

Texas Water Development Board



WATER Conditions

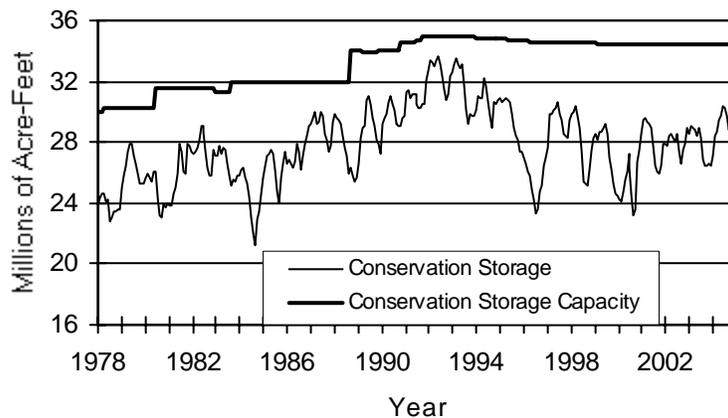
RESERVOIR STORAGE

October 2004

Near the end of October, the 77 reservoirs monitored for this report held 29.2 million acre-feet in conservation storage, or 85 percent of the conservation storage capacity of the state's major reservoirs. Statewide total storage is above normal for this time of year. Storage increased during the month by 389,000 acre-feet (1% of conservation storage capacity). Compared to the previous year, storage is greater, up 2.78 million acre-feet (8%).

Storage is near capacity in the North Central (90%), East (91%), Upper Coast (95%), and South Central (98%) Regions, while the High Plains (28%) and Trans-Pecos (29%) Regions remained lower than one-third. Storage is at 100% in 15 reservoirs, and Texas share of the Amistad has exceeded its capacity to reach 115%. Compared to this time last year, Upper Coast has a decrease in storage (-4%), while all other regions have increases in storage with the greatest increase in Edwards Plateau Region (+22%).

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.

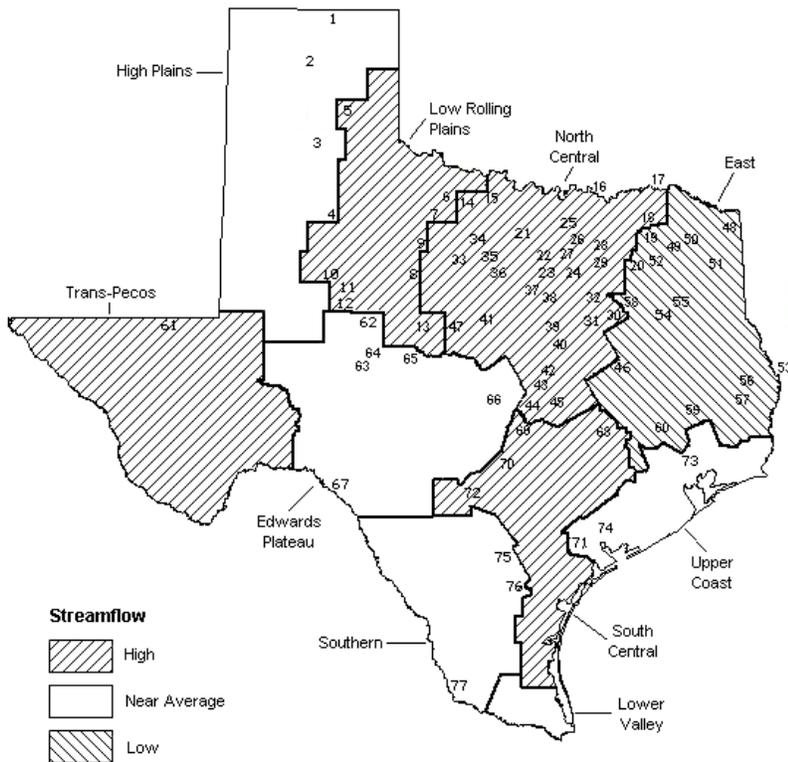
STREAMFLOW

Of 29 reporting index stations in October, computed 30-day mean flows are very high (0% - 5% exceedance) at 2 stations, high (5% - 30% exceedance) at 13 stations, near normal (30% - 70% exceedance) at 9 stations, and low (70 - 95%) at 5 stations. In comparison to September, flows have increased at 23 index stations and decreased at 6 stations.

On a regional basis, flows in October have been very high in Trans-Pecos Region, high in Low Rolling Plains, North Central, and South Central Regions, low in East Texas Region, and near normal everywhere else.

