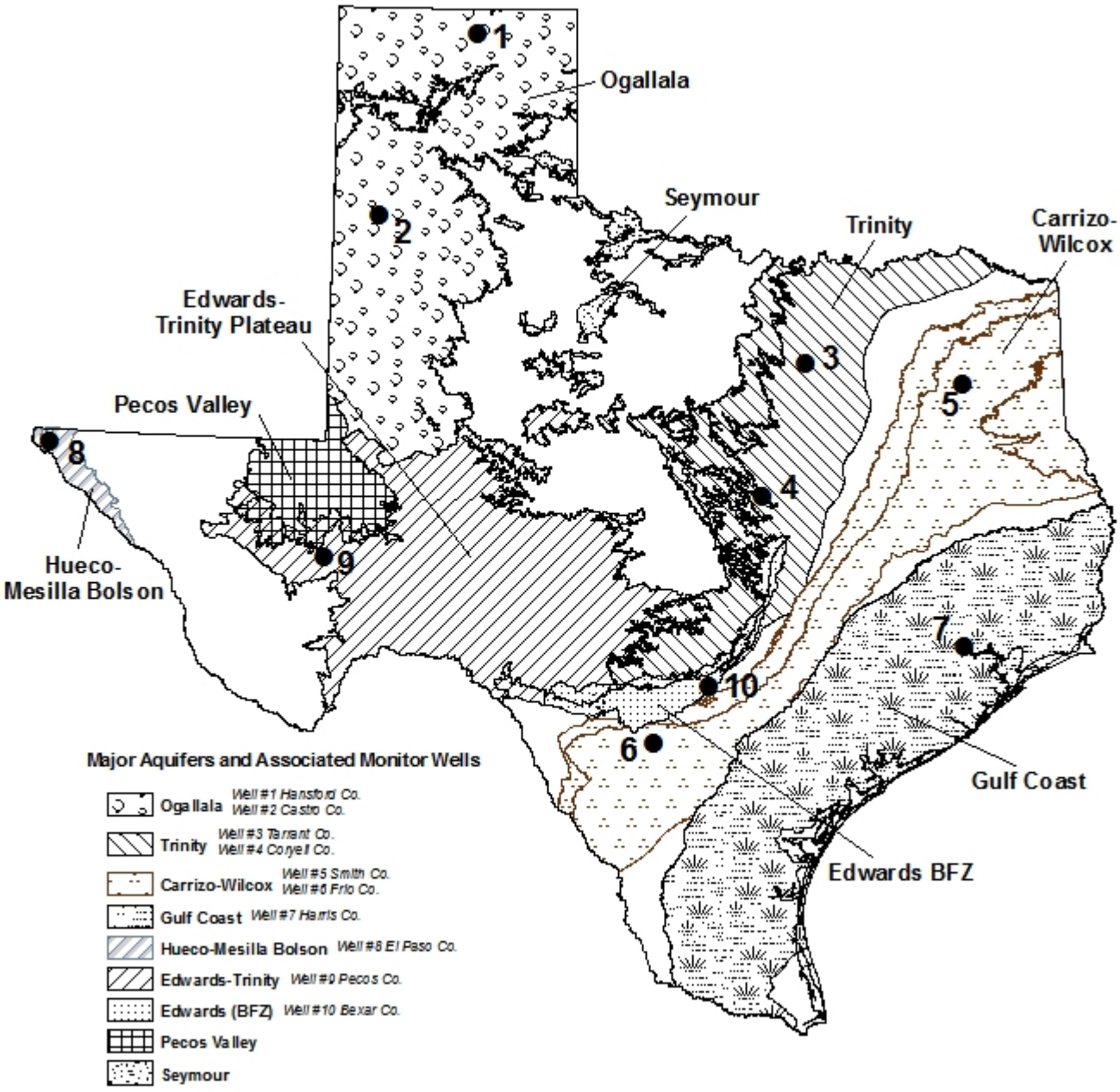
Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage Late Nov. 2009 (acre-feet)	(%)	Change since Late October 2009 (acre-feet)	(%)	Change since Late November 2008 (acre-feet)	(%)
EDWARDS PLATEAU								
Oak Creek Reservoir	90	39,260	23,405	60	-510	-1	-7,827	-20
E V Spence Reservoir	91	517,272	24,968	5	-2,304	0	-30,802	-6
O C Fisher Lake	92	79,483	0	0	0	0	0	0
*O H Ivie Reservoir	93	554,335	238,061	43	-6,077	-1	-73,953	-13
Twin Buttes Reservoir	94	177,850	27,473	15	-1,000	-1	-20,707	-12
Brady Creek Reservoir	95	29,110	14,905	51	-299	-1	-50	0
Buchanan, Lake	96	875,610	430,209	49	25,924	3	-152,757	-17
Lyndon B Johnson, Lake	97	113,690	110,347	97	-1,800	-2	-2,635	-2
*Amistad Reservoir (Texas)	98	1,840,849	1,724,000	94	-23,000	-1	-125,000	-7
*Amistad Reservoir (TX & Mexico)	(98)	3,275,532	3,144,000	96	16,000	0	-198,000	-6
TOTAL		4,227,459	2,593,368	61	-9,066	0	-413,731	-10
SOUTH CENTRAL								
Travis, Lake	99	1,113,902	664,999	60	69,747	6	-54,472	-5
*Austin, Lake	100	21,804	20,684	95	-257	-1	-499	-2
Somerville Lake	101	147,104	147,104	100	0	0	28,005	19
Canyon Lake	102	378,781	300,442	79	10,453	3	983	0
Medina Lake	103	254,823	65,891	26	2,472	1	-85,924	-34
*Coleto Creek Reservoir	104	31,040	31,040	100	2,980	10	7,862	25
TOTAL		1,947,454	1,230,160	63	85,395	4	-104,045	-5
UPPER COAST								
Houston, Lake	105	128,863	128,863	100	0	0	0	0
Texana, Lake	106	153,246	153,246	100	550	0	35,549	23
TOTAL		282,109	282,109	100	550	0	35,549	13
SOUTHERN								
Choke Canyon Reservoir	107	695,262	474,891	68	-3,346	0	-100,618	-14
Corpus Christi, Lake	108	256,961	81,332	32	5,463	2	-93,662	-36
*Falcon Reservoir (Texas)	109	1,551,034	970,000	63	-23,000	-1	-659,000	-42
*Falcon Reservoir (TX & Mexico)	(109)	2,646,817	1,673,000	63	-38,000	-1	-1,119,000	-42
TOTAL		2,503,257	1,526,223	61	-20,883	-1	-853,280	-34
STATE TOTAL		31,197,883	25,792,784	83	6,895	0	592,737	2

