

Texas Water Development Board



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RESERVOIR STORAGE

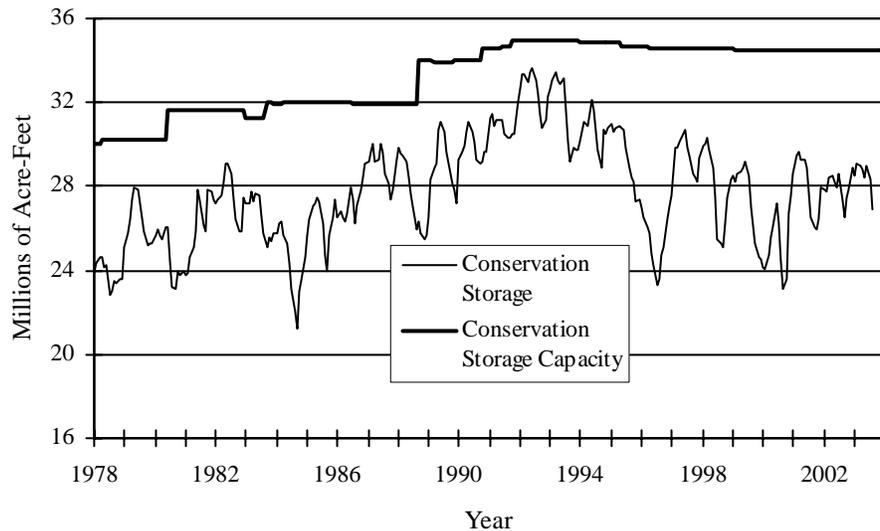
August 2003

Near the end of August, the 77 reservoirs monitored for this report held 26.9 million acre-feet in conservation storage, or 78.0 percent of the conservation storage capacity of the State's major reservoirs. Statewide total storage is below median for this time of year. Storage dropped significantly this month, down 1.39 million acre-feet (-4.0%). Compared to last year at this time, storage is down 0.50 million acre-feet (-1.4%).

Storage in the North Central, East, Upper Coast and South Central Regions is reasonably comfortable, at 86%, 91%, 94% and 90%, respectively. Storage in the High Plains (27%), Low Rolling Plains (43%), Edwards Plateau (49%) and Southern (45%) Regions all decreased. The Trans-Pecos Region is still very dry with 17% of capacity, 2% less than last month. Storage is at 100% in only 5 reservoirs this month, 8 less than last month.

Lake Colorado City gained 9% (4,800 acre-feet), and is the only major reservoir to have significantly increased storage this month.

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS



Current data are based on elevation near end of month at 77 reservoirs that represent 98 percent of total conservation storage capacity in Texas reservoirs having a capacity of 5,000 acre-feet or more.

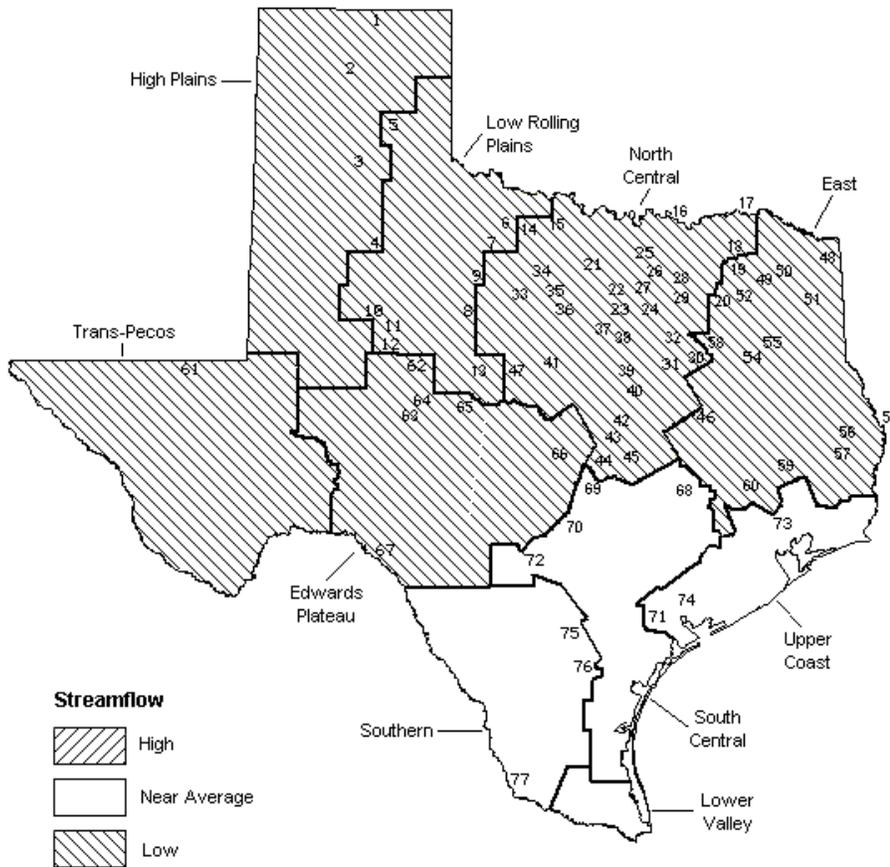
STREAMFLOW

Of 29 reporting index stations in August, computed 30-day mean flows were high (5% - 30% exceedance) at 2 stations, near normal (30% - 70% exceedance) at 11 stations, low (70% - 95% exceedance) at 15 stations and very low (95% - 100% exceedance) at 1 station. Compared to July, flows decreased at 25 index stations and increased at 4.