OCTOBER 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	Conservation	Change since		Change since		
		Storage Capacity (acre-feet)	Storage Late Oct. 2004 (acre-feet) (%)	Late September 2004 (acre-feet) (%)	Late October 2003 (acre-feet) (%)			
HIGH PLAINS								
Palo Duro Reservoir	1	60,900	4,490	7	-390	-1	1,350	2
Lake Meredith (Texas)	2	500,000	155,990	31	4,790	1	7,970	2
Lake Meredith (Texas and Oklahoma)	(2)	779,560	155,990	20	4,790	1	7,970	1
MacKenzie Reservoir	3	46,250	8,840	19	1,620	4	2,660	6
White River Lake	4	31,850	6,990	22	290	1	1,030	3
TOTAL		639,000	176,310	28	6,310	1	13,010	2
LOW ROLLING PLAINS								
Greenbelt Reservoir	5	58,200	22,250	38	160	0	-1,740	-3
Lake Kemp	6	319,600	186,930	58	7,190	2	12,500	4
Miller's Creek Reservoir	7	27,890	14,420	52	-220	-1	1,820	7
Fort Phantom Hill Reservoir	8	70,030	46,450	66	8,360	12	13,830	20
Lake Stamford	9	52,700	29,350	56	-240	0	-4,380	-8
Lake J. B. Thomas	10	202,300	29,520	15	2,720	1	7,630	4
Lake Colorado City	11	30,800	23,150	75	1,870	6	2,080	7
Champion Creek Reservoir	12	41,600	4,430	11	130	0	880	2
Hords Creek Lake	13	8,600	3,340	39	40	0	730	8
TOTAL		811,720	359,840	44	20,010	2	33,350	4
NORTH CENTRAL								
Lake Kickapoo	14	106,000	64,800	61	-780	-1	630	1
Lake Arrowhead	15	262,100	148,790	57	1,560	1	24,900	10
Lake Texoma	16	2,722,300	2,419,310	89	-28,880	-1	145,310	5
Pat Mayse Lake	17	124,500	109,320	88	170	0	3,490	3
Cooper Lake	18	273,000	159,740	59	-7,840	-3	-79,830	-29
Lake Sulphur Springs	19	17,710	15,700	89	110	1	-230	-1
Lake Tawakoni	20	936,200	844,900	90	-3,300	0	48,600	5
Bridgeport Reservoir	21	374,830	321,100	86	-10,000	-3	77,500	21
Eagle Mountain Reservoir	22	178,380	161,900	91	5,600	3	24,200	14
Benbrook Lake	23	88,200	76,200	86	3,330	4	4,060	5
Joe Pool Lake	24	175,800	175,800	100	300	0	0	0
Ray Roberts Lake	25	798,760	793,690	99	8,510	1	56,400	7
Lewisville Lake	26	555,000	555,000	100	0	0	39,250	7
Grapevine Lake	27	187,700	180,320	96	4,760	3	18,700	10
Lavon Lake	28	443,800	391,600	88	-8,980	-2	50,910	11
Lake Ray Hubbard	29	413,420	372,500	90	600	0	23,800	6
Richland-Chambers Creek Lake	30	1,103,820	1,103,820	100	0	0	50,820	5
Navarro Mills Lake	31	55,810	55,810	100	2,420	4	5,340	10
Bardwell Lake	32	53,580	47,920	89	2,040	4	3,520	7
Hubbard Creek Reservoir	33	317,800	120,680	38	-160	0	-5,190	-2
Lake Graham	34	45,000	29,770	66	-150	0	6,320	14
Possum Kingdom Lake	35	551,820	541,000	98	14,900	3	94,800	17
Lake Palo Pinto	36	27,650	20,860	75	260	1	6,150	22
Lake Granbury	37	135,680	132,900	98	300	0	500	0
Lake Pat Cleburne	38	25,300	23,960	95	-510	-2	3,080	12
Whitney Lake	39	622,800	548,710	88	2,850	0	96,590	16
Waco Lake	40	144,500	144,500	100	0	0	0	0
Proctor Lake	41	55,590	55,140	99	-50	0	3,810	7
Belton Lake	42	434,500	434,500	100	0	0	290	0
Stillhouse Hollow Lake	43	226,060	226,060	100	1,400	1	5,180	2
Lake Georgetown	44	37,010	31,500	85	-260	-1	6,260	17
Granger Lake	45	54,280	54,280	100	0	0	7,670	14
Lake Limestone	46	215,750	207,100	96	4,120	2	3,200	1
Lake Brownwood	47	143,400	131,500	92	1,620	1	200	0
TOTAL		11,908,050	10,700,680	90	-6,060	0	726,230	6

