

Texas Water Development Board



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

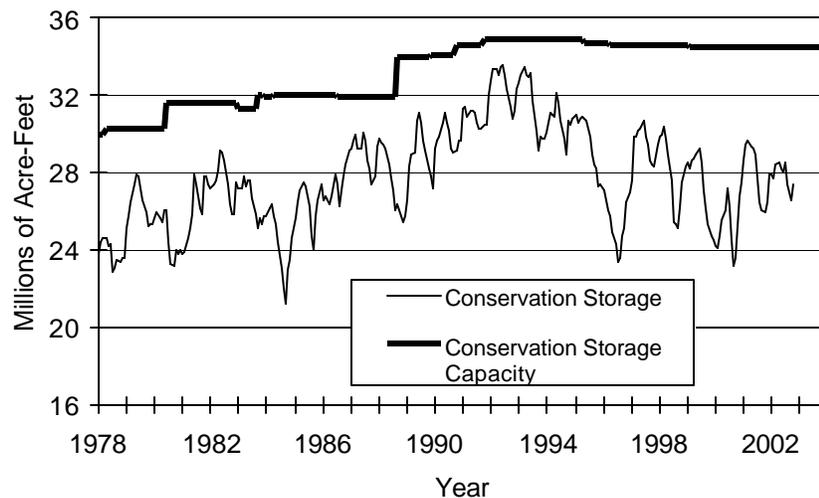
RESERVOIR STORAGE

October 2002

Near the end of October, the 77 reservoirs monitored for this report held 27.44 million acre-feet in conservation storage, or 79.6 percent of the conservation storage capacity of the State's major reservoirs. Statewide total storage is slightly below the median for this time of year. Storage increased for the month, up 0.90 million acre-feet (+2.6%). Compared to last year at this time, storage is up 1.44 million acre-feet (+4.3%).

Storage in the Upper Coast (100%) and South Central (98%) Regions are at or near capacity, while the High Plains (35%), Low Rolling Plains (49%), Trans-Pecos (15%), Edwards Plateau (47%) and Southern (50%) Regions all either remained at the same low level or increased slightly from last month. The North Central (91%) and East (88%) Regions both increased slightly. Storage is at 100% in 22 reservoirs, up 13 from last month. Recent and forecasted rains across much of Texas bode well for reservoirs in need of water.

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.

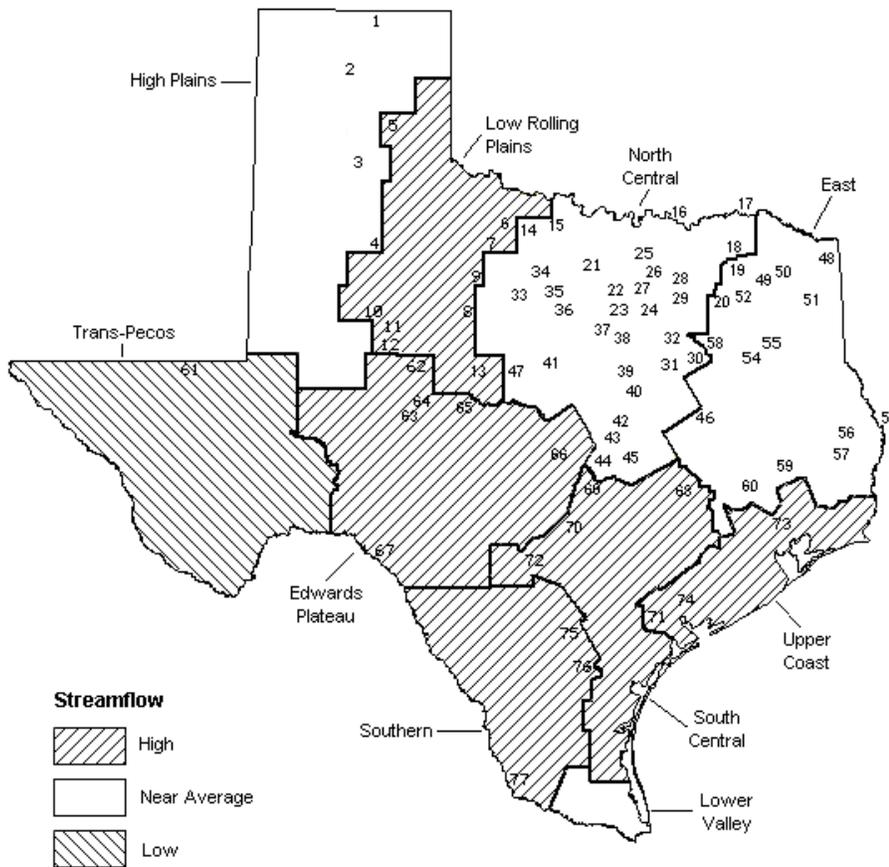
STREAMFLOW

Of 29 reporting index stations in October, computed 30-day mean flows were very high (0% - 5% exceedance) at 4 stations, high (5% - 30% exceedance) at 13 stations, near normal (30% - 70% exceedance) at 8 stations, and low (70% - 95% exceedance) at 4 stations. Compared to September, flows increased at 25 index stations and decreased at 4.