*** 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.

GROUNDWATER LEVELS IN OBSERVATION WELLS

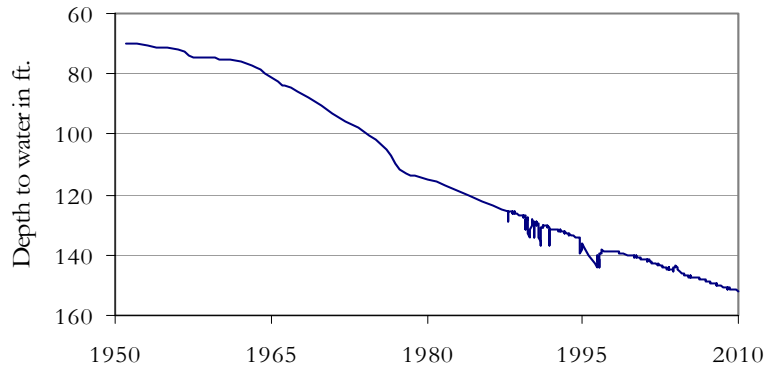


November, 2009

Water level measurements were available for eight out of the ten key monitoring wells. Water levels rose in four of the ten monitoring wells since the beginning of November, ranging from 0.74 feet in the Smith County Carrizo-Wilcox well to 22.52 feet in the Frio County Carrizo-Wilcox well. Water levels declined in the remaining monitoring wells, ranging from 0.24 feet in the Hansford County Ogallala well to 0.79 feet in the El Paso County Hueco-Mesilla Bolson well. The J-17 well in San Antonio recorded a water level of 60.90 feet below land surface, 1.33 feet above last month's measurement. This water level is 10.10 feet above the Stage 1 critical management level.