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

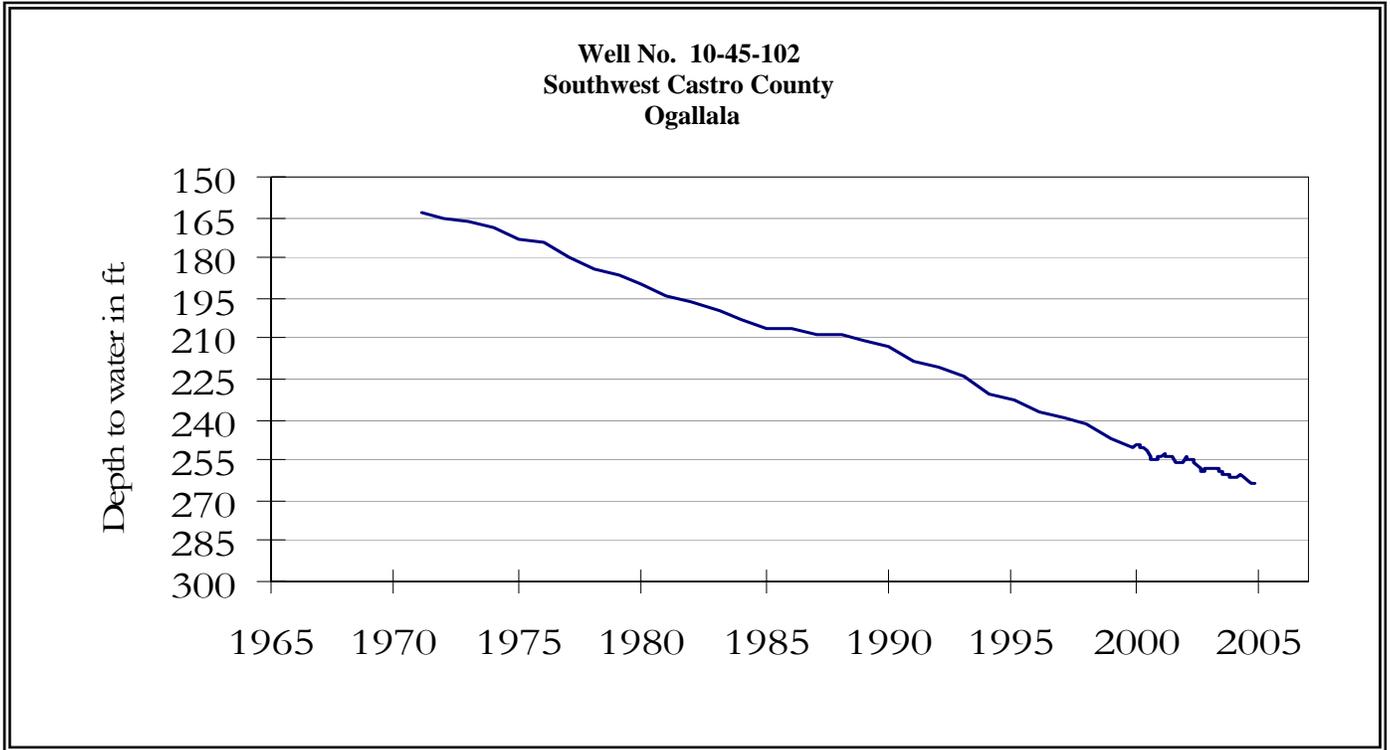
Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage Late Oct. 2004 (acre-feet) (%)	Change since Late September 2004 (acre-feet) (%)	Change since Late October 2003 (acre-feet) (%)
EAST					
Wright Patman Lake	48	142,700	142,700 100	0 0	0 0
Lake Cypress Springs	49	66,800	63,470 95	-630 -1	740 1
Lake Bob Sandlin	50	202,300	191,600 95	100 0	9,300 5
Lake O' the Pines	51	252,000	244,280 97	-7,110 -3	16,850 7
Lake Fork Reservoir	52	635,200	635,200 100	1,300 0	55,000 9
Toledo Bend Reservoir	53	4,472,900	3,882,000 87	71,000 2	397,000 9
Lake Palestine	54	411,300	394,980 96	7,530 2	21,540 5
Lake Tyler	55	73,700	73,700 100	1,130 2	3,880 5
Sam Rayburn Reservoir	56	2,876,300	2,507,860 87	-14,560 -1	198,420 7
B. A. Steinhagen Lake	57	94,200	88,150 94	-4,800 -5	260 0
Cedar Creek Reservoir	58	637,050	605,300 95	8,900 1	34,600 5
Lake Livingston	59	1,750,000	1,750,000 100	20,000 1	15,000 1
Lake Conroe	60	429,900	388,900 90	-4,100 -1	-26,400 -6
TOTAL		12,044,350	10,968,140 91	78,760 1	726,190 6
TRANS-PECOS					
Red Bluff Reservoir	61	307,000	89,870 29	14,810 5	39,280 13
TOTAL		307,000	89,870 29	14,810 5	39,280 13
EDWARDS PLATEAU					
E. V. Spence Reservoir	62	488,760	41,780 9	-760 0	-8,830 -2
Twin Buttes Reservoir	63	177,800	5,060 3	600 0	600 0
O.C. Fisher Lake	64	119,200	1,670 1	110 0	-1,590 -1
O. H. Ivie Reservoir	65	554,340	167,300 30	3,590 1	-38,010 -7
Lake Buchanan	66	896,980	868,350 97	15,320 2	28,360 3
Amistad Reservoir (Texas)	67	1,771,030	2,043,000 115	208,000 12	905,000 51
Amistad Reservoir (Texas and Mexico)	(67)	3,151,300	2,460,000 78	310,000 10	993,000 32
TOTAL		4,008,110	3,127,160 78	226,860 6	885,530 22
SOUTH CENTRAL					
Somerville Lake	68	155,060	155,060 100	3,480 2	2,030 1
Lake Travis	69	1,144,100	1,116,000 98	-3,600 0	145,300 13
Canyon Lake	70	385,600	385,600 100	6,830 2	8,070 2
Coletto Creek Reservoir	71	35,060	30,240 86	0 0	-2,040 -6
Medina Lake	72	254,000	254,000 100	0 0	17,400 7
TOTAL		1,973,820	1,940,900 98	6,710 0	170,760 9
UPPER COAST					
Lake Houston	73	128,860	119,500 93	-9,360 -7	-9,360 -7
Lake Texana	74	157,900	153,730 97	14,380 9	-1,410 -1
TOTAL		286,760	273,230 95	5,020 2	-10,770 -4
SOUTHERN					
Choke Canyon Reservoir	75	695,260	690,000 99	1,000 0	-2,000 0
Lake Corpus Christi	76	241,240	239,900 99	600 0	-1,340 -1
Falcon Reservoir (Texas)	77	1,555,120	681,000 44	35,000 2	195,000 13
Falcon Reservoir (Texas and Mexico)	(77)	2,653,290	1,751,000 66	86,000 3	671,000 25
TOTAL		2,491,620	1,610,900 65	36,600 1	191,660 8
STATE TOTAL		34,470,430	29,247,030 85	389,020 1	2,775,240 8