On a regional basis, flows in August were normal in the South Central, Upper Coast and Southern Regions and low everywhere else.

AUGUST STREAMFLOW CONDITIONS

Reservoirs Shown on Map



- | | |
|----------------------------------|-----------------------------|
| 1. Palo Duro Reservoir | 40. Waco Lake |
| 2. Lake Meredith | 41. Proctor Lake |
| 3. MacKenzie Reservoir | 42. Belton Lake |
| 4. White River Lake | 43. Stillhouse Hollow Lake |
| 5. Greenbelt Reservoir | 44. Lake Georgetown |
| 6. Lake Kemp | 45. Granger Lake |
| 7. Miller's Creek Reservoir | 46. Lake Limestone |
| 8. Fort Phantom Hill Reservoir | 47. Lake Brownwood |
| 9. Lake Stamford | 48. Wright Patman Lake |
| 10. Lake J. B. Thomas | 49. Lake Cypress Springs |
| 11. Lake Colorado City | 50. Lake Bob Sandlin |
| 12. Champion Creek Reservoir | 51. Lake O' the Pines |
| 13. Hords Creek Lake | 52. Lake Fork Reservoir |
| 14. Lake Kickapoo | 53. Toledo Bend Reservoir |
| 15. Lake Arrowhead | 54. Lake Palestine |
| 16. Lake Texoma | 55. Lake Tyler |
| 17. Pat Mayse Lake | 56. Sam Rayburn Reservoir |
| 18. Cooper Lake | 57. B. A. Steinhagen Lake |
| 19. Lake Sulphur Springs | 58. Cedar Creek Reservoir |
| 20. Lake Tawakoni | 59. Lake Livingston |
| 21. Bridgeport Reservoir | 60. Lake Conroe |
| 22. Eagle Mountain Reservoir | 61. Red Bluff Reservoir |
| 23. Benbrook Lake | 62. E. V. Spence Reservoir |
| 24. Joe Pool Lake | 63. Twin Buttes Reservoir |
| 25. Ray Roberts Lake | 64. O. C. Fisher Lake |
| 26. Lewisville Lake | 65. O. H. Ivie Reservoir |
| 27. Grapevine Lake | 66. Lake Buchanan |
| 28. Lavon Lake | 67. Intl. Amistad Reservoir |
| 29. Lake Ray Hubbard | 68. Somerville Lake |
| 30. Richland-Chambers Creek Lake | 69. Lake Travis |
| 31. Navarro Mills Lake | 70. Canyon Lake |
| 32. Bardwell Lake | 71. Coletto Creek Reservoir |
| 33. Hubbard Creek Reservoir | 72. Medina Lake |
| 34. Lake Graham | 73. Lake Houston |
| 35. Possum Kingdom Lake | 74. Lake Texana |
| 36. Lake Palo Pinto | 75. Choke Canyon Reservoir |
| 37. Lake Granbury | 76. Lake Corpus Christi |
| 38. Lake Pat Cleburne | 77. Intl. Falcon Reservoir |
| 39. Whitney Lake | |

