

Texas Water Development Board

WATER Conditions

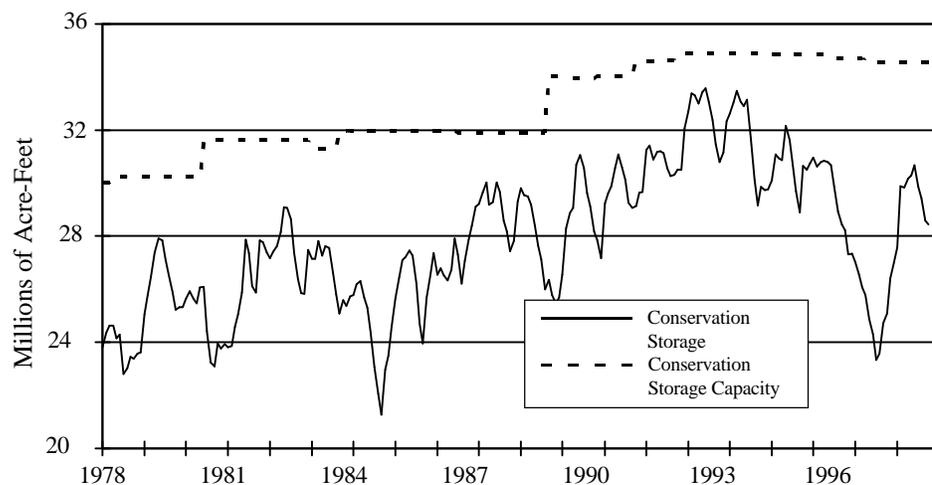
RESERVOIR STORAGE

November 1997

Near the end of October, the 77 reservoirs monitored for this report held 28,447,940 acre-feet in conservation storage. This was 82 percent of the conservation storage capacity of the State's major reservoirs. Compared to last month, storage has decreased 123,880 acre-feet. Compared to this month last year, storage has increased 3,362,400 acre-feet.

Of the monitored reservoirs, 13 held 100 percent or more of their conservation storage capacities near the end of October. Lakes Texoma, Graham, Granbury, Tyler, Cedar Creek, Livingston, Coletto Creek, Houston, and Texana were full and spilling. An additional amount of water (acre-feet) was contained in the flood storage pool in each of the reservoirs as follows: Granger, 660; Patman, 50,210; Lake O' the Pines, 3,180, and Somerville, 460.

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.

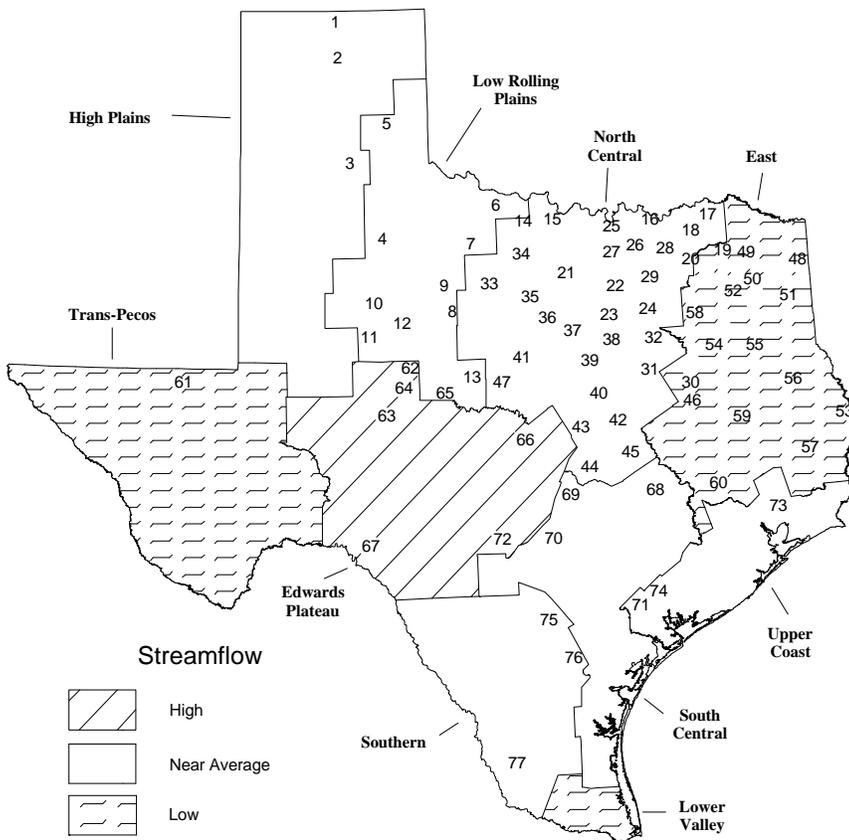
STREAMFLOW

Streamflow conditions across Texas ranged from below-normal to above-normal during the month of October. There were scattered thunderstorms throughout southeast Texas toward the middle of the month. Extensive thunderstorms early in October resulted in small increases at Ray Hubbard, Eagle Mountain, Pat Cleburne, and Squaw Creek reservoirs. The rest of the state received normal to below average precipitation for the month. The following is a summary of the measured flows at various index stations across the State.