Note:

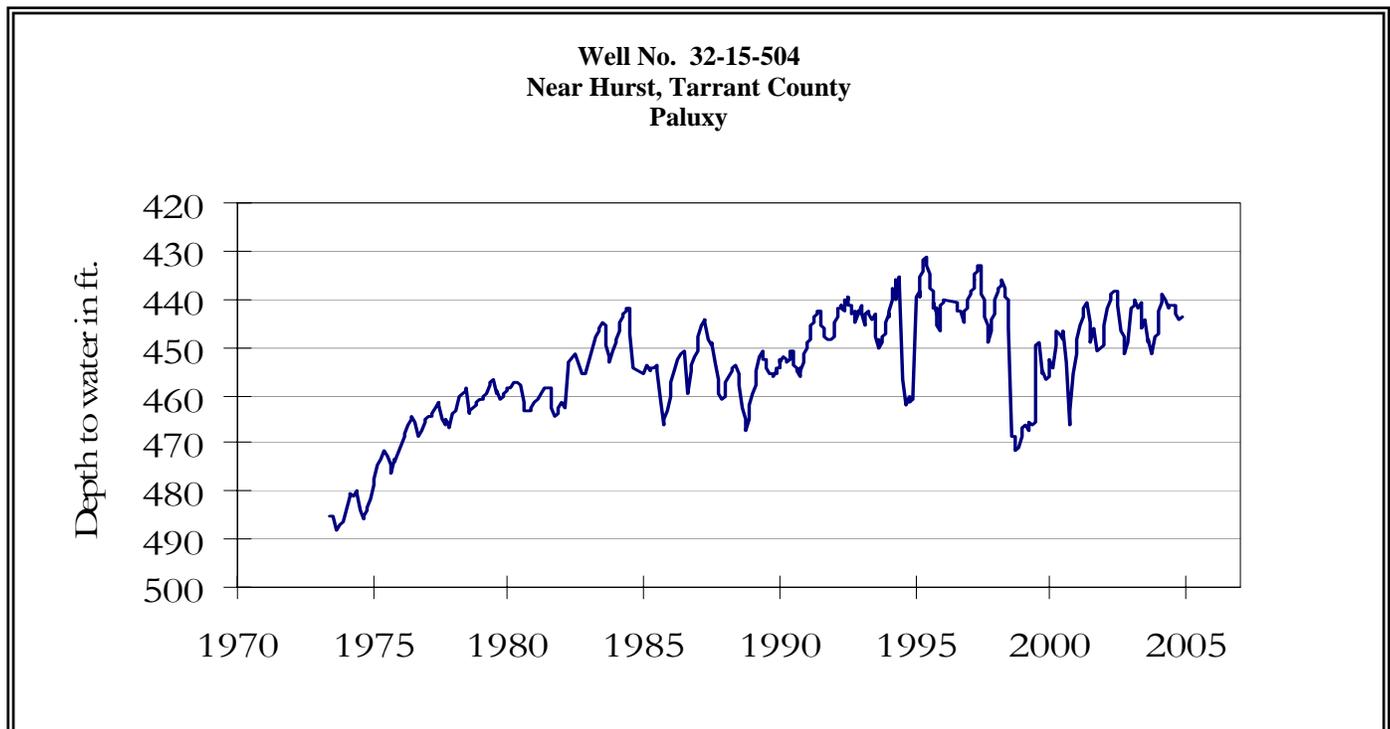
Conservation storage capacity is the space available to store water above the level of invert of lowest outlet works and below the level of top of conservation pool or normal maximum operating level. Conservation storage refers to the volume of water held within the conservation storage space. Not included 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 $\% \text{ Change} = 100 * (\text{current conservation storage} - \text{past conservation storage}) / \text{conservation storage capacity}$.