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage Late August 2003 (acre-feet) (%)	Change since Late July 2003 (acre-feet) (%)	Change since Late August 2002 (acre-feet) (%)
HIGH PLAINS					
Palo Duro Reservoir	1	60,900	3,580 6	-480 -1	-3,430 -6
Lake Meredith (Texas)	2	500,000	152,610 31	-13,040 -3	-53,990 -11
Lake Meredith (Texas and Oklahoma)	(2)	779,560	152,610 20	-13,040 -2	-53,990 -7
MacKenzie Reservoir	3	46,250	6,570 14	-330 -1	-660 -1
White River Lake	4	31,850	6,810 21	-800 -3	1,150 4
TOTAL		639,000	169,570 27	-14,650 -2	-56,930 -9
LOW ROLLING PLAINS					
Greenbelt Reservoir	5	58,200	22,250 38	-700 -1	180 0
Lake Kemp	6	319,600	191,340 60	-23,020 -7	-25,660 -8
Miller's Creek Reservoir	7	27,890	13,930 50	-930 -3	-2,720 -10
Fort Phantom Hill Reservoir	8	70,030	36,160 52	-3,000 -4	-12,490 -18
Lake Stamford	9	52,700	37,080 70	-1,030 -2	-5,720 -11
Lake J. B. Thomas	10	202,300	21,930 11	-50 0	1,460 1
Lake Colorado City	11	30,800	21,920 71	2,800 9	4,800 16
Champion Creek Reservoir	12	41,600	2,880 7	-120 0	390 1
Hords Creek Lake	13	8,600	1,940 23	-160 -2	-640 -7
TOTAL		811,720	349,430 43	-26,210 -3	-40,400 -5
NORTH CENTRAL					
Lake Kickapoo	14	106,000	69,780 66	-4,860 -5	-17,620 -17
Lake Arrowhead	15	262,100	133,310 51	-5,570 -2	-23,690 -9
Lake Texoma	16	2,722,300	2,349,850 86	-255,610 -9	-222,150 -8
Pat Mayse Lake	17	124,500	111,990 90	-3,020 -2	690 1
Cooper Lake	18	273,000	270,390 99	-2,610 -1	-2,610 -1
Lake Sulphur Springs	19	17,710	16,740 95	-500 -3	-130 -1
Lake Tawakoni	20	936,200	827,500 88	-26,300 -3	-16,200 -2
Bridgeport Reservoir	21	374,830	264,400 71	-25,400 -7	-34,600 -9
Eagle Mountain Reservoir	22	178,380	140,600 79	-2,400 -1	-8,200 -5
Benbrook Lake	23	88,200	68,680 78	-7,280 -8	-5,290 -6
Joe Pool Lake	24	175,800	171,960 98	-3,610 -2	-840 0
Ray Roberts Lake	25	798,760	756,130 95	-14,230 -2	-24,770 -3
Lewisville Lake	26	555,000	555,000 100	0 0	0 0
Grapevine Lake	27	187,700	166,430 89	-6,760 -4	-3,770 -2
Lavon Lake	28	443,800	368,900 83	-34,050 -8	-16,200 -4
Lake Ray Hubbard	29	413,420	373,900 90	-14,600 -4	5,000 1
Richland-Chambers Creek Lake	30	1,103,820	1,080,000 98	-23,820 -2	2,000 0
Navarro Mills Lake	31	55,810	50,230 90	-2,480 -4	-2,770 -5
Bardwell Lake	32	53,580	43,810 82	-2,350 -4	520 1
Hubbard Creek Reservoir	33	317,800	132,900 42	-7,100 -2	-22,500 -7
Lake Graham	34	45,000	25,390 56	-1,960 -4	-6,440 -14
Possum Kingdom Lake	35	551,820	461,700 84	-23,500 -4	-53,800 -10
Lake Palo Pinto	36	27,650	16,230 59	-1,050 -4	-2,740 -10
Lake Granbury	37	135,680	133,100 98	-200 0	-1,000 -1
Lake Pat Cleburne	38	25,300	22,090 87	-1,030 -4	-790 -3
Whitney Lake	39	622,800	440,980 71	-14,880 -2	-102,720 -16
Waco Lake	40	144,500	132,830 92	-7,170 -5	-10,070 -7
Proctor Lake	41	55,590	45,840 82	-4,590 -8	-6,330 -11
Belton Lake	42	434,500	416,800 96	-11,390 -3	-9,900 -2
Stillhouse Hollow Lake	43	226,060	221,130 98	-3,980 -2	-4,930 -2
Lake Georgetown	44	37,010	29,220 79	-3,280 -9	-7,790 -21
Granger Lake	45	54,280	49,960 92	-3,630 -7	-4,320 -8
Lake Limestone	46	215,750	200,100 93	-8,300 -4	-4,700 -2
Lake Brownwood	47	143,400	122,980 86	-5,540 -4	-4,120 -3
TOTAL		11,908,050	10,270,850 86	-533,050 -4	-612,780 -5

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage Late August 2003 (acre-feet) (%)	Change since Late July 2003 (acre-feet) (%)	Change since Late August 2002 (acre-feet) (%)
EAST					
Wright Patman Lake	48	142,700	142,700 100	0 0	0 0
Lake Cypress Springs	49	66,800	64,610 97	-860 -1	-1,580 -2
Lake Bob Sandlin	50	202,300	190,500 94	-3,900 -2	-6,000 -3
Lake O' the Pines	51	252,000	222,940 88	-7,220 -3	-23,960 -10
Lake Fork Reservoir	52	635,200	599,900 94	-13,300 -2	-35,300 -6
Toledo Bend Reservoir	53	4,472,900	3,791,000 85	-298,000 -7	38,000 1
Lake Palestine	54	411,300	386,460 94	-13,540 -3	460 0
Lake Tyler	55	73,700	73,700 100	0 0	0 0
Sam Rayburn Reservoir	56	2,876,300	2,597,060 90	-211,820 -7	164,060 6
B. A. Steinhagen Lake	57	94,200	90,750 96	-3,450 -4	42,810 45
Cedar Creek Reservoir	58	637,050	595,800 94	-20,300 -3	-11,600 -2
Lake Livingston	59	1,750,000	1,750,000 100	1,000 0	10,000 1
Lake Conroe	60	429,900	407,500 95	-3,300 -1	3,200 1
TOTAL		12,044,350	10,912,920 91	-574,690 -5	180,090 1
TRANS-PECOS					
Red Bluff Reservoir	61	307,000	52,010 17	-2,430 -1	9,880 3
TOTAL		307,000	52,010 17	-2,430 -1	9,880 3
EDWARDS PLATEAU					
E. V. Spence Reservoir	62	488,760	52,230 11	-3,220 -1	3,190 1
Twin Buttes Reservoir	63	177,800	4,200 2	-890 -1	-1,800 -1
O.C. Fisher Lake	64	119,200	3,520 3	-460 0	-550 0
O. H. Ivie Reservoir	65	554,340	198,000 36	-12,800 -2	-27,400 -5
Lake Buchanan	66	896,980	772,590 86	-52,350 -6	-50,610 -6
Amistad Reservoir (Texas)	67	1,771,030	936,000 53	-13,000 -1	274,000 15
Amistad Reservoir (Texas and Mexico)	(67)	3,151,300	1,184,000 38	5,000 0	329,000 10
TOTAL		4,008,110	1,966,540 49	-82,720 -2	196,830 5
SOUTH CENTRAL					
Somerville Lake	68	155,060	151,360 98	-3,700 -2	-3,440 -2
Lake Travis	69	1,144,100	972,250 85	-56,450 -5	-158,750 -14
Canyon Lake	70	385,600	376,050 98	-9,100 -2	-9,550 -2
Coletto Creek Reservoir	71	35,060	28,880 82	-2,350 -7	-950 -3
Medina Lake	72	254,000	241,700 95	-8,400 -3	-12,300 -5
TOTAL		1,973,820	1,770,240 90	-80,000 -4	-184,990 -9
UPPER COAST					
Lake Houston	73	128,860	128,860 100	0 0	0 0
Lake Texana	74	157,900	140,480 89	-15,470 -10	-12,020 -8
TOTAL		286,760	269,340 94	-15,470 -5	-12,020 -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 August 2003 (acre-feet) (%)	Change since Late July 2003 (acre-feet) (%)	Change since Late August 2002 (acre-feet) (%)
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SOUTHERN

