

Texas Water Development Board



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

RESERVOIR STORAGE

July 2010

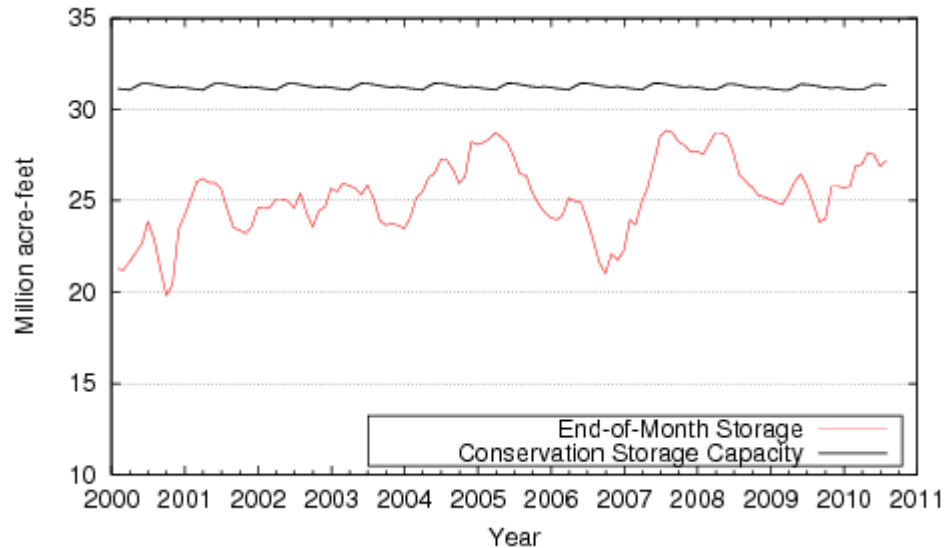
By the end of July, total storage in the state's 109 major reservoirs was 293,000 acre-feet more than a month ago, at 27.2 million acre-feet in conservation storage. This is 1 % higher than last month, at 87% full*.

Storage was at 100% in 19 reservoirs, the same as last month, including both international Amistad and Falcon reservoirs. Most reservoirs at 100% storage level were in the Low Rolling Plains, East, Upper Coast, South Central and North Central regions. Four lakes were at or below 10% full: O. C. Fisher Lake Reservoir was effectively empty, Lake Meredith (total) was at 3%, E.V. Spence Reservoir was at 5%, and Lake J. B. Thomas was at 8% full.

Four regions had combined storage above 90%: Upper Coast 100%, Southern 96%, North Central 94%, and East 92%. The High Plains (10%) and Trans-Pecos regions (20%) remained very low. Storage decreased in 4 and increased in 5 regions over the month. Compared to last July, storage increased in 7 regions but decreased in 2 regions.

* 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 95 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.

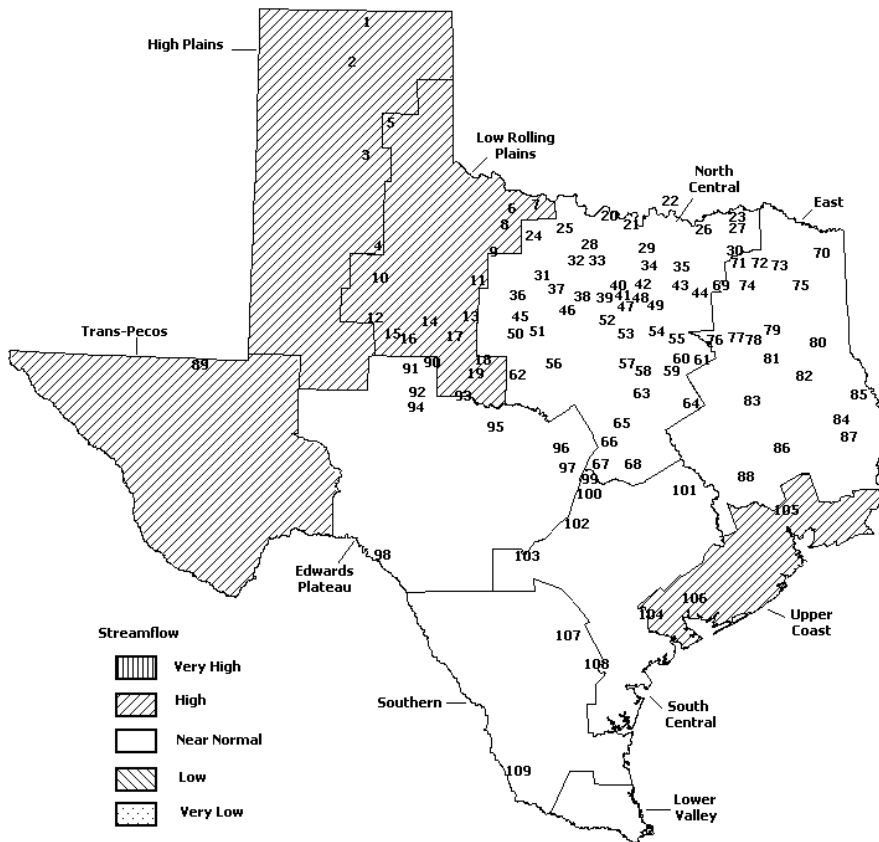
STREAMFLOW

Of 29 reporting index stations in July, computed 31-day mean flows were very high (<5%) at 3 stations, high (5% - 30%) at 9 stations, low (70% - 95%) at 3 stations, and near normal (30% - 70%) at the remaining 14 stations. Compared to June, flows have increased at 16 index stations and decreased at 13 stations.