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). Preliminary figures are shown for the Texas' share of conservation storage in all reservoirs.

OCTOBER GROUND WATER LEVELS IN OBSERVATION WELLS

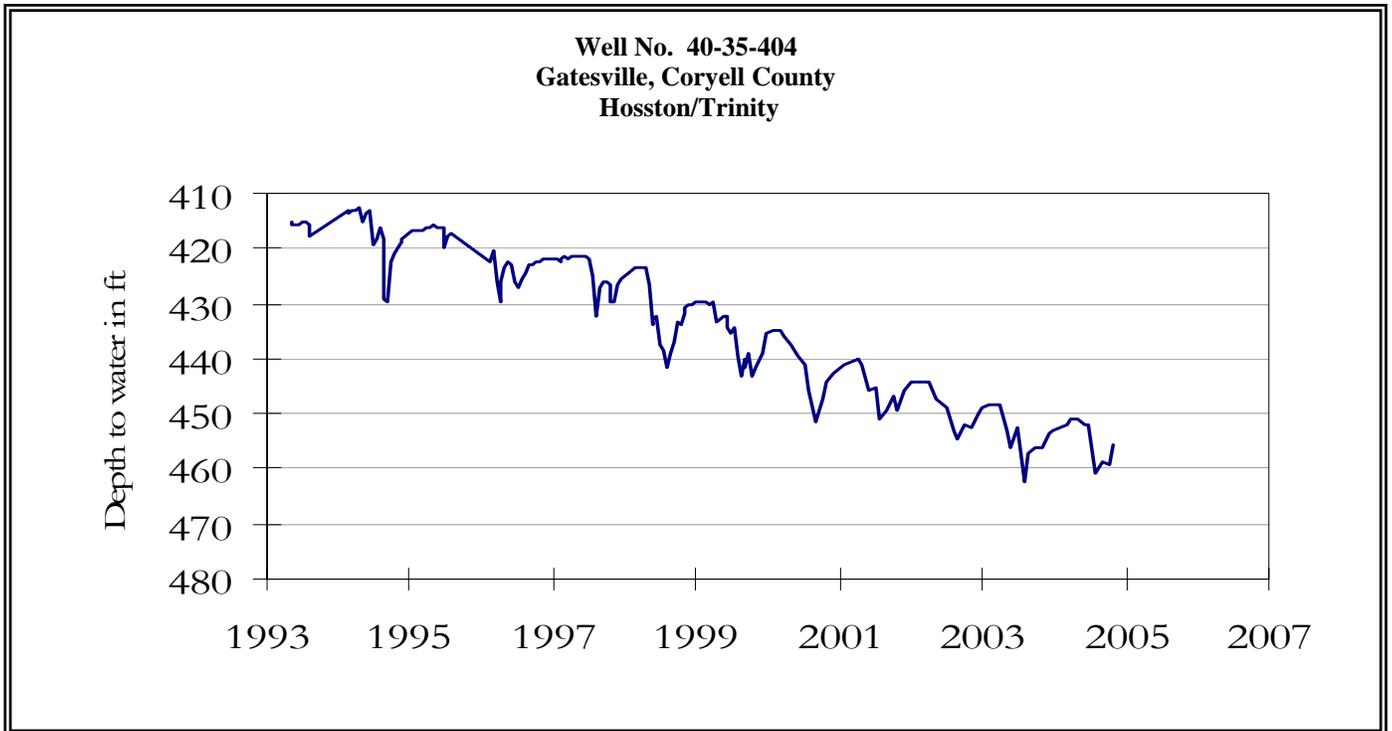


The late October water-level measurement in this Ogallala aquifer well, elevation 3,816 feet above sea level, was 263.77 feet below land surface. This measurement was 0.17 foot below last month's measurement, 2.77 feet