On a regional basis, flows in October were Low in the Trans-Pecos Region, normal in the High Plains, North Central and East Texas Regions, and high 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 October 2002 (acre-feet) (%)	Late September 2002 (acre-feet) (%)	Late October 2001 (acre-feet) (%)			
HIGH PLAINS								
Palo Duro Reservoir	1	60,900	3,840 6	-200 0	-3,380 -6			
Lake Meredith (Texas)	2	500,000	202,980 41	-1,620 0	-66,820 -13			
Lake Meredith (Texas and Oklahoma)	(2)	779,560	202,980 26	-1,620 0	-66,820 -9			
MacKenzie Reservoir	3	46,250	8,280 18	1,250 3	-490 -1			
White River Lake	4	31,850	5,900 19	720 2	-1,730 -5			
TOTAL		639,000	221,000 35	150 0	-72,420 -11			
LOW ROLLING PLAINS								
Greenbelt Reservoir	5	58,200	23,190 40	1,410 2	670 1			
Lake Kemp	6	319,600	224,000 70	18,000 6	106,700 33			
Miller's Creek Reservoir	7	27,890	15,630 56	-180 -1	2,930 11			
Fort Phantom Hill Reservoir	8	70,030	46,750 67	710 1	16,120 23			
Lake Stamford	9	52,700	40,990 78	300 1	25,840 49			
Lake J. B. Thomas	10	202,300	21,330 11	1,740 1	5,100 3			
Lake Colorado City	11	30,800	16,950 55	30 0	190 1			
Champion Creek Reservoir	12	41,600	2,320 6	-40 0	130 0			
Hords Creek Lake	13	8,600	2,630 31	130 2	-640 -7			
TOTAL		811,720	393,790 49	22,100 3	157,040 19			
NORTH CENTRAL								
Lake Kickapoo	14	106,000	83,280 79	-670 -1	7,480 7			
Lake Arrowhead	15	262,100	154,000 59	3,100 1	-4,600 -2			
Lake Texoma	16	2,722,300	2,540,700 93	50,700 2	-65,300 -2			
Pat Mayse Lake	17	124,500	122,110 98	13,310 11	4,010 3			
Cooper Lake	18	273,000	273,000 100	2,600 1	0 0			
Lake Sulphur Springs	19	17,710	17,710 100	1,390 8	6,400 36			
Lake Tawakoni	20	936,200	909,900 97	91,500 10	79,900 9			
Bridgeport Reservoir	21	374,830	283,900 76	-3,500 -1	-15,800 -4			
Eagle Mountain Reservoir	22	178,380	146,900 82	4,200 2	-900 -1			
Benbrook Lake	23	88,200	75,270 85	6,110 7	9,410 11			
Joe Pool Lake	24	175,800	175,800 100	7,000 4	200 0			
Ray Roberts Lake	25	798,760	786,650 98	17,750 2	28,550 4			
Lewisville Lake	26	555,000	555,000 100	0 0	26,900 5			
Grapevine Lake	27	187,700	169,520 90	7,020 4	25,520 14			
Lavon Lake	28	443,800	392,560 88	34,760 8	77,460 17			
Lake Ray Hubbard	29	413,420	410,100 99	52,800 13	30,800 7			
Richland-Chambers Creek Lake	30	1,103,820	1,048,000 95	-4,000 0	10,000 1			
Navarro Mills Lake	31	55,810	53,240 95	2,580 5	-2,570 -5			
Bardwell Lake	32	53,580	42,500 79	1,410 3	-2,920 -5			
Hubbard Creek Reservoir	33	317,800	152,800 48	800 0	28,800 9			
Lake Graham	34	45,000	30,460 68	-70 0	-4,420 -10			
Possum Kingdom Lake	35	551,820	481,600 87	-11,200 -2	26,200 5			
Lake Palo Pinto	36	27,650	23,990 87	6,450 23	7,930 29			
Lake Granbury	37	135,680	132,700 98	-900 -1	15,900 12			
Lake Pat Cleburne	38	25,300	20,920 83	-640 -3	780 3			
Whitney Lake	39	622,800	508,260 82	-7,040 -1	47,960 8			
Waco Lake	40	144,500	144,500 100	8,200 6	10,500 7			
Proctor Lake	41	55,590	55,590 100	6,740 12	17,420 31			
Belton Lake	42	434,500	429,420 99	11,620 3	120 0			
Stillhouse Hollow Lake	43	226,060	226,060 100	1,560 1	360 0			
Lake Georgetown	44	37,010	37,010 100	0 0	7,150 19			
Granger Lake	45	54,280	54,280 100	0 0	0 0			
Lake Limestone	46	215,750	214,600 99	15,800 7	11,500 5			
Lake Brownwood	47	143,400	132,820 93	9,520 7	23,720 17			
TOTAL		11,908,050	10,885,150 91	328,900 3	408,460 3			