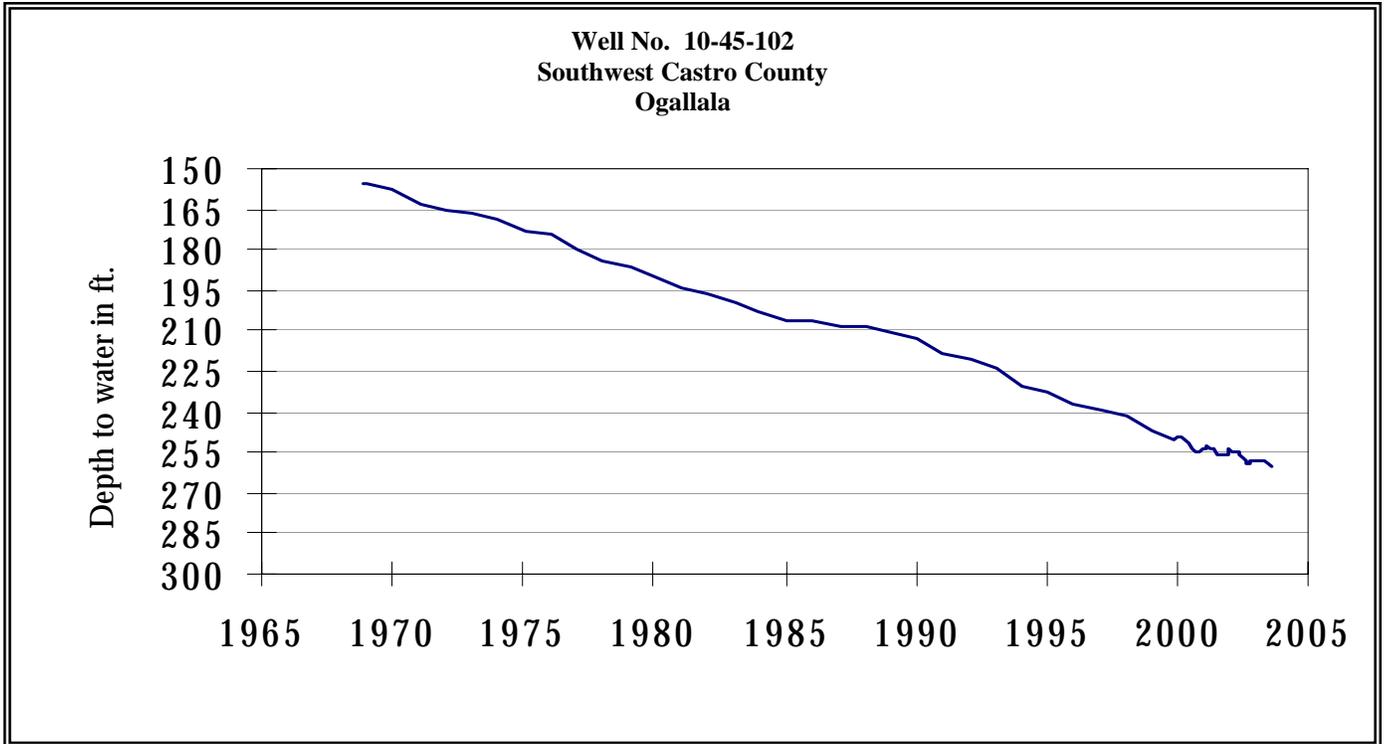
Choke Canyon Reservoir	75	695,260	678,000 98	-12,000 -2	-16,000 -2
Lake Corpus Christi	76	241,240	230,360 95	-10,880 -5	-8,340 -3
Falcon Reservoir (Texas)	77	1,555,120	214,000 14	-41,000 -3	49,000 3
Falcon Reservoir (Texas and Mexico)	(77)	2,653,290	402,000 15	-4,000 0	143,000 5
TOTAL		2,491,620	1,122,360 45	-63,880 -3	24,660 1
 STATE TOTAL		 34,470,430	 26,883,260 78	 -1,393,100 -4	 -495,660 -1