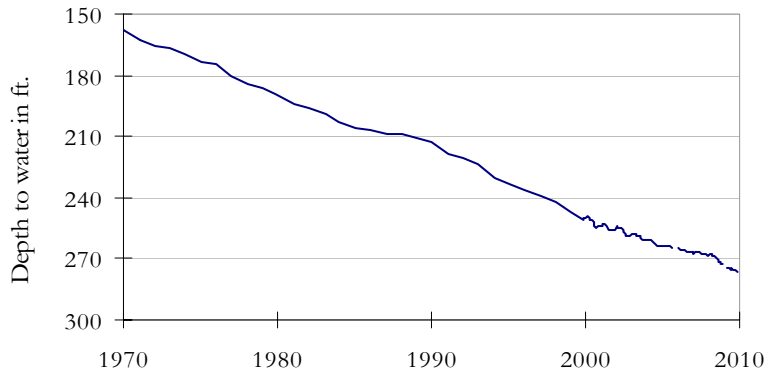
NOVEMBER GROUNDWATER LEVELS IN OBSERVATION WELLS

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



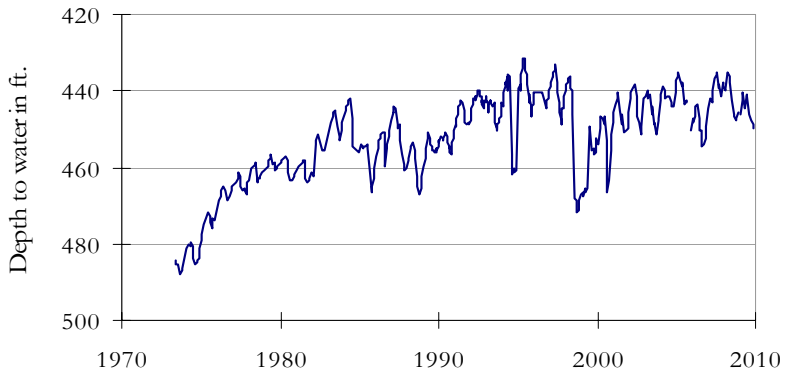
The late November water level measurement in this Ogallala Aquifer well, elevation 2,962 feet above sea level, was 151.85 feet below land surface. This measurement was 0.24 feet below last month's measurement, 1.09 feet below last year's measurement, and 81.73 feet below the initial measurement recorded in 1951.

(2) State Well ID 10-45-102
Southwest Castro County
Ogallala Aquifer



The late November water level measurement in this Ogallala Aquifer well, elevation 3,816 feet above sea level, was 276.27 feet below land surface. This measurement was 0.26 feet below last month's measurement, 3.48 feet below last year's measurement, and 120.27 feet below the initial measurement recorded in 1968.

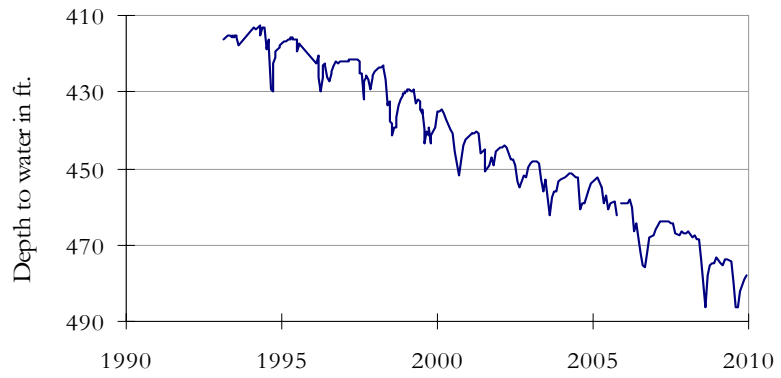
(3) State Well ID 32-15-504
Near Hurst, Tarrant County
Paluxy Formation-Trinity Aquifer



The late November water level measurement in this Paluxy Formation Trinity Aquifer well, elevation 535 feet above sea level, was 449.57 feet below land surface. This measurement was 0.77 feet below last month's measurement, 4.13 feet below last year's measurement, and 71.57 feet below the initial measurement recorded in 1955.