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Name of Lake or Reservoir	No. on Map	Conservation	Conservation		Change since		Change since		
		Storage Capacity (acre-feet)	Storage Late October 2002 (acre-feet)	(%)	Late September 2002 (acre-feet)	(%)	Late October 2001 (acre-feet)	(%)	
EAST									
Wright Patman Lake	48	142,700	142,700	100	0	0	0	0	
Lake Cypress Springs	49	66,800	66,800	100	2,390	4	0	0	
Lake Bob Sandlin	50	202,300	202,300	100	8,800	4	0	0	
Lake O' the Pines	51	252,000	243,060	96	2,260	1	-8,940	-4	
Lake Fork Reservoir	52	635,200	635,200	100	6,800	1	0	0	
Toledo Bend Reservoir	53	4,472,900	3,639,000	81	109,000	2	516,000	12	
Lake Palestine	54	411,300	374,650	91	-450	0	-26,850	-7	
Lake Tyler	55	73,700	73,700	100	0	0	0	0	
Sam Rayburn Reservoir	56	2,876,300	2,324,360	81	46,360	2	-326,640	-11	
B. A. Steinhagen Lake	57	94,200	88,150	94	1,040	1	55,640	59	
Cedar Creek Reservoir	58	637,050	618,300	97	27,300	4	-13,000	-2	
Lake Livingston	59	1,750,000	1,750,000	100	20,000	1	18,000	1	
Lake Conroe	60	429,900	418,500	97	19,200	4	3,400	1	
TOTAL		12,044,350	10,576,720	88	242,700	2	217,610	2	
TRANS-PECOS									
Red Bluff Reservoir	61	307,000	44,930	15	1,730	1	14,560	5	
TOTAL		307,000	44,930	15	1,730	1	14,560	5	
EDWARDS PLATEAU									
E. V. Spence Reservoir	62	488,760	45,680	9	-770	0	-11,270	-2	
Twin Buttes Reservoir	63	177,800	6,000	3	110	0	-1,120	-1	
O.C. Fisher Lake	64	119,200	3,620	3	120	0	-500	0	
O. H. Ivie Reservoir	65	554,340	220,200	40	3,900	1	-42,300	-8	
Lake Buchanan	66	896,980	866,130	97	42,930	5	127,030	14	
Amistad Reservoir (Texas)	67	1,771,030	725,000	41	79,000	4	30,000	2	
Amistad Reservoir (Texas and Mexico)	(67)	3,151,300	950,000	30	109,000	3	68,000	2	
TOTAL		4,008,110	1,866,630	47	125,290	3	101,840	3	
SOUTH CENTRAL									
Somerville Lake	68	155,060	155,060	100	3,160	2	160	0	
Lake Travis	69	1,144,100	1,105,200	97	22,200	2	130,300	11	
Canyon Lake	70	385,600	385,600	100	5,900	2	1,500	0	
Coletto Creek Reservoir	71	35,060	31,300	89	-110	0	-250	-1	
Medina Lake	72	254,000	254,000	100	0	0	19,400	8	
TOTAL		1,973,820	1,931,160	98	31,150	2	151,110	8	
UPPER COAST									
Lake Houston	73	128,860	128,860	100	0	0	0	0	
Lake Texana	74	157,900	157,900	100	200	0	1,300	1	
TOTAL		286,760	286,760	100	200	0	1,300	0	