Note:

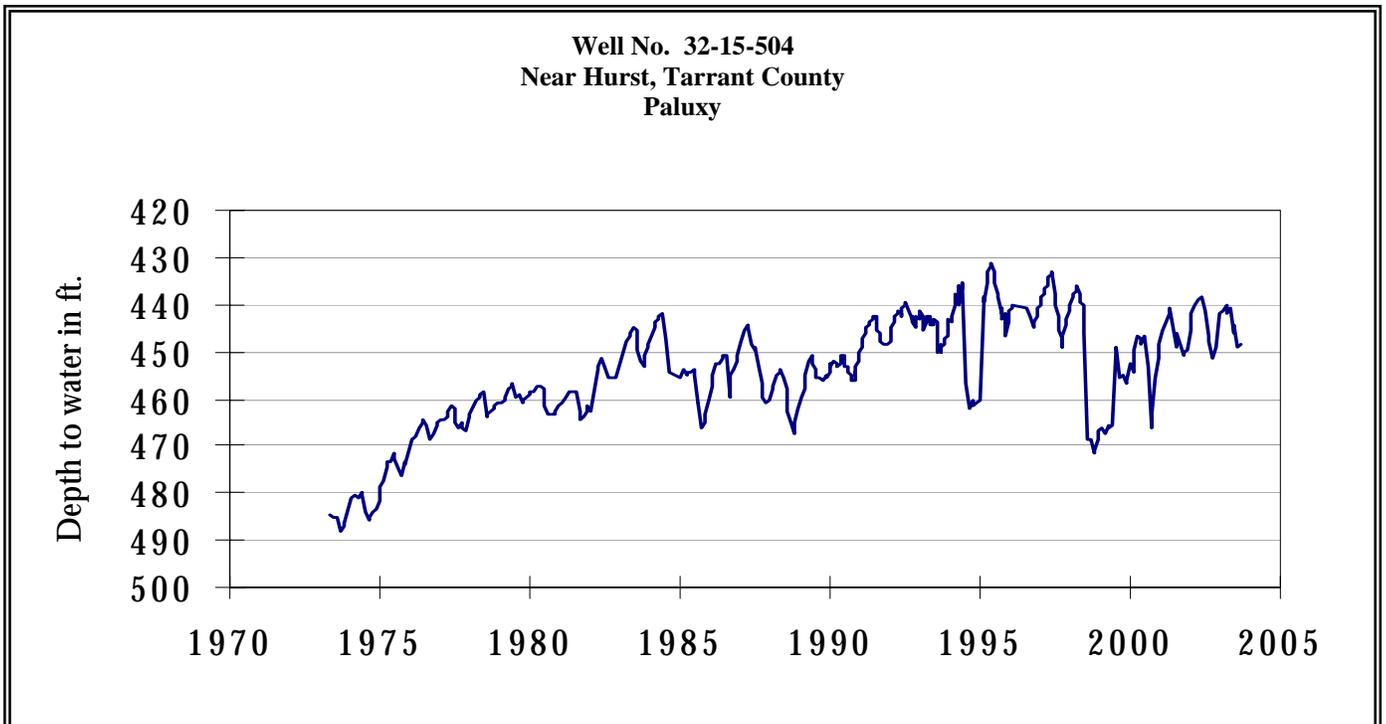
Conservation storage capacity is the space available to store water above the level of invert of lowest outlet works and below the level of top of conservation pool or normal maximum operating level. Conservation storage refers to the volume of water held within the conservation storage space. Not included is any water in flood control storage (above the top of conservation pool or normal maximum operating level), or any water in so called dead storage (in the bottom of the reservoir, below the invert of lowest outlet works and consequently not removable by gravity flow alone.) Percentage of conservation storage is based on the conservation storage capacity of the reservoir and the conservation storage in the reservoir for date shown. Percent change is given by % Change = 100 * (current conservation storage - past conservation storage)/conservation storage capacity.

Current data are based on elevations near end of month at 77 reservoirs that together represent 98 percent of the total conservation storage capacity of major Texas reservoirs (those with capacity of 5,000 acre-feet or more each). Figures in parentheses for Lake Meredith represent the total conservation storage excluding 58,014 acre-feet of dead storage and are not included in State total. Preliminary figures are shown for the United States' share of conservation storage in International Amistad and International Falcon Reservoirs; the estimates may be subject to revision on completion of international water accounting. Texas (United States' share) and Mexico and are not included in State total.