below last year's measurement, and 107.77 feet below the initial measurement recorded in 1968.

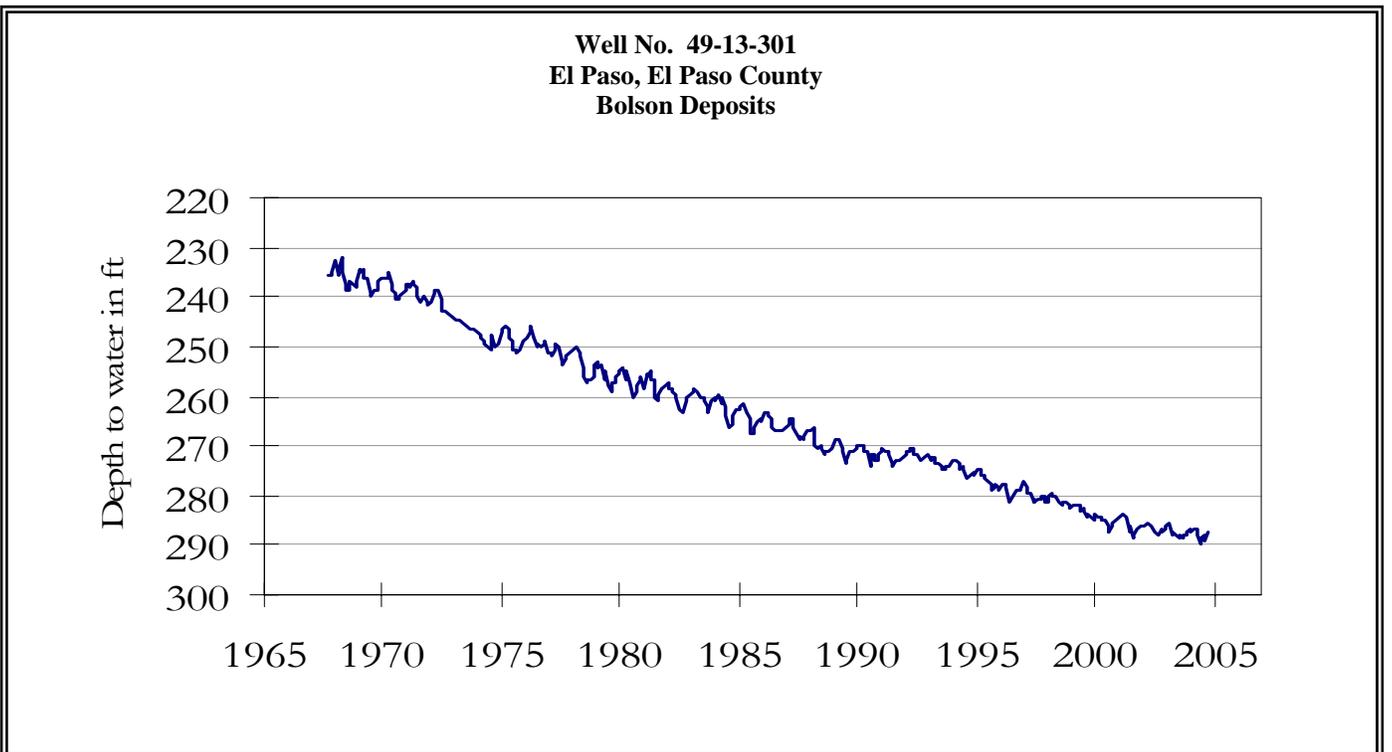


The late October water-level measurement in this Paluxy Formation Trinity aquifer well, elevation 535 feet above sea level, was 443.94 feet below land surface. This measurement was 0.26 foot above last month's

measurement, 3.96 feet above last year's measurement, and 50.55 feet below the initial measurement recorded in 1953.