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

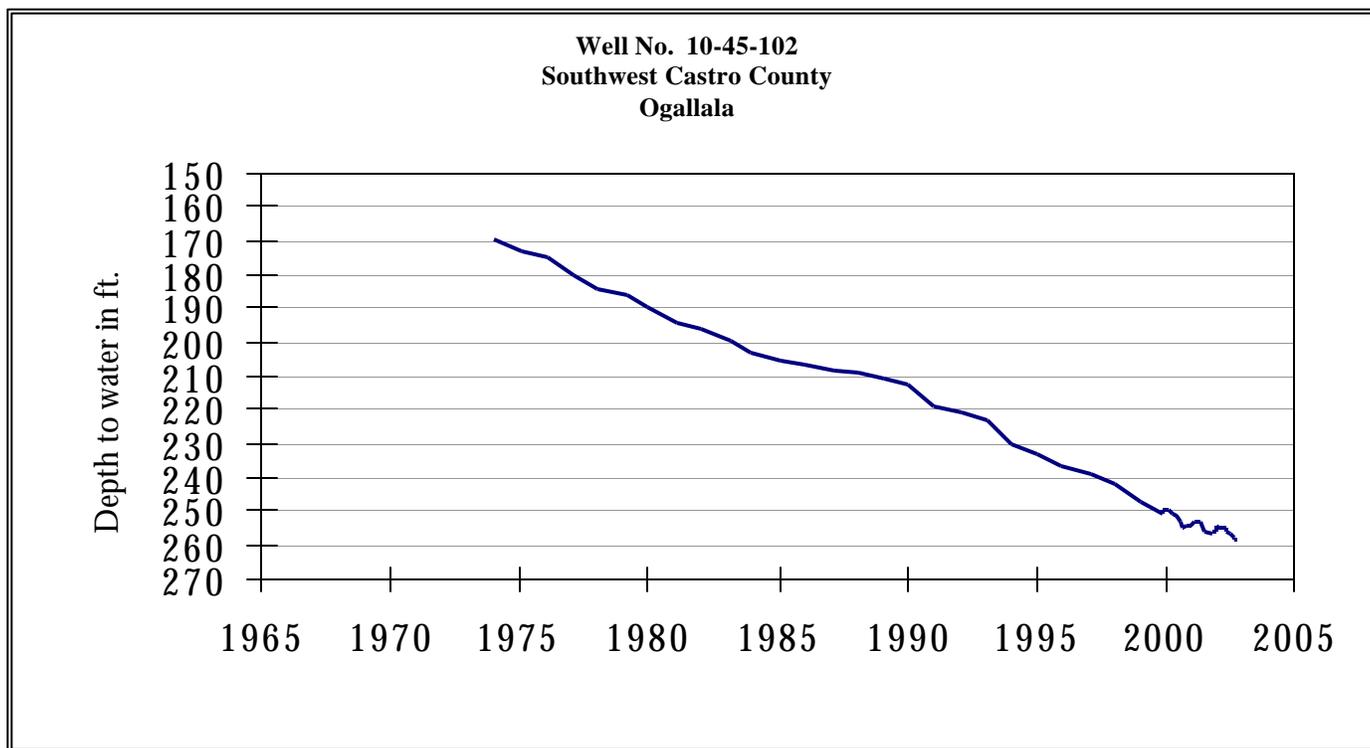
Name of Lake or Reservoir	No. on Map	Conservation	Conservation		Change since		Change since		
		Storage Capacity (acre-feet)	Storage Late October 2002 (acre-feet)	(%)	Late September 2002 (acre-feet)	(%)	Late October 2001 (acre-feet)	(%)	
SOUTHERN									
Choke Canyon Reservoir	75	695,260	695,260	100	6,260	1	469,260	67	
Lake Corpus Christi	76	241,240	240,460	100	-780	0	76,760	32	
Falcon Reservoir (Texas)	77	1,555,120	298,000	19	142,000	9	-31,000	-2	
Falcon Reservoir (Texas and Mexico)	(77)	2,653,290	660,000	25	291,000	11	208,000	8	
TOTAL		2,491,620	1,233,720	50	147,480	6	515,020	21	
STATE TOTAL		34,470,430	27,439,860	80	899,700	3	1,494,520	4	

Note:

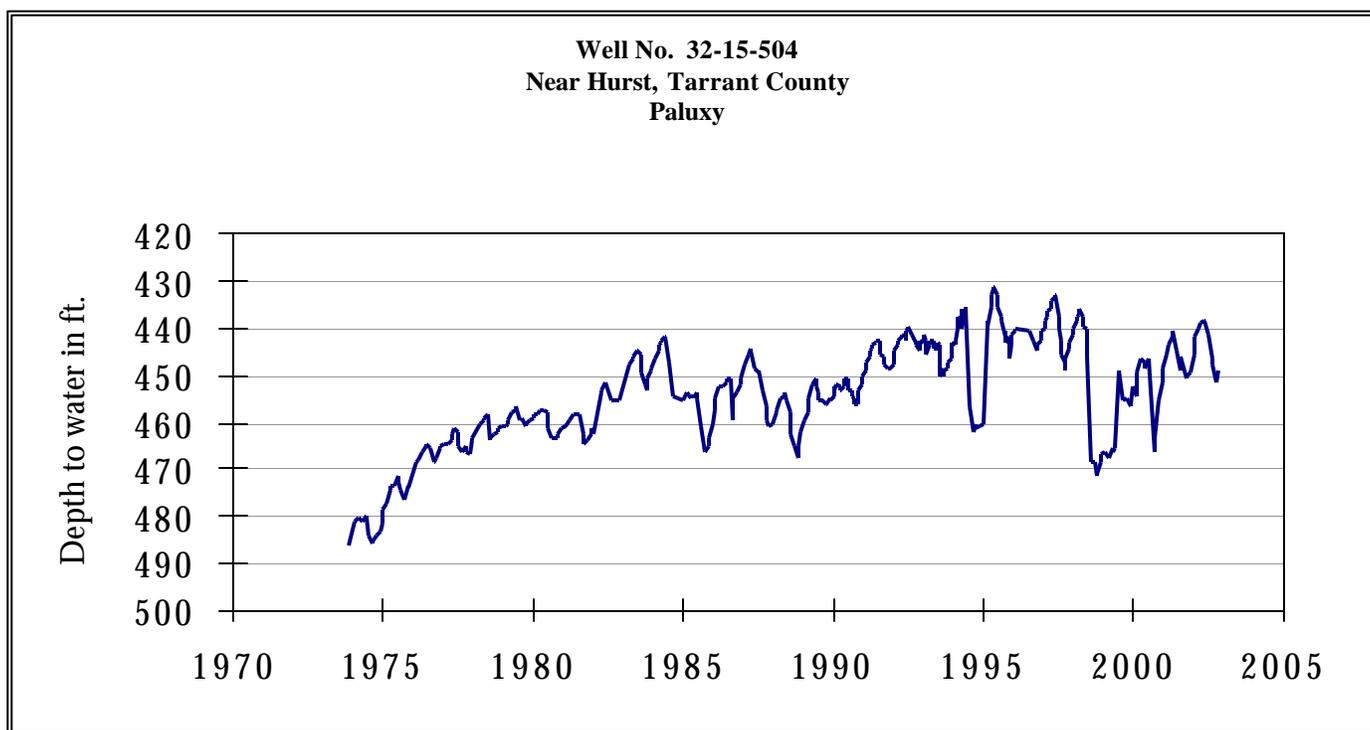
Conservation storage capacity is the space available to store water above the level of invert of lowest outlet works and below the level of top of conservation pool or normal maximum operating level. Conservation storage refers to the volume of water held within the conservation storage space. Not included 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.