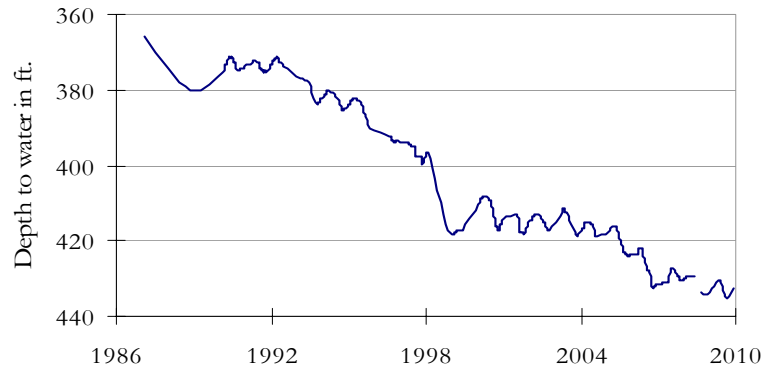
*** ID is used in this publication to differentiate between the monitoring well number (1 - 10) as displayed on the aquifer map and the TWDB's six- or seven-digit state well "identification" number.**

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



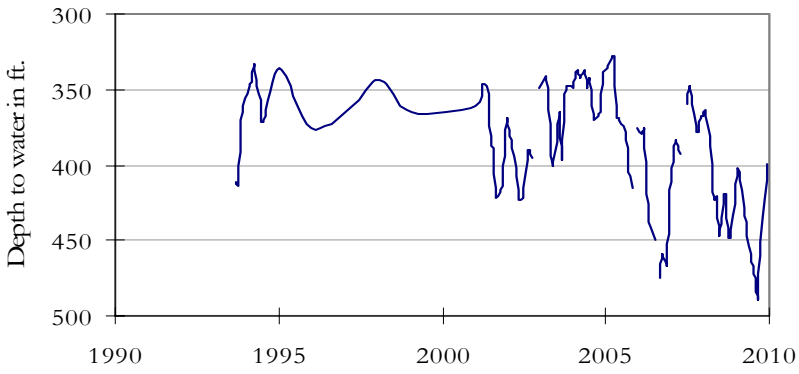
The late November water level measurement in this Hosston Formation Trinity Aquifer well, elevation 823 feet above sea level, was 477.97 feet above land surface. This water level was 1.07 feet above last month's measurement, 3.38 feet below last year's measurement, and 185.97 feet below the initial measurement recorded in 1955.

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



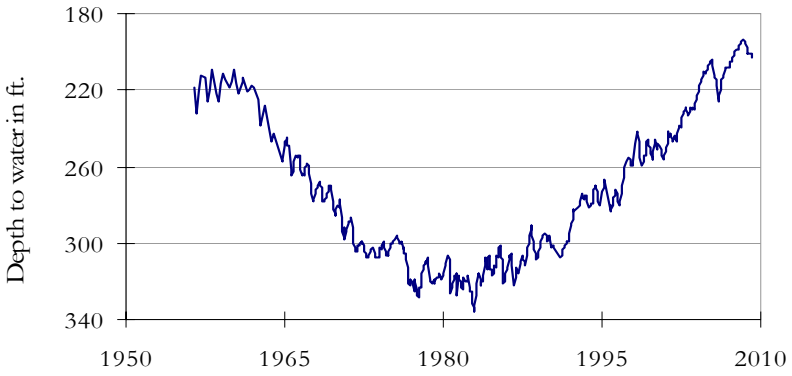
The late November water level measurement in this Carrizo-Wilcox Aquifer well, elevation 555 feet above sea level, was 432.75 feet below land surface. This water level was 0.74 feet above last month's measurement, 1.39 feet above last year's measurement, and 66.75 feet below the initial measurement recorded in 1987.