On a regional basis, flows in July were high in the High Plains, Low Rolling Plains, Trans-Pecos, and Upper Coast regions, and near normal everywhere else. Streamflow in the Lower Valley Region is not monitored.

JULY STREAMFLOW CONDITIONS

Reservoirs Shown on Map



- | | |
|------------------------------------|-----------------------------------|
| 1. Palo Duro Reservoir | 56. Proctor Lake |
| 2. Meredith, Lake | 57. Whitney Lake |
| 3. MacKenzie Reservoir | 58. Aquilla Lake |
| 4. White River Lake | 59. Navarro Mills Lake |
| 5. Greenbelt Lake | 60. Halbert, Lake |
| 6. Electra, Lake | 61. Richland-Chambers Reservoir |
| 7. N. Fork Buffalo Creek Reservoir | 62. Lake Brownwood |
| 8. Kemp, Lake | 63. Waco Lake |
| 9. Miller's Creek Reservoir | 64. Limestone, Lake |
| 10. Alan Henry Reservoir | 65. Belton Lake |
| 11. Stamford, Lake | 66. Stillhouse Hollow Lake |
| 12. Lake J. B. Thomas | 67. Georgetown, Lake |
| 13. Fort Phantom Hill, Lake | 68. Granger Lake |
| 14. Sweetwater, Lake | 69. Tawakoni, Lake |
| 15. Colorado City, Lake | 70. Wright Patman Lake |
| 16. Champion Creek Reservoir | 71. Sulphur Springs, Lake |
| 17. Abilene, Lake | 72. Cypress Springs, Lake |
| 18. Coleman, Lake | 73. Bob Sandlin, Lake |
| 19. Hords Creek Lake | 74. Fork Reservoir, Lake |
| 20. Farmers Creek Reservoir | 75. O' the Pines, Lake |
| 21. Hubert H Moss Lake | 76. Cedar Creek Reservoir Trinity |
| 22. Texoma, Lake | 77. Athens, Lake |
| 23. Pat Mayse Lake | 78. Palestine, Lake |
| 24. Lake Kickapoo | 79. Tyler, Lake |
| 25. Lake Arrowhead | 80. Murvaul, Lake |
| 26. Bonham, Lake | 81. Jacksonville, Lake |
| 27. Crook, Lake | 82. Nacogdoches, Lake |
| 28. Amon G Carter, Lake | 83. Houston County Lake |
| 29. Ray Roberts, Lake | 84. Sam Rayburn Reservoir |
| 30. Jim Chapman Lake | 85. Toledo Bend Reservoir |
| 31. Graham, Lake | 86. Livingston, Lake |
| 32. Lost Creek Reservoir | 87. B. A. Steinhagen Lake |
| 33. Bridgeport Reservoir | 88. Conroe, Lake |
| 34. Lewisville Lake | 89. Red Bluff Reservoir |
| 35. Lavon Lake | 90. Oak Creek Reservoir |
| 36. Hubbard Creek Reservoir | 91. E. V. Spence Reservoir |
| 37. Possum Kingdom Lake | 92. O. C. Fisher Lake |
| 38. Mineral Wells, Lake | 93. O. H. Ivie Reservoir |
| 39. Weatherford, Lake | 94. Twin Buttes Reservoir |
| 40. Eagle Mountain Lake | 95. Brady Creek Reservoir |
| 41. Worth, Lake | 96. Buchanan, Lake |
| 42. Grapevine Lake | 97. Lyndon B Johnson, Lake |
| 43. Lake Ray Hubbard | 98. Amistad Reservoir, Intl. |
| 44. New Terrell City Lake | 99. Travis, Lake |
| 45. Daniel, Lake | 100. Austin, Lake |
| 46. Palo Pinto, Lake | 101. Somerville Lake |
| 47. Benbrook Lake | 102. Canyon Lake |
| 48. Arlington, Lake | 103. Medina Lake |
| 49. Joe Pool Lake | 104. Coletto Creek Reservoir |
| 50. Cisco, Lake | 105. Lake Houston |
| 51. Leon, Lake | 106. Texana, Lake |
| 52. Lake Granbury | 107. Choke Canyon Reservoir |
| 53. Pat Cleburne, Lake | 108. Lake Corpus Christi |
| 54. Waxahachie, Lake | 109. Falcon Reservoir, Intl. |
| 55. Bardwell Lake | |