The index station for the East Texas climatic division is located on the Neches River near Rockland. Streamflow for October was near-normal, averaging 381 cubic feet per second (cfs). The monthly average flow rate, when compared to the 1961-90 reference period, was 182

percent of the reference period median and 172 cfs above the below-normal level for this location. For North-central Texas, the index station is located on the North-Bosque River near Clifton. Streamflow past the gage was near-normal, averaging 45.8 cfs, or 133 percent of the monthly reference period median. This was 14.4 cfs above the station's below-normal flow level. Elsewhere across the State, the index station for the Edwards Plateau is located on the North Concho River near Carlsbad. There was no streamflow past the gage during the month. This is below-normal for the month of October, .33 cfs below the station's near-normal flow level for this month. The index station for South-central Texas is located on the Guadalupe River near Spring Branch. This station was out of operation during the entire month.

STREAMFLOW CONDITIONS FOR OCTOBER COMPARED WITH PAST RECORD



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.:	Conservation: Storage Capacity (acre-feet)	Conservation Storage in Acre-Feet and as Percent of Conservation Storage Capacity					
			Late Oct 1997	Late Sep 1997	Late Oct 1996			
HIGH PLAINS								
Palo Duro Reservoir	1	60,900	8,610	14	9,640	16	14,020	23
Lake Meredith (Texas)	2	500,000	391,390	78	399,300	80	374,560	75
Lake Meredith (Texas and Oklahoma)	(2)	(779,560)	(391,390)	(50)	(399,300)	(51)	(374,560)	(75)
MacKenzie Reservoir	3	46,250	9,170	20	9,140	20	7,840	17
White River Lake	4	31,850	13,160	41	13,860	44	7,980	25
TOTAL		639,000	422,330	66	431,940	68	404,400	63
LOW ROLLING PLAINS								
Greenbelt Reservoir	5	58,200	27,170	47	27,550	47	21,210	36
Lake Kemp	6	319,600	240,830	75	242,870	76	200,060	63
Miller's Creek Reservoir	7	27,890	11,840	42	12,230	44	12,640	45
Fort Phantom Hill Reservoir	8	70,030	62,800	90	66,900	96	59,580	85
Lake Stamford	9	52,700	30,100	57	32,600	62	21,760	41
Lake J. B. Thomas	10	202,300	17,500	9	19,000	9	8,490	4
Lake Colorado City	11	30,800	20,400	66	20,800	68	19,120	62
Champion Creek Reservoir	12	41,600	20,200	49	20,800	50	20,840	50
Hords Creek Lake	13	8,600	6,980	81	7,230	84	6,690	78
TOTAL		811,720	437,820	54	449,980	55	370,390	46
NORTH CENTRAL								
Lake Kickapoo	14	106,000	58,990	56	61,140	58	65,600	62
Lake Arrowhead	15	262,100	200,440	76	206,620	79	190,530	73
Lake Texoma	16	2,722,300	2,722,300	100	2,672,200	98	2,722,300	100
Pat Mayse Lake	17	124,500	109,800	88	110,600	89	124,500	100
Cooper Lake	18	273,000	250,820	92	249,520	91	269,080	99
Lake Sulphur Springs	19	17,710	16,800	95	16,490	93	12,300	69
Lake Tawakoni	20	936,200	865,400	92	886,500	95	654,100	70
Bridgeport Reservoir	21	374,830	338,000	90	345,200	92	302,500	81
Eagle Mountain Reservoir	22	178,380	162,760	91	161,560	91	155,660	87
Benbrook Lake	23	88,200	84,710	96	83,130	94	88,200	100
Joe Pool Lake	24	175,800	164,870	94	164,000	93	149,940	85
Ray Roberts Lake	25	798,760	748,420	94	750,650	94	735,400	92
Lewisville Lake	26	555,000	487,680	88	494,680	89	324,840	59
Grapevine Lake	27	187,700	160,160	85	161,930	86	133,040	71
Lavon Lake	28	443,800	356,520	80	361,990	82	260,410	59
Lake Ray Hubbard	29	490,000	442,400	90	435,600	89	399,600	82
Richland-Chambers Creek Lake	30	1,103,820	1,012,320	92	1,020,420	92	838,030	76
Navarro Mills Lake	31	55,810	49,840	89	47,830	86	34,790	62
Bardwell Lake	32	53,580	50,510	94	47,250	88	42,990	80
Hubbard Creek Reservoir	33	317,800	294,000	93	297,000	93	314,300	99
Lake Graham	34	45,000	45,000	100	45,000	100	45,000	100
Possum Kingdom Lake	35	551,820	478,360	87	495,180	90	540,030	98
Lake Palo Pinto	36	42,200	35,260	84	37,690	89	41,530	98
Lake Granbury	37	135,680	135,680	100	135,680	100	135,680	100
Lake Pat Cleburne	38	25,300	21,000	83	20,600	81	17,700	70
Whitney Lake	39	622,800	531,820	85	545,600	88	622,800	100
Waco Lake	40	144,550	134,740	93	140,480	97	144,550	100