(6) State Well ID 77-08-803
Pearsall, Frio County
Carrizo-Wilcox Aquifer



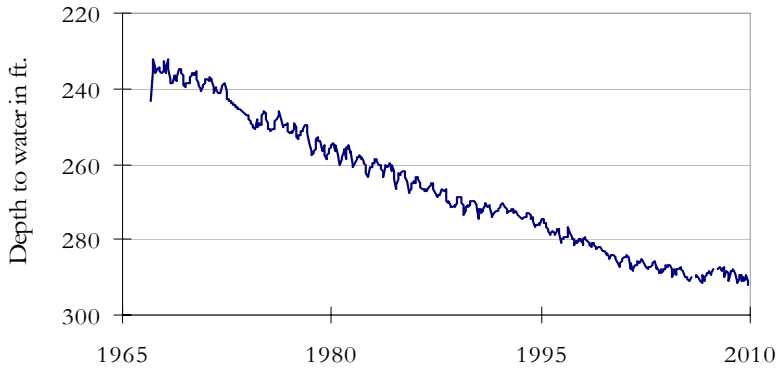
The late November water level measurement in this Carrizo-Wilcox Aquifer well, elevation 652 feet above sea level, was 399.13 feet below land surface. This was 22.52 feet above last month's measurement, 18.43 feet above last year's measurement, and 119.13 feet below the initial measurement recorded in 1963.

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



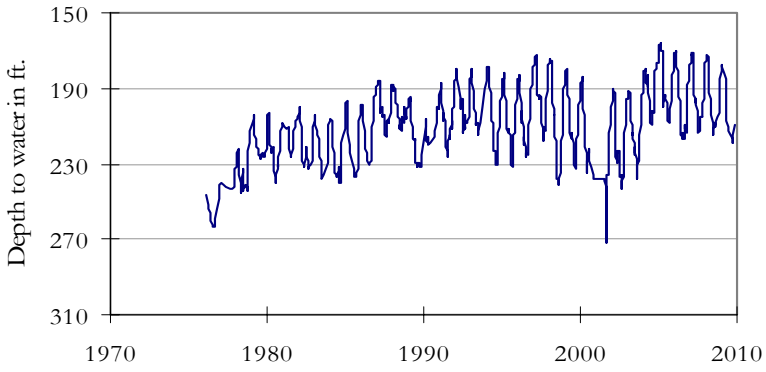
The late November water level measurement in this Evangeline Formation Gulf Coast Aquifer well, elevation 66 feet above sea level was not available. The last reading available, in March 2009, was 202.54 feet below land surface.

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



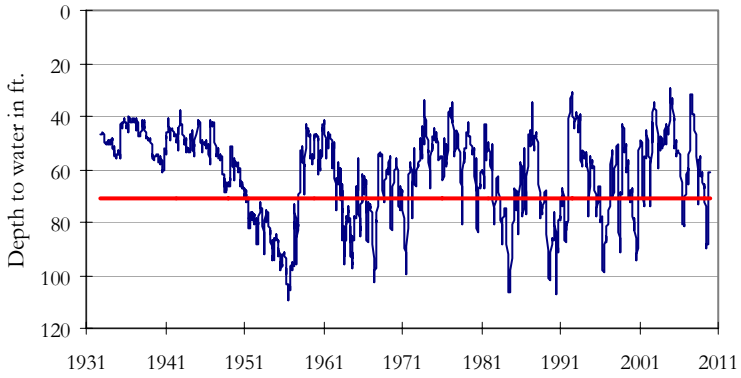
The late November water level measurement in this Hueco-Mesilla Bolson Aquifer well, elevation 3,882 feet above sea level, was 291.86 feet below land surface. This water level was 0.79 feet below last month's measurement, 2.92 feet below last year's measurement, and 59.96 feet below the initial measurement in 1964.