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 June 2010		Change since Late July 2009		
			Late Jul. (acre-feet)	2010 (%)	(acre-feet)	(%)	(acre-feet)	(%)	
HIGH PLAINS									
Palo Duro Reservoir	1	60,897	24,754	41	-5,598	-9	23,946	39	
Meredith, Lake (Texas)	2	500,000	19,569	4	-3,727	-1	-20,433	-4	
Meredith, Lake (Texas & Oklahoma)	(2)	779,556	19,569	3	-3,727	0	-20,433	-3	
MacKenzie Reservoir	3	46,429	6,830	15	-39	0	612	1	
White River Lake	4	29,880	10,885	36	6,950	23	6,328	21	
TOTAL		637,206	62,038	10	-2,414	0	10,453	2	
LOW ROLLING PLAINS									
Greenbelt Lake	5	59,500	18,223	31	1,098	2	968	2	
*Electra, Lake	6	5,626	653	12	68	1	24	0	
N. Fork Buffalo Crk Reservoir	7	15,400	6,599	43	213	1	1,687	11	
Kemp, Lake	8	245,308	245,308	100	0	0	85,203	35	
Millers Creek Reservoir	9	27,888	21,527	77	585	2	7,252	26	
Alan Henry Reservoir	10	94,808	94,808	100	0	0	3,789	4	
Stamford, Lake	11	51,570	51,570	100	0	0	13,700	27	
J B Thomas, Lake	12	199,931	15,274	8	1,046	1	3,007	2	
Fort Phantom Hill, Lake	13	70,030	64,452	92	3,831	5	12,085	17	
Sweetwater, Lake	14	10,006	6,526	65	-89	-1	30	0	
Colorado City, Lake	15	31,793	16,457	52	-271	-1	-2,931	-9	
Champion Creek Reservoir	16	41,618	7,361	18	-78	0	-1,010	-2	
Abilene, Lake	17	6,099	6,052	99	122	2	3,508	58	
Coleman, Lake	18	38,076	24,541	64	-203	-1	275	1	
Hords Creek Lake	19	5,684	1,024	18	-93	-2	-887	-16	
TOTAL		903,337	580,375	64	6,229	1	126,700	14	
NORTH CENTRAL									
Nocona, Lake (Farmers Crk)	20	21,445	21,231	99	-40	0	1,053	5	
Hubert H Moss Lake	21	24,058	23,534	98	-182	-1	618	3	
Texoma, Lake (Texas)	22	1,300,076	1,286,413	99	-6,414	0	-10,971	-1	
Texoma, Lake (Texas & Oklahoma)	(22)	2,600,152	2,572,826	99	-12,829	0	-21,942	-1	
*Pat Mayse Lake	23	117,844	113,488	96	-1,564	-1	-3,504	-3	
Kickapoo, Lake	24	85,825	82,587	96	2,829	3	39,505	46	
Arrowhead, Lake	25	235,997	219,828	93	-281	0	53,378	23	
Bonham, Lake	26	11,026	10,347	94	615	6	527	5	
Crook, Lake	27	9,195	8,031	87	-244	-3	-461	-5	
Amon G Carter, Lake	28	19,903	19,903	100	0	0	2,641	13	
Ray Roberts, Lake	29	798,758	771,369	97	-9,975	-1	-13,991	-2	
Jim Chapman Lake (Cooper)	30	260,332	214,568	82	-17,377	-7	-26,395	-10	
Graham, Lake	31	45,260	43,796	97	-390	-1	7,194	16	
*Lost Creek Reservoir	32	11,950	11,877	99	-73	-1	2,218	19	
Bridgeport, Lake	33	366,236	366,236	100	0	0	106,655	29	
Lewisville Lake	34	563,228	533,957	95	2,605	0	23,291	4	
Lavon Lake	35	443,844	382,577	86	-22,776	-5	-25,825	-6	
Hubbard Creek Reservoir	36	318,067	208,980	66	-5,203	-2	-20,187	-6	
Poosum Kingdom Lake	37	540,340	522,414	97	-1,134	0	47,253	9	
*Mineral Wells, Lake	38	7,065	6,824	97	191	3	981	14	
Weatherford, Lake	39	17,789	17,446	98	374	2	3,737	21	
Eagle Mountain Lake	40	179,880	179,448	100	7,634	4	34,666	19	
Worth, Lake	41	24,500	22,108	90	-708	-3	4,160	17	
Grapevine Lake	42	164,702	160,906	98	-1,865	-1	11,944	7	
Ray Hubbard, Lake	43	452,040	399,405	88	-16,763	-4	-43,956	-10	
New Terrell City Lake	44	8,583	7,829	91	-322	-4	-194	-2	
Daniel, Lake	45	9,435	5,900	63	-343	-4	860	9	
Palo Pinto, Lake	46	26,827	23,803	89	-1,083	-4	15,423	57	
Benbrook Lake	47	85,648	79,752	93	-281	0	9,267	11	
Arlington, Lake	48	40,156	38,456	96	1,606	4	5,458	14	