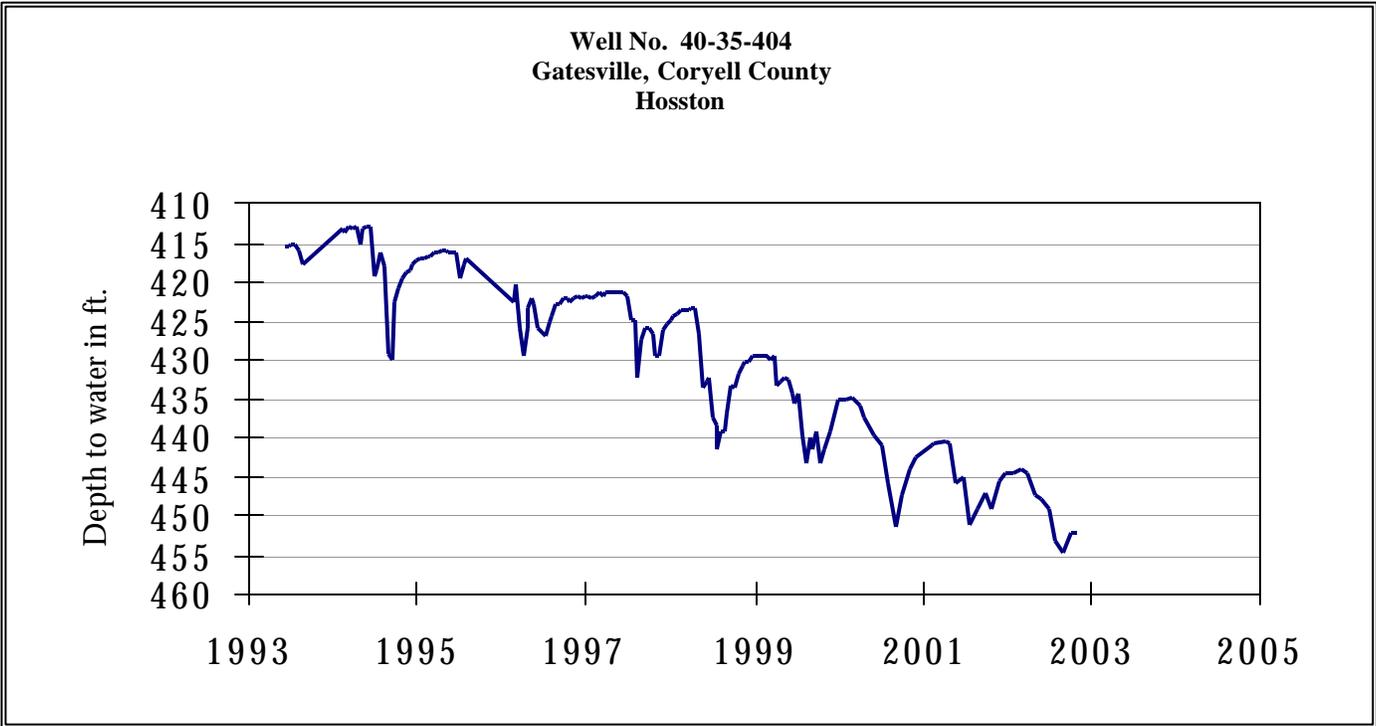
OCTOBER GROUND WATER LEVELS IN OBSERVATION WELLS



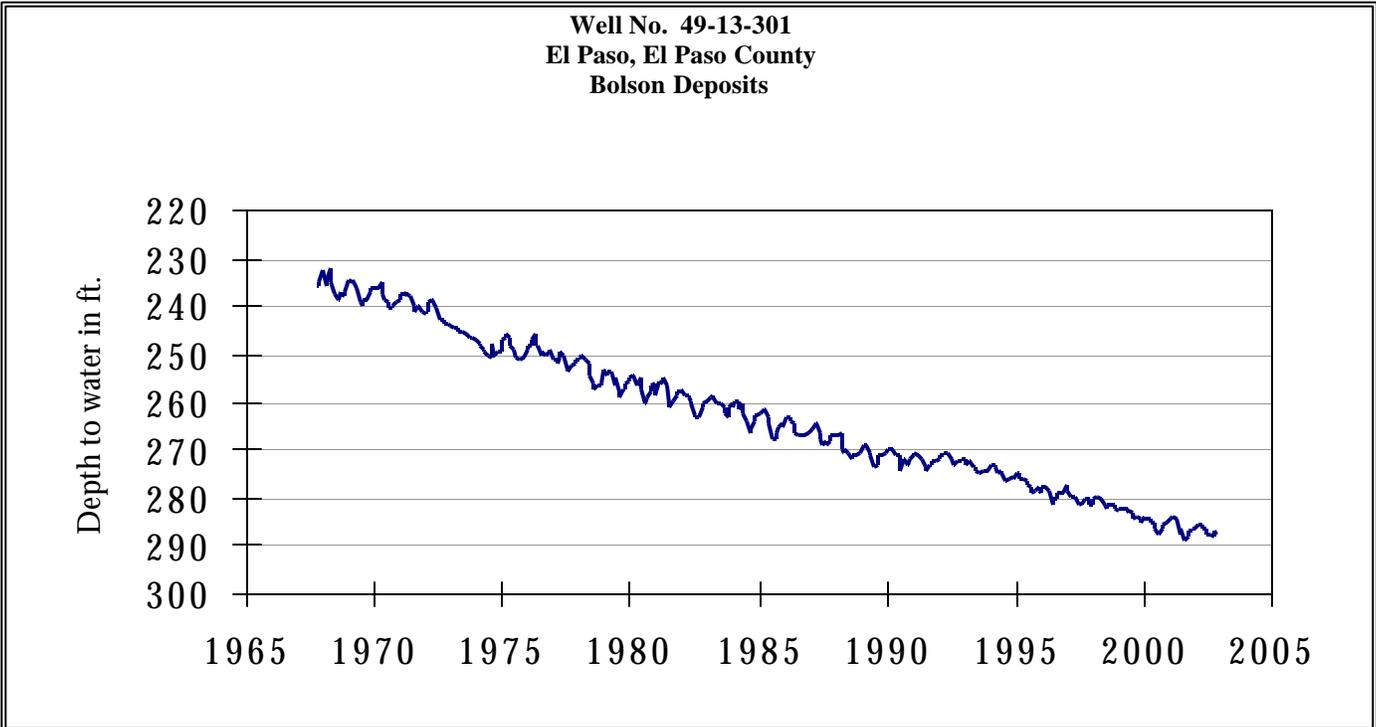
The late October water-level measurement in this Ogallala aquifer well, elevation 3,816 feet above sea level, was 258.61 feet below land surface. This measurement was 0.08 feet above last month's measurement, 2.58 feet below last year's measurement, and 102.61 feet below the initial measurement recorded in 1968.