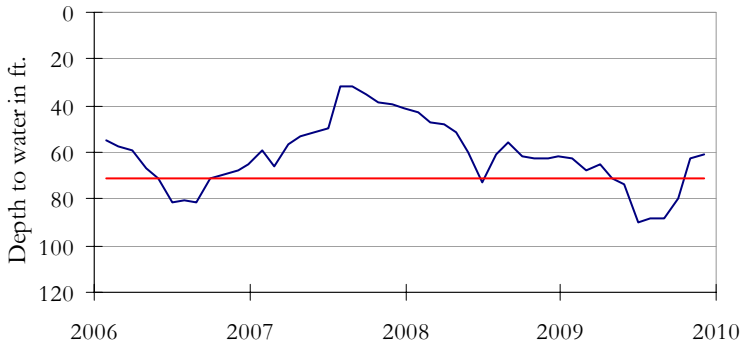
(9) State Well ID 52-16-802
Fort Stockton, Pecos County
Edwards-Trinity (Plateau) Aquifer



The late November water level measurement in this Edwards-Trinity Plateau Aquifer well, elevation 3,199 feet above sea level was not available. The last reading available, in October 2009, was 209.52 feet below land surface.

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

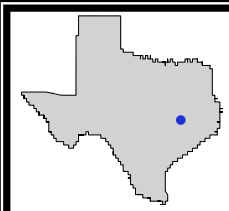




The late November water level measurement in this Edwards (BFZ) Aquifer well, elevation 731 feet above sea level, was 60.90 feet below land surface. This was 1.33 feet above last month's measurement, 1.51 feet above last year's measurement, and 14.26 feet below the initial measurement recorded in 1932.

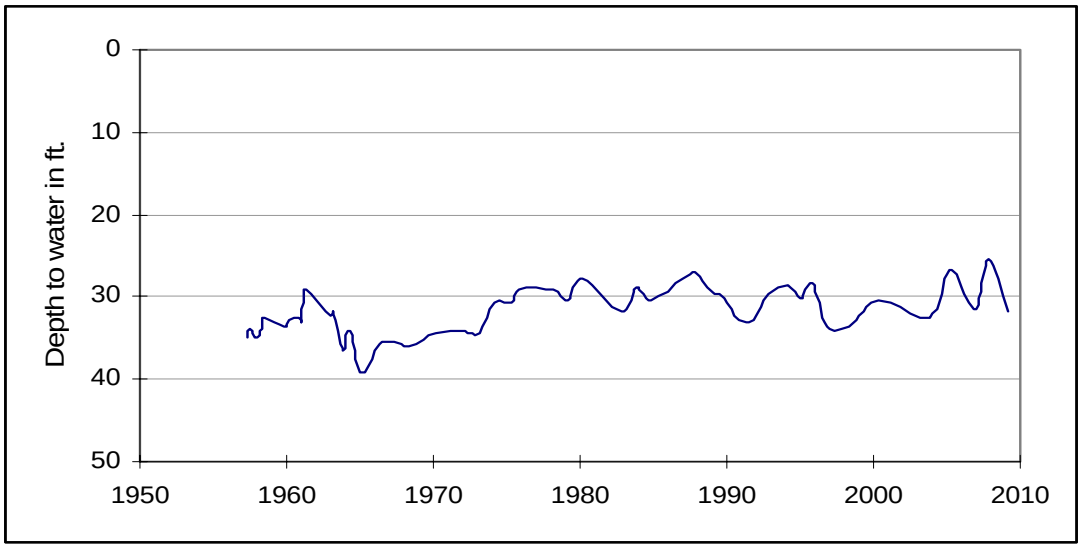
***** Water levels below the red line indicate Edwards Aquifer Authority Stage 1 drought restrictions. *****

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.

State Well ID 59-11-308
Robertson County



This water level observation well, located 4 miles southwest of Hearne, at an elevation of 271 feet above sea level, was completed in the Brazos River Alluvium Aquifer. Nearly all groundwater withdrawn from the aquifer is used for irrigation, and no significant water level declines have occurred.

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