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 JUNE 2010		Change since Late July 2009		
			Late Jul. (acre-feet)	2010 (%)	(acre-feet)	(%)	(acre-feet)	(%)	
NORTH CENTRAL (Continue)									
Joe Pool Lake	49	142,861	142,492	100	2,879	2	5,314	4	
*Cisco, Lake	50	26,000	18,200	70	2,152	8	576	2	
Leon, Lake	51	26,421	18,717	71	-641	-2	-97	0	
Granbury, Lake	52	128,046	125,025	98	-755	-1	20,529	16	
Pat Cleburne, Lake	53	26,008	23,694	91	-921	-4	3,133	12	
Waxahachie, Lake	54	10,779	9,739	90	-346	-3	1,276	12	
Bardwell Lake	55	46,122	44,265	96	-835	-2	3,496	8	
Proctor Lake	56	55,457	44,362	80	-2,971	-5	13,444	24	
Whitney, Lake	57	553,349	524,670	95	62,978	11	189,584	34	
Aquilla Lake	58	44,460	42,672	96	-267	-1	2,898	7	
Navarro Mills Lake	59	49,826	48,756	98	-1,070	-2	-859	-2	
*Halbert, Lake	60	6,033	4,674	77	-177	-3	1,483	25	
Richland-Chambers Reservoir	61	1,087,839	1,067,062	98	-20,777	-2	111,177	10	
*Brownwood, Lake	62	131,429	94,419	72	-2,586	-2	962	1	
Waco, Lake	62	198,943	197,526	99	1,501	1	8,544	4	
Limestone, Lake	64	208,015	200,574	96	-5,123	-2	19,059	9	
Belton Lake	65	435,225	407,360	94	0	0	35,047	8	
Stillhouse Hollow Lake	66	227,771	227,771	100	0	0	17,544	8	
Georgetown, Lake	67	36,823	35,463	96	-1,360	-4	19,347	53	
Granger Lake	68	50,779	43,445	86	979	2	4,028	8	
Tawakoni, Lake	69	888,126	843,351	95	-18,639	-2	12,642	1	
TOTAL		10,570,321	9,947,250	94	-57,143	-1	694,472	7	
EAST									
Wright Patman Lake	70	277,486	277,486	100	-15,182	-5	0	0	
*Sulphur Springs, Lake	71	17,838	13,106	73	-535	-3	-4,732	-27	
Cypress Springs, Lake	72	66,756	65,701	98	-383	-1	-1,988	-3	
Bob Sandlin, Lake	73	200,579	192,147	96	-2,398	-1	-8,432	-4	
Fork Reservoir, Lake	74	604,927	584,864	97	-11,351	-2	-20,063	-3	
O the Pines, Lake	75	267,672	267,672	100	776	0	0	0	
Cedar Creek Reservoir in Trinity	76	644,686	627,004	97	-14,145	-2	12,860	2	
Athens, Lake	77	29,435	29,309	100	-126	0	968	3	
Palestine, Lake	78	370,907	365,039	98	-5,868	-2	9,346	3	
Tyler, Lake	79	73,256	72,550	99	-706	-1	4,346	6	
Murvaul, Lake	80	38,284	34,122	89	-1,702	-4	-3,240	-8	
Jacksonville, Lake	81	25,670	24,776	97	-355	-1	-4,255	-17	
Nacogdoches, Lake	82	39,521	34,686	88	-1,182	-3	-531	-1	
Houston County Lake	83	17,113	16,592	97	-267	-2	970	6	
Sam Rayburn Reservoir	84	2,857,077	2,450,202	86	-129,510	-5	-74,871	-3	
Toledo Bend Reservoir (Texas)	85	2,236,450	1,899,821	85	-51,943	-2	-99,625	-4	
Toledo Bend Reservoir (TX & LA)	(85)	4,472,900	3,799,642	85	-103,887	-2	-199,250	-4	
*Livingston, Lake	86	1,741,867	1,741,867	100	0	0	16,867	1	
B A Steinhagen Lake	87	66,966	58,297	87	-4,838	-7	-7,056	-11	
Conroe, Lake	88	416,188	408,587	98	1,754	0	17,284	4	
TOTAL		9,992,678	9,163,828	92	-237,961	-2	-162,152	-2	
TRANS-PECOS									
Red Bluff Reservoir	89	289,670	59,325	20	4,981	2	-11,431	-4	
TOTAL		289,670	59,325	20	4,981	2	-11,431	-4	