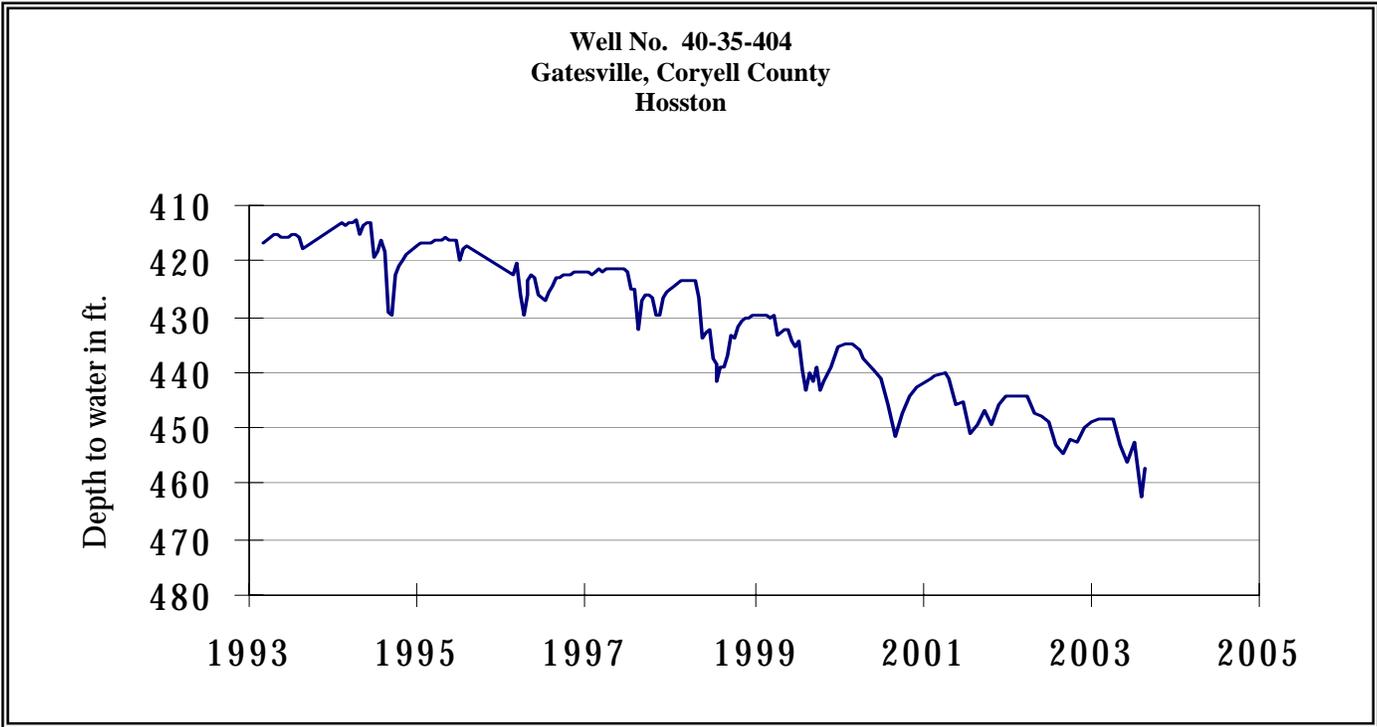
AUGUST GROUND WATER LEVELS IN OBSERVATION WELLS



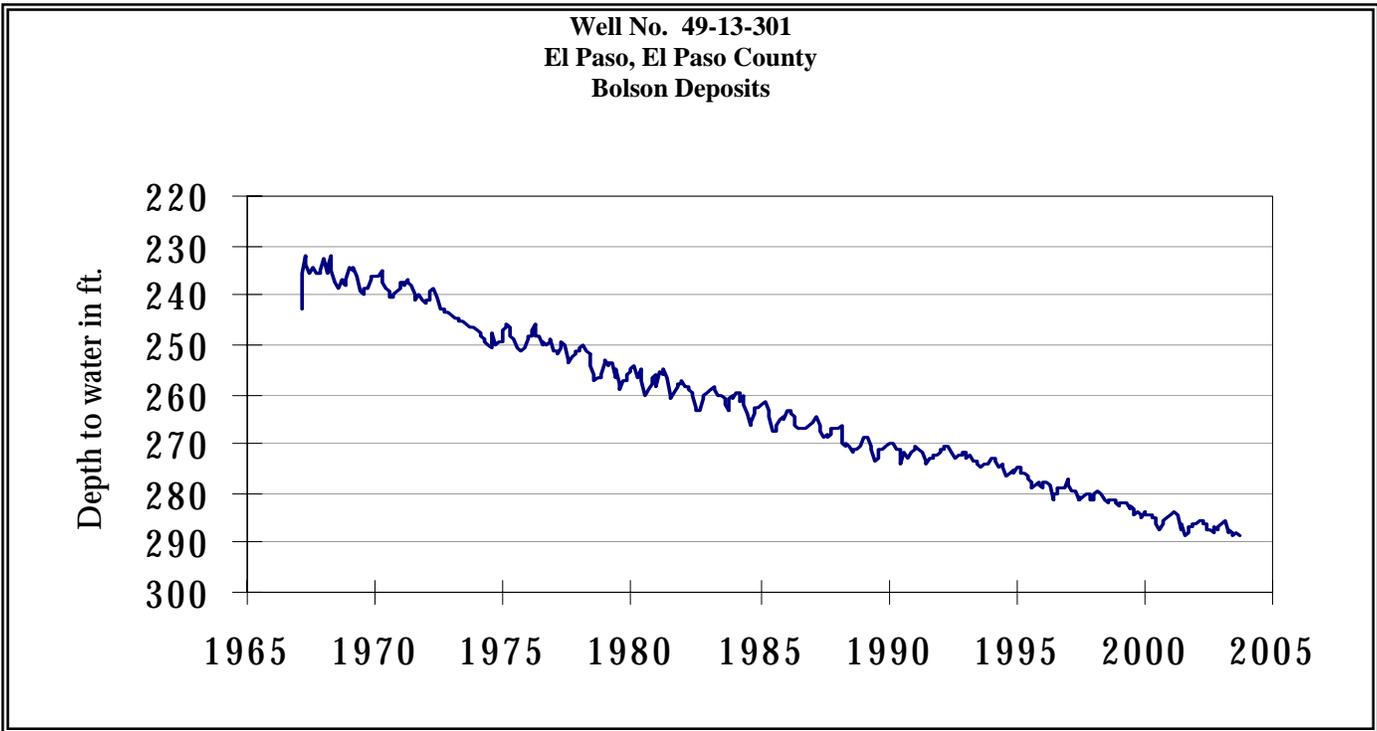
The late August water-level measurement in this Ogallala aquifer well, elevation 3,816 feet above sea level, was 260.60 feet below land surface. This measurement was 0.70 feet below last month's measurement, 1.87 feet below last year's measurement, and 104.60 feet below the initial measurement recorded in 1968.