The late October water-level measurement in this Paluxy Formation Trinity aquifer well, elevation 535 feet above sea level, was 449.10 feet below land surface. This measurement was 2.35 feet above last month's measurement, 1.38 feet above last year's measurement, and 55.71 feet below the initial measurement recorded in 1953.

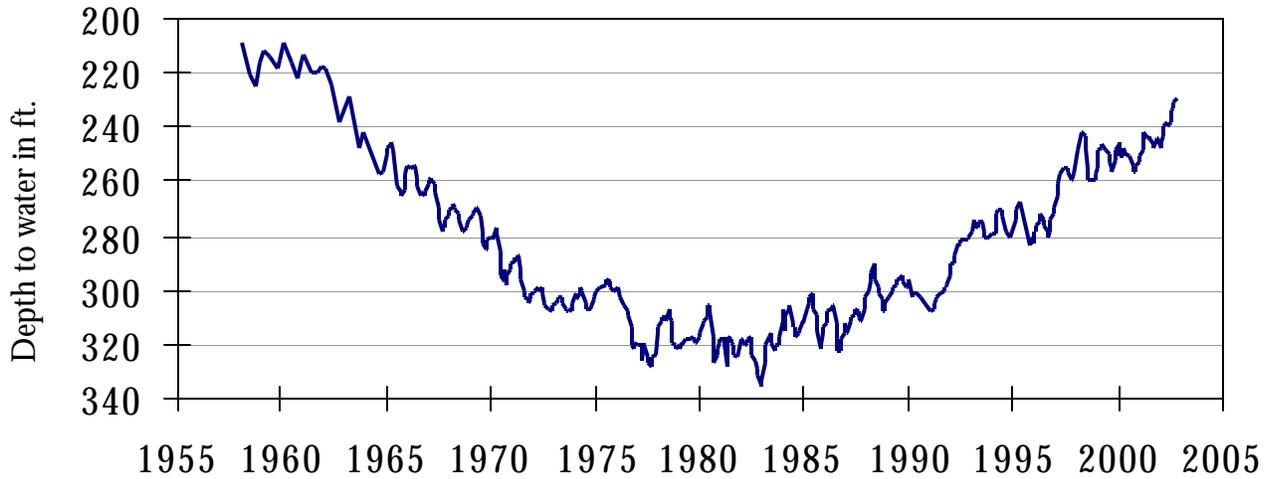


The late October water-level measurement in this Hosston Formation Trinity aquifer well, elevation 823 feet above sea level, was 452.33 feet below land surface. This measurement was 0.24 feet below last month's measurement, 3.08 feet below last year's measurement, and 160.33 feet below the initial measurement recorded in 1955.



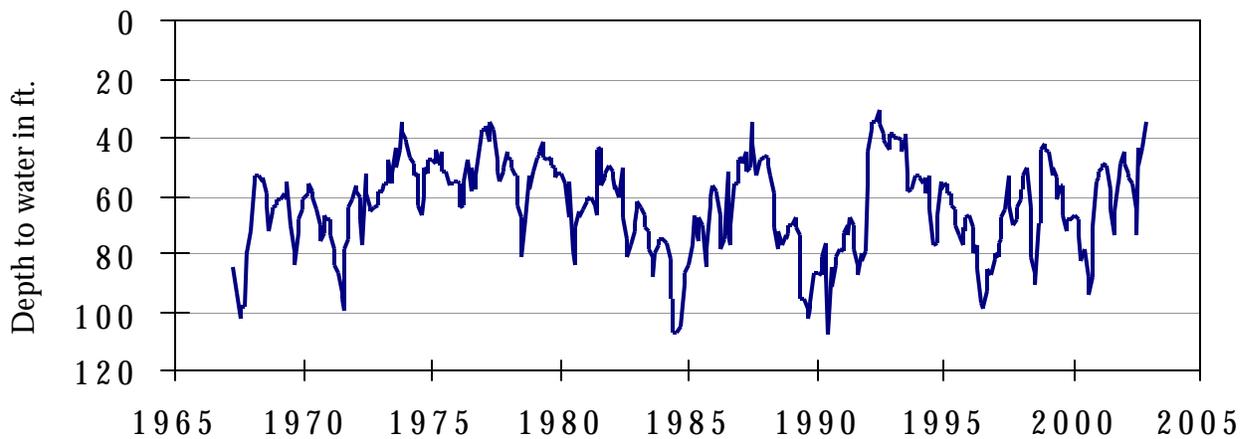
The late October water-level measurement in this Hueco Bolson aquifer well, elevation 3,882 feet above sea level, was 287.18 feet below land surface. This was 0.13 feet below last month's measurement, 0.49 feet below last year's measurement, and 55.28 feet below the initial measurement recorded in 1964.