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

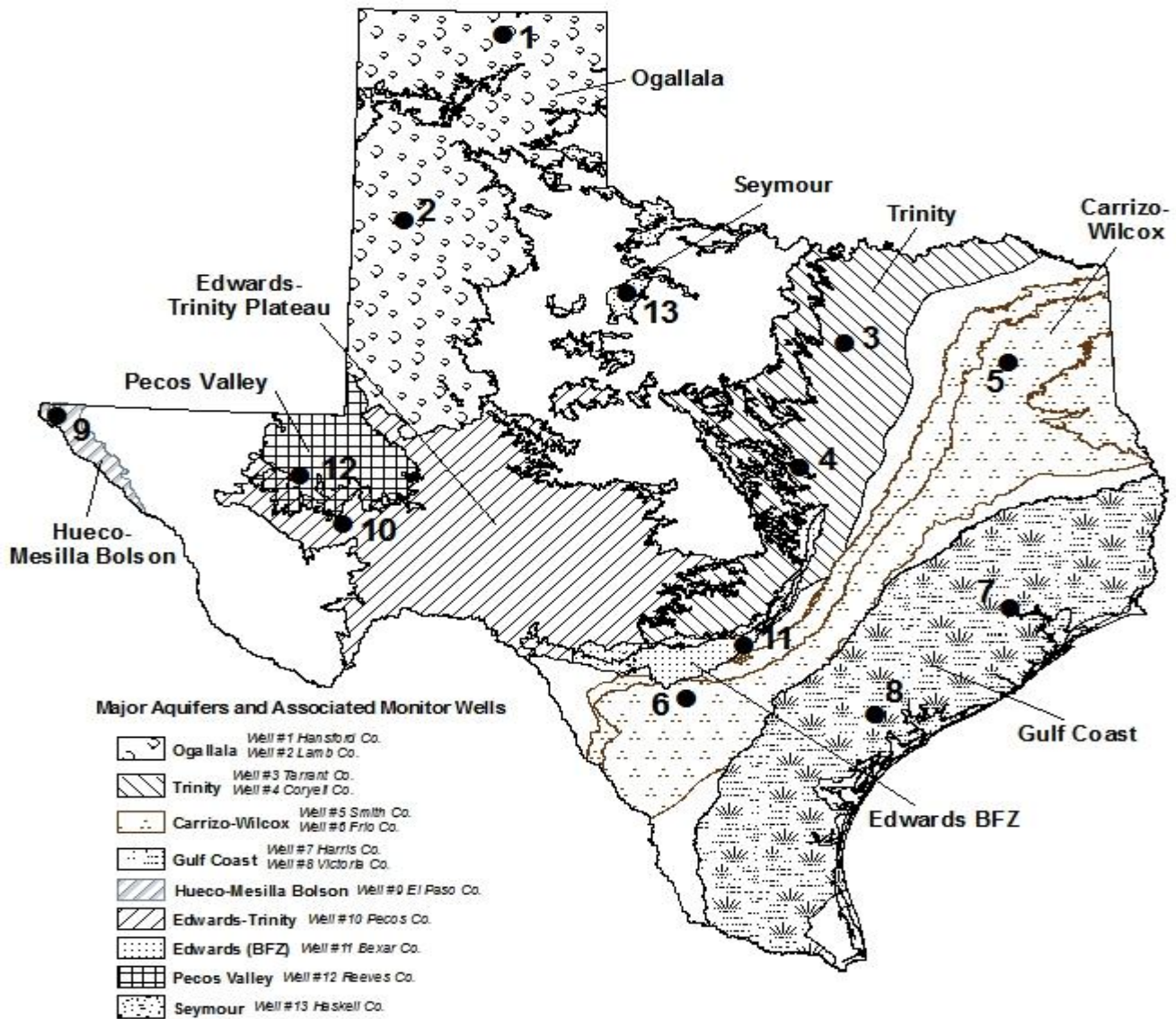
Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage		Change since Late June 2010		Change since Late July 2009		
			Late Jul. (acre-feet)	2010 (%)	(acre-feet)	(%)	(acre-feet)	(%)	
EDWARDS PLATEAU									
Oak Creek Reservoir	90	39,260	24,761	63	-557	-1	-1,595	-4	
E V Spence Reservoir	91	517,272	24,595	5	715	0	-11,527	-2	
O C Fisher Lake	92	79,483	0	0	0	0	0	0	
*O H Ivie Reservoir	93	554,335	218,734	39	-4,068	-1	-44,441	-8	
Twin Buttes Reservoir	94	177,850	30,390	17	-2,052	-1	-2,456	-1	
Brady Creek Reservoir	95	29,110	15,923	55	-470	-2	1,528	5	
Buchanan, Lake	96	824,519	700,617	85	7,772	1	257,281	31	
Lyndon B Johnson, Lake	97	113,323	111,258	98	669	1	590	1	
*Amistad Reservoir (Texas)	98	1,840,849	1,840,000	100	59,000	3	30,000	2	
*Amistad Reservoir (TX & Mexico)	(98)	3,275,532	3,275,532	100	153,532	5	33,532	1	
TOTAL		4,176,001	2,966,278	71	61,009	1	229,380	5	
SOUTH CENTRAL									
Travis, Lake	99	1,113,255	955,301	86	-37,135	-3	467,568	42	
*Austin, Lake	100	21,804	21,093	97	152	1	121	1	
Somerville Lake	101	147,104	146,463	100	-641	0	33,317	23	
Canyon Lake	102	378,781	378,781	100	0	0	108,398	29	
Medina Lake	103	254,823	185,973	73	-1,007	0	107,750	42	
*Coletto Creek Reservoir	104	31,040	31,040	100	1,267	4	7,991	26	
TOTAL		1,946,807	1,718,651	88	-37,364	-2	725,145	37	
UPPER COAST									
Houston, Lake	105	128,863	128,863	100	0	0	0	0	
Texana, Lake	106	153,246	152,604	100	10,479	7	59,529	39	
TOTAL		282,109	281,467	100	10,479	4	59,529	21	
SOUTHERN									
Choke Canyon Reservoir	107	695,262	607,750	87	0	0	112,987	16	
Corpus Christi, Lake	108	256,961	249,011	97	28,673	11	157,253	61	
*Falcon Reservoir (Texas)	109	1,551,034	1,551,000	100	517,000	33	402,000	26	
*Falcon Reservoir (TX & Mexico)	(109)	2,646,817	2,646,817	100	968,817	37	780,817	30	
TOTAL		2,503,257	2,407,761	96	545,673	22	672,240	27	
STATE TOTAL		31,301,386	27,186,973	87	293,489	1	2,344,336	7	

* 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 $100 \times (\text{current conservation storage} - \text{past conservation storage}) / \text{conservation storage capacity}$. Figures shown are for the Texas share of conservation storage in all reservoirs.

GROUNDWATER LEVELS IN OBSERVATION WELLS



July, 2010

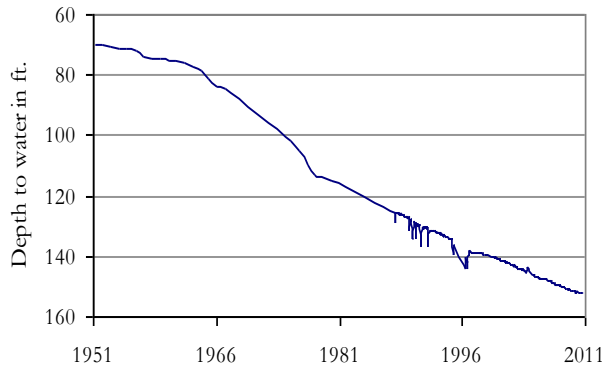
Water level measurements were available for twelve out of the thirteen key monitoring wells. Water levels rose in eight of the thirteen monitoring wells since the beginning of July, ranging from 0.07 feet in the Hansford County Ogallala well to 10.37 feet in the Frio County Carrizo-Wilcox well. Water levels declined in the remaining monitoring wells, ranging from 0.16 feet in the Lamb County Ogallala well (replaces the Castro County monitoring well that went dry last month) to 0.66 feet in the Smith County Carrizo-Wilcox well. The J-17 well in San Antonio recorded a water level of 57.44 feet below land surface, 1.30 feet above last month's measurement. This water level is 13.56 feet above the Stage 1 critical management level.