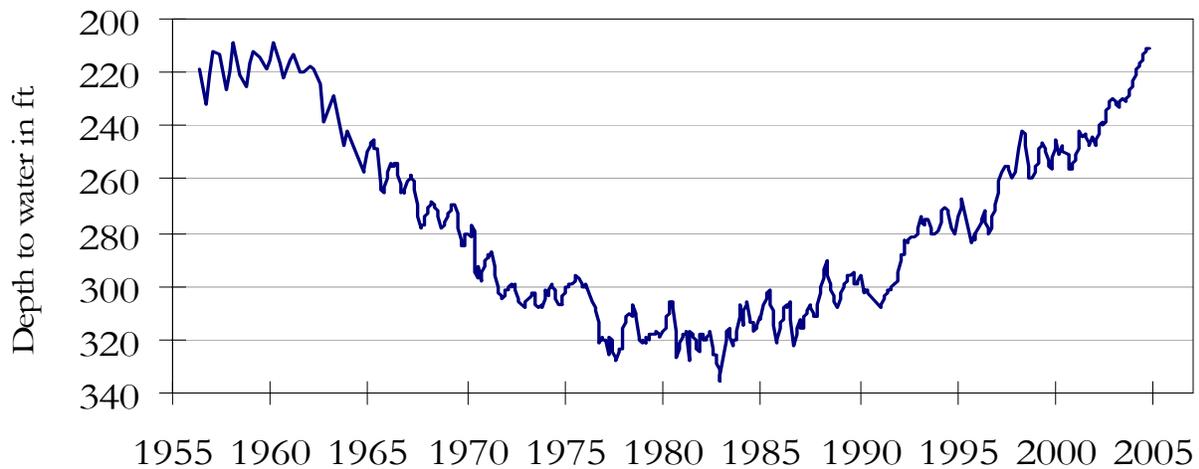


The late October water-level measurement in this Hosston Formation Trinity aquifer well, elevation 823 feet above sea level, was 455.57 feet below land surface. This water level was 3.83 feet above last month's measurement, 0.43 foot below last year's measurement, and 163.57 feet below the initial measurement recorded in 1955.



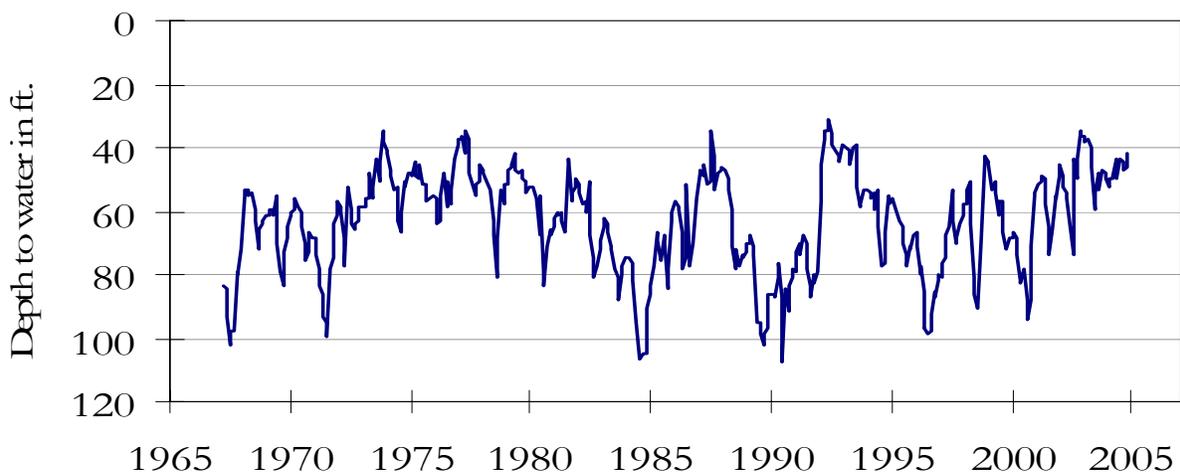
The late October water-level measurement in this Hueco Bolson aquifer well, elevation 3,882 feet above sea level, was 287.58 feet below land surface. This was 0.02 foot above last month's measurement, 0.12 foot above last year's measurement, and 55.68 feet below the initial measurement recorded in 1964.