The late August water-level measurement in this Paluxy Formation Trinity aquifer well, elevation 535 feet above sea level, was 448.30 feet below land surface. This measurement was 0.70 feet above last month's measurement, 0.25 feet below last year's measurement, and 54.91 feet below the initial measurement recorded in 1953.

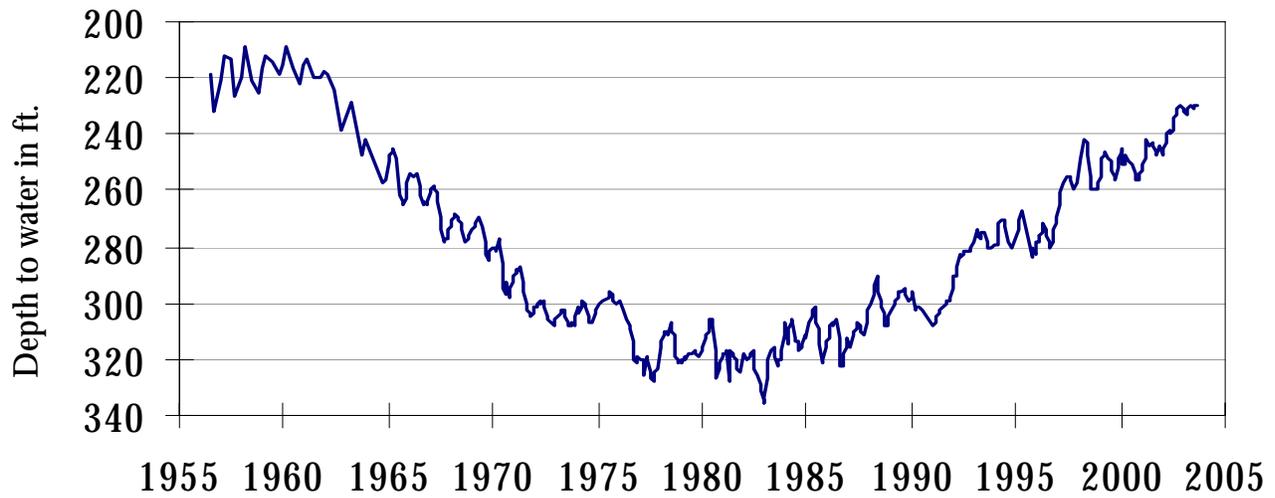


The late August water-level measurement in this Hosston Formation Trinity aquifer well, elevation 823 feet above sea level, was 457.40 feet below land surface. This measurement was 4.90 feet above last month's measurement, 2.59 feet below last year's measurement, and 165.40 feet below the initial measurement recorded in 1955.



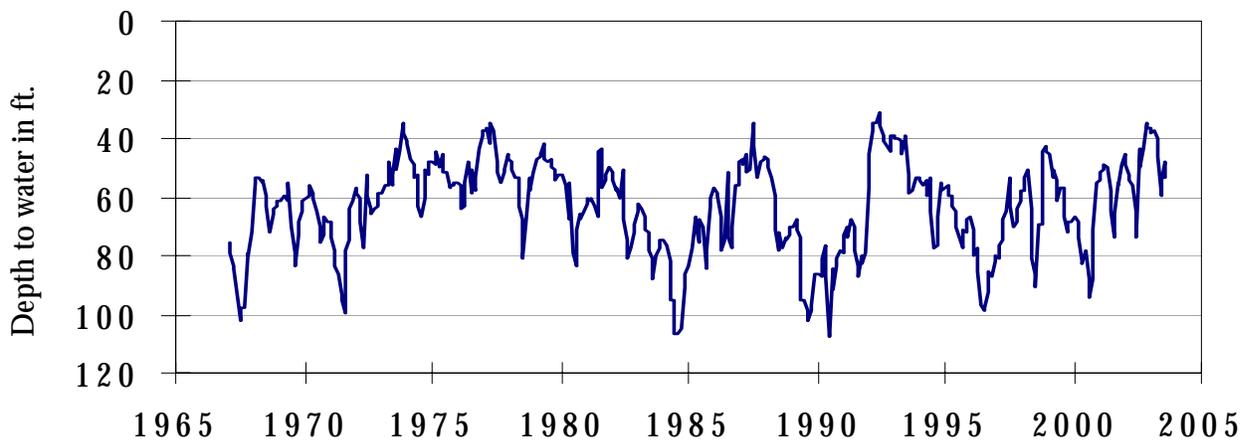
The late August water-level measurement in this Hueco Bolson aquifer well, elevation 3,882 feet above sea level, was 288.80 feet below land surface. This was 0.90 feet below last month's measurement, 1.06 feet below last year's measurement, and 56.90 feet below the initial measurement recorded in 1964.