	(1) Hansford 0354301	(2) Lamb 1053602	(3) Tarrant 3215504	(4) Coryell 4035404	(5) Smith 3430907	(6) Frio 7708803	(7) Harris 6514409	(8) Victoria 8017502	(9) El Paso 4913301	(10) Pecos 5216802	(11) Bexar 6837203	(12) Reeves 4644501	(13) Haskell 2135748
July 2010	152.26	138.04	N/A	479.71	432.73	412.51	208.02	33.25	291.97	208.70	57.44	149.37	44.70
June 2010	152.33	137.88	447.15	482.34	432.07	422.88	206.87	33.44	292.36	217.78	58.74	152.82	44.42
Month Change	0.07	-0.16	N/A	2.63	-0.66	10.37	-1.15	0.19	0.39	9.08	1.30	3.45	-0.28
Year Change	-0.99	-1.06	N/A	6.72	1.43	62.75	N/A	-2.68	-0.77	5.5	30.95	-5.82	1.25
Historical Change	-82.14	-109.89	N/A	-187.71	-66.73	-132.51	-72.52	0.75	-60.07	38.18	-10.80	-57.28	-3.37

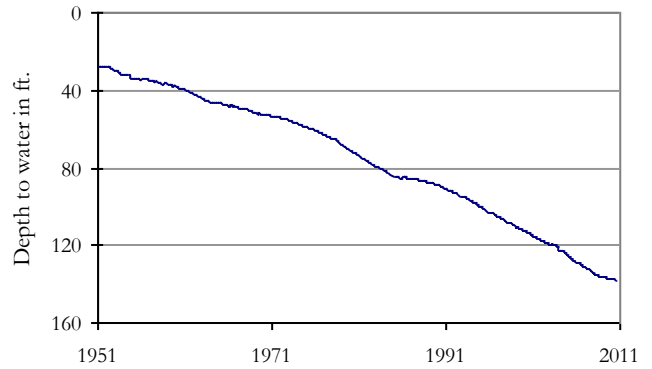
* ID is used in this publication to differentiate between the monitoring well number (1 - 13) as displayed on the aquifer map and the TWDB's six- or seven-digit state well "identification" number.

JUNE GROUNDWATER LEVELS IN OBSERVATION WELLS

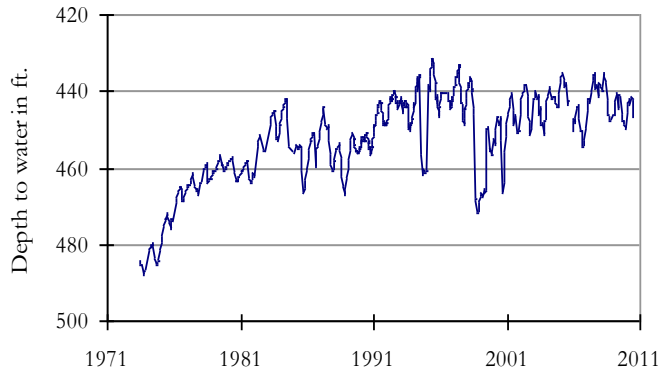
**(1) State Well ID 03-54-301
Near Spearman, Hansford County
Ogallala Aquifer**



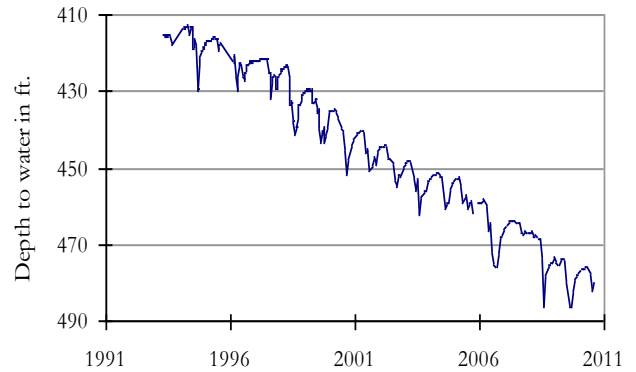
**(2) State Well ID 10-53-602
Near Earth, Lamb County
Ogallala Aquifer**



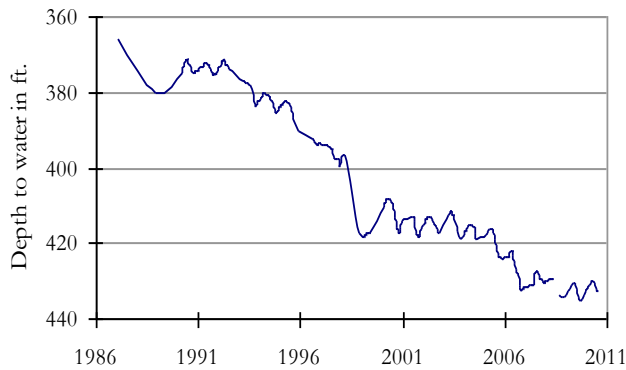
**(3) State Well ID 32-15-504
Near Hurst, Tarrant County
Paluxy Formation-Trinity Aquifer**