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



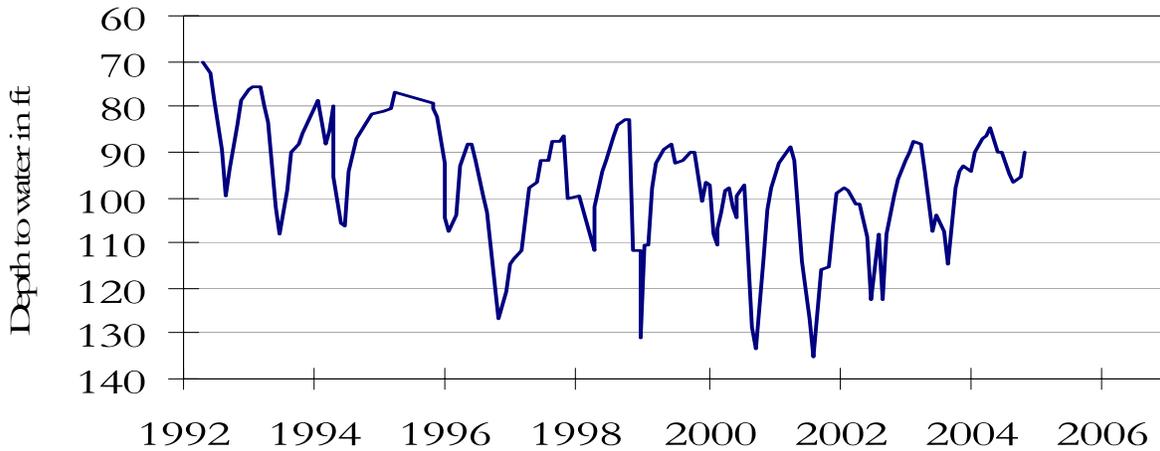
The late October water-level measurement in this Evangeline Formation Gulf Coast aquifer well, elevation 66 feet above sea level, was 210.66 feet below land surface. This was 0.24 foot above last month's measurement, 16.34 feet above last year's measurement, and 107.43 feet below the initial measurement recorded in 1947.

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



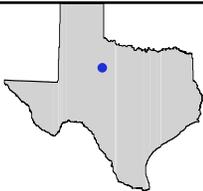
The late October water-level measurement in this Edwards (BFZ) aquifer well, elevation 731 feet above sea level, was 41.75 feet below land surface. This was 4.75 feet above last month's measurement, 6.65 feet above last year's measurement, and 17.87 feet above the initial measurement recorded in 1962.

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



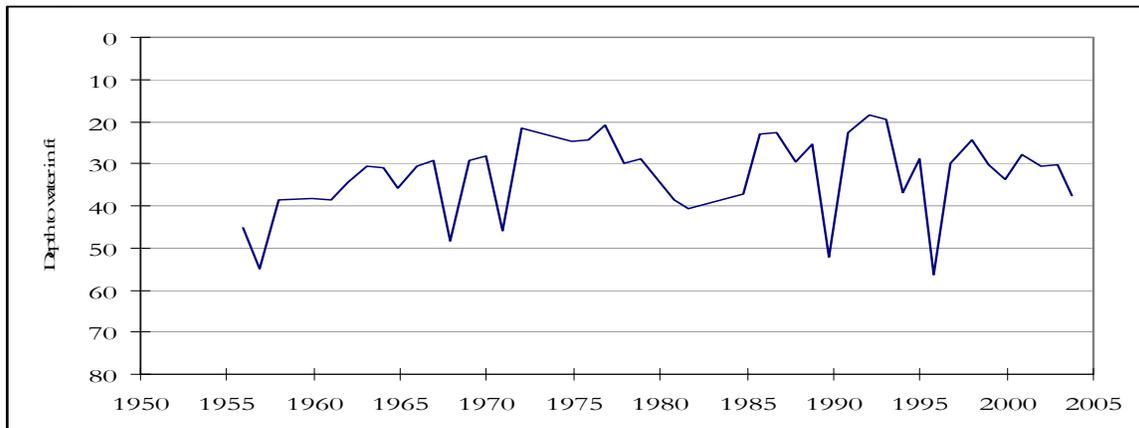
The late October water-level measurement in this Carrizo aquifer well, elevation 446 feet above sea level, was 90.26 feet below land surface. This measurement was 5.49 feet above last month's measurement, 3.85 feet above last year's measurement, and 9.01 feet below the initial measurement recorded in 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. 2934507
Mitchell County**



This water level observation well, used for livestock, located 4.5 miles northeast of Colorado City at an elevation of 1,267 feet ASL, was completed in the Dockum Aquifer. The location of the well is within the eastern outcrop area of the aquifer. The water quality diminishes in the deeper portions of the formation to the west. The graph reflects 10-20 feet of water level recovery from periods of drought beginning in the 1950's, through the 1990's.

October 31, 2004

Water levels increased in six key monitoring wells since the beginning of October, ranging from 0.02 feet in the El Paso Well No. 49-13-301, El Paso County (Bolson Deposits) to 5.49 feet in the Well No. 68-60-912 Between Poteet and Pleasanton, Atascosa County (Carrizo Aquifer), and decreased 0.17 feet in one key monitoring well in the Southwest Castro County well (Ogallala aquifer).

TEXAS WATER DEVELOPMENT BOARD

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