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



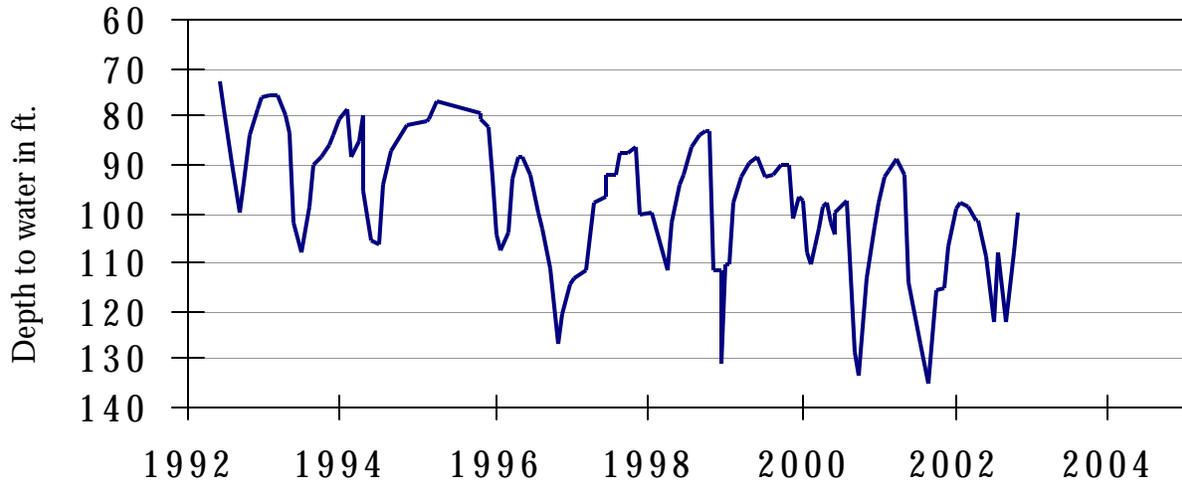
The late October water-level measurement in this Evangeline Formation Gulf Coast aquifer well, elevation 66 feet above sea level, was 229.92 feet below land surface. This was 1.38 feet above last month's measurement, 14.10 feet above last year's measurement, and 126.69 feet below the initial measurement 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 34.85 feet below land surface. This was 8.77 feet above last month's measurement, 20.82 feet above last year's measurement, and 24.77 feet above the initial measurement recorded in 1962.

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



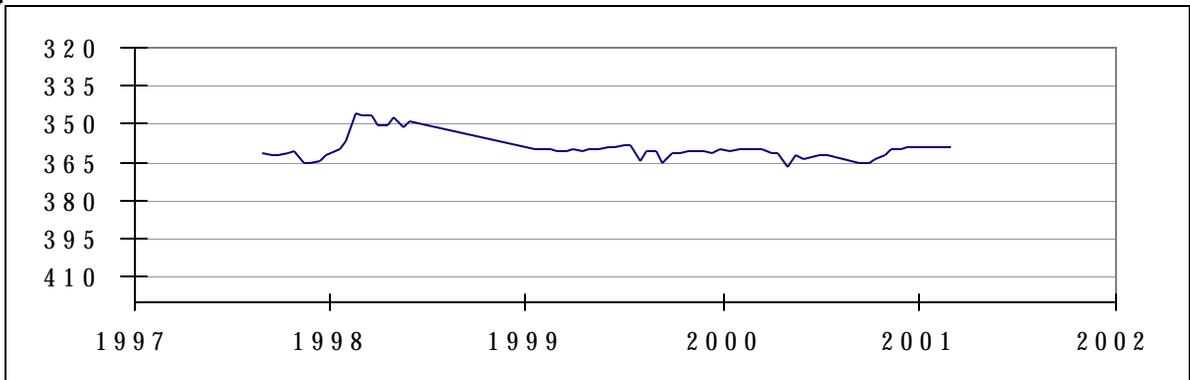
The late October water-level measurement in this Carrizo aquifer well, elevation 446 feet above sea level, was 99.76 feet below land surface. This measurement was 8.34 feet above last month's measurement, 15.86 feet above last year's measurement, and 18.51 feet below the initial measurement recorded 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. 5423217
Crockett County**



This 440 ft. deep recorder well, located within the city limits of Ozona, at an elevation of 2,440 feet above sea level, was completed in the Edwards-Trinity (Plateau) aquifer. Water levels have not been influenced by pumpage from the aquifer, and therefore, have remained fairly constant and fluctuate mainly with seasonal precipitation.

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