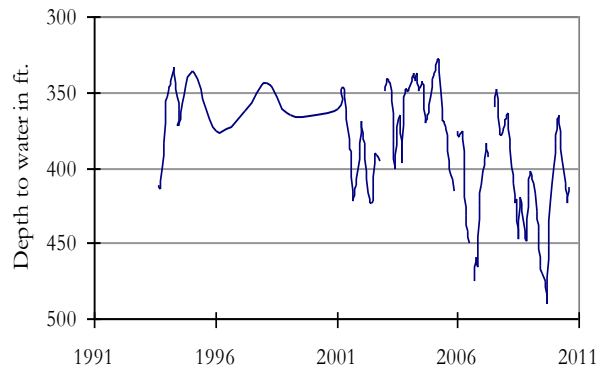
**(4) State Well ID 40-35-404
Gatesville, Coryell County
Hosston Formation-Trinity Aquifer**



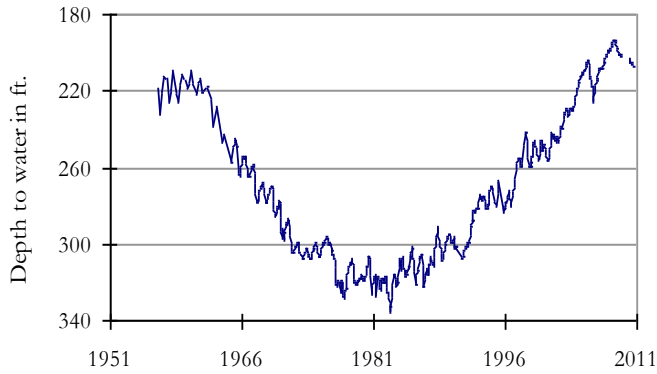
**(5) State Well ID 34-30-907
Red Springs, Smith County
Carrizo-Wilcox Aquifer**



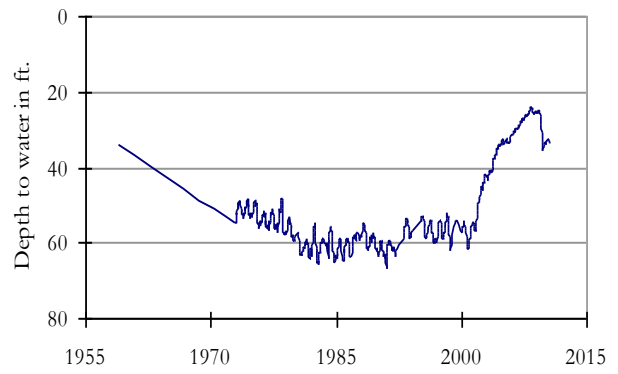
**(6) State Well ID 77-08-803
Pearsall, Frio County
Carrizo-Wilcox Aquifer**



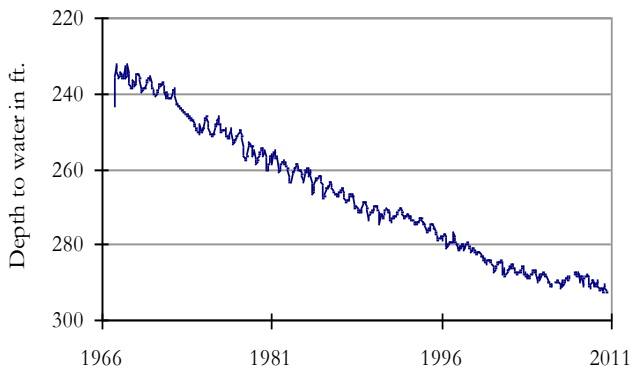
(7) State Well ID 65-14-409
Alief, Harris County
Evangeline Formation-Gulf Coast Aquifer



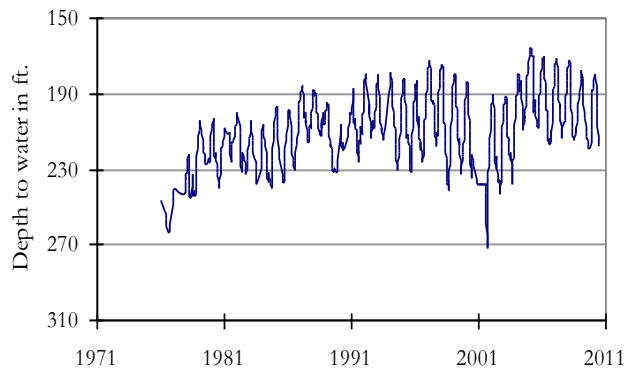
(8) State Well ID 80-17-502
Near Bloomington, Victoria County
Lissie Formation-Gulf Coast Aquifer



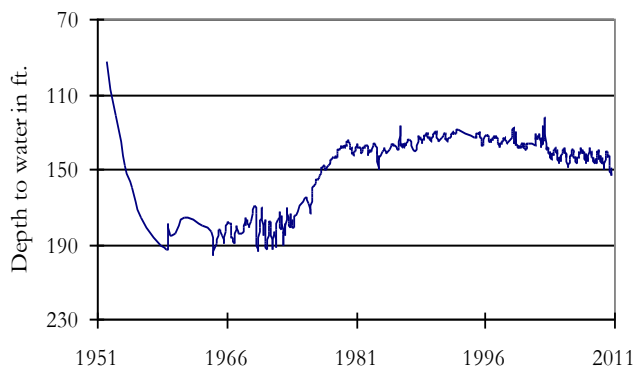
(9) State Well ID 49-13-301
El Paso, El Paso County
Hueco-Mesilla Bolson Aquifer