**Well No. 65-14-409
Alief, Harris County
Evangeline**



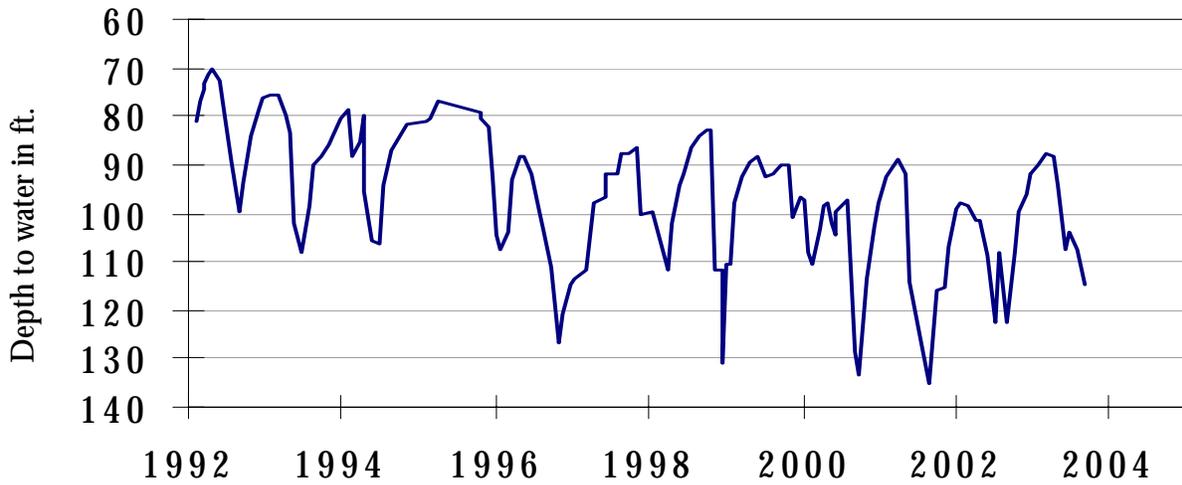
The late August water-level measurement in this Evangeline Formation Gulf Coast aquifer well, elevation 66 feet above sea level, was 229.90 feet below land surface. This was 0.30 feet below last month's measurement, 2.76 feet above last year's measurement, and 126.67 feet below the initial measurement recorded in 1947.

**Well No. 68-37-203 (J-17)
In San Antonio, Bexar County
Edwards and Associated Limestones**



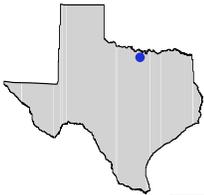
The late August water-level measurement in this Edwards (BFZ) aquifer well, elevation 731 feet above sea level, was 53.00 feet below land surface. This was 5.00 feet below last month's measurement, 3.37 feet below last year's measurement, and 6.62 feet above the initial measurement recorded in 1962.

**Well No. 68-60-912
Between Poteet and Pleasanton, Atascosa County
Carrizo**



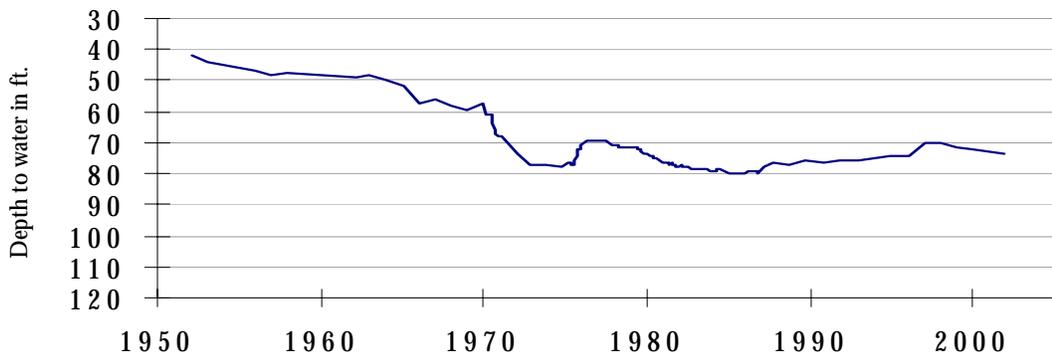
The late August water-level measurement in this Carrizo aquifer well, elevation 446 feet above sea level, was 114.92 feet below land surface. This measurement was 7.35 feet below last month's measurement, 7.60 feet above last year's measurement, and 33.67 feet below the initial measurement recorded in 1965.

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.

**Well No. 13-46-504
Wilbarger County**



This 120 ft. observation well, located 12 miles north of the city of Vernon at an elevation of 1,409 feet above sea level, was completed in the Seymour aquifer. Aquifer management issues include prevention of overuse and water quality since additional surface water supplies are unlikely in the Seymour area.

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