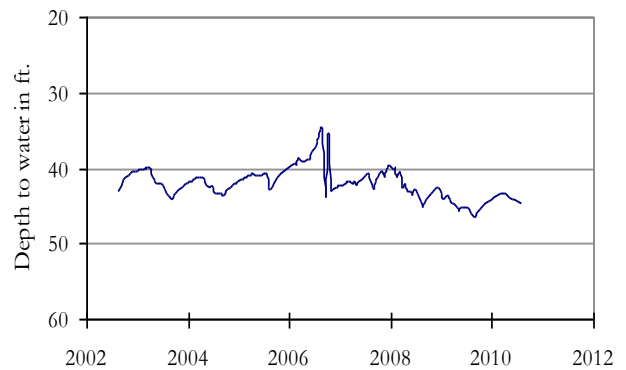
(10) State Well ID 52-16-802
Fort Stockton, Pecos County
Edwards-Trinity (Plateau) Aquifer



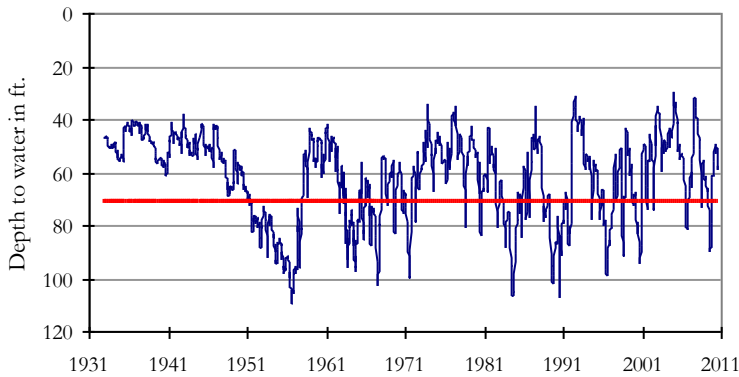
(12) State Well ID 46-44-501
Near Pecos, Reeves County
Pecos Valley Aquifer



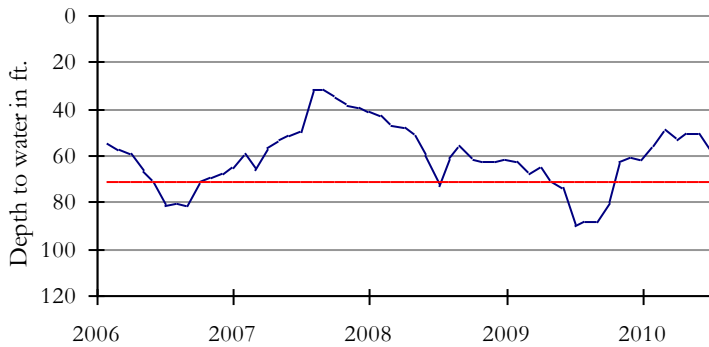
(13) State Well ID 21-35-748
Near O'Brien, Haskell County
Seymour Aquifer



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

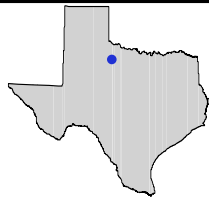


The late July water level measurement in this Edwards (BFZ) Aquifer well, elevation 731 feet above sea level, was 57.44 feet below land surface. This was 1.30 feet above last month's measurement, 30.95 feet above last year's measurement, and 10.80 feet below the initial measurement recorded in 1932.



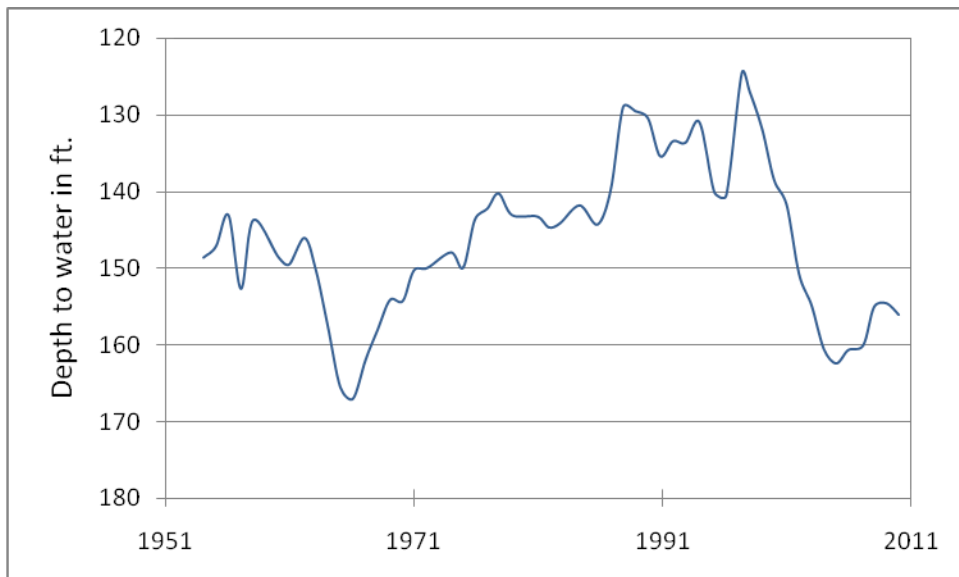
***** Water levels below the red line indicate Edwards Aquifer Authority Stage 1 drought restrictions. *****

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 22-14-504
King County**



This unused water level observation well, located 13 miles south of Paducah, at an elevation of 1825 feet above sea level, was completed in the Blaine Aquifer. Water from the Blaine Aquifer is used for livestock and to irrigate highly salt-tolerant crops. Water level fluctuations appear to reflect overall pumping changes in the immediate vicinity.

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