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

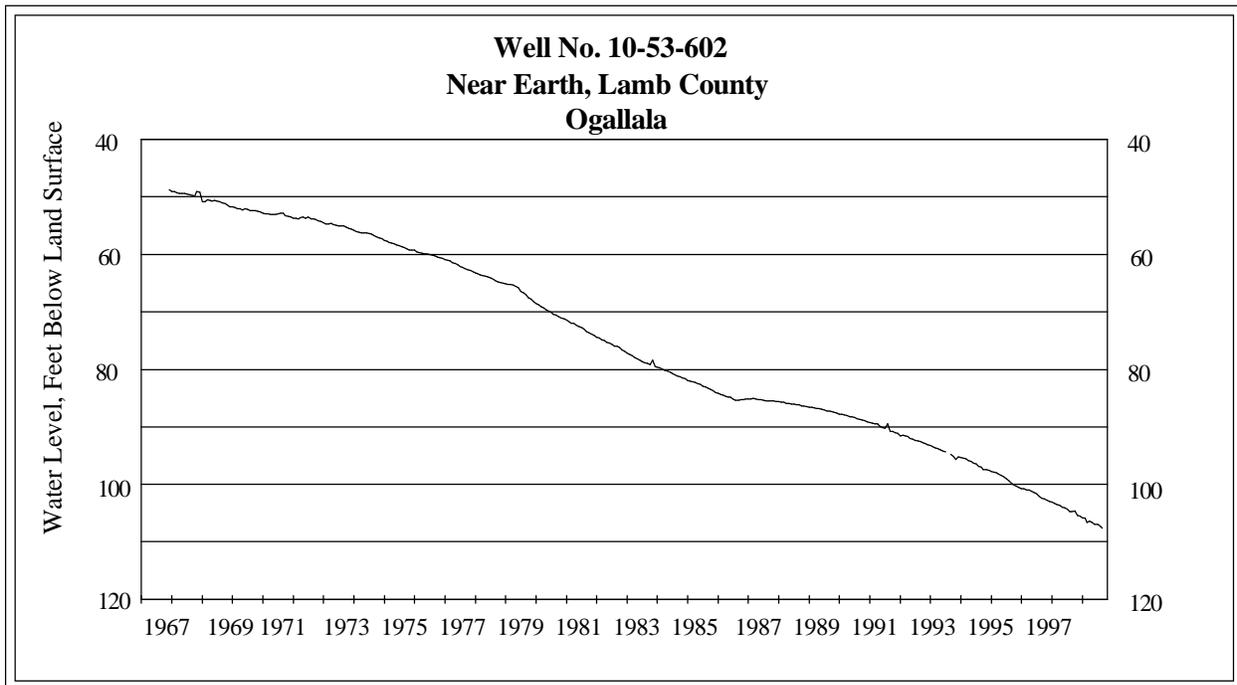
Name of Lake or Reservoir	: No.:	: Conservation: Storage Capacity (acre-feet)	Conservation Storage in Acre-Feet and as Percent of Conservation Storage Capacity					
			: Map:	: Late Oct 1997	: Late Sep 1997	: Late Oct 1996		
NORTH CENTRAL (continued)								
Proctor Lake	41	55,590	47,190	85	48,760	88	55,590	100
Belton Lake	42	434,500	429,290	99	429,770	99	434,500	100
Stillhouse Hollow Lake	43	226,060	224,850	99	224,970	99	191,240	85
Lake Georgetown	44	37,010	32,900	89	33,990	92	20,770	56
Granger Lake	45	54,280	54,280	100	54,280	100	54,280	100
Lake Limestone	46	215,750	179,550	83	192,880	89	140,370	65
Lake Brownwood	47	143,400	128,000	89	130,000	91	141,300	99
TOTAL		11,999,230	11,054,660	92	11,109,190	93	10,403,450	87
EAST								
Wright Patman Lake	48	142,700	142,700	100	142,700	100	142,700	100
Lake Cypress Springs	49	66,800	66,060	99	65,380	98	66,800	100
Lake Bob Sandlin	50	202,300	192,520	95	192,980	95	173,710	86
Lake O' the Pines	51	252,000	252,000	100	252,000	100	252,000	100
Lake Fork Reservoir	52	635,200	609,290	96	613,110	97	551,710	87
Toledo Bend Reservoir	53	4,472,900	3,960,000	89	4,000,000	89	3,421,000	76
Lake Palestine	54	411,300	381,400	93	374,600	91	327,300	80
Lake Tyler	55	73,700	73,700	100	72,100	98	62,520	85
Sam Rayburn Reservoir	56	2,876,300	2,595,250	90	2,689,930	94	1,706,140	59
B. A. Steinhagen Lake	57	94,200	82,760	88	89,020	95	93,300	99
Cedar Creek Reservoir	58	637,050	637,050	100	637,050	100	492,200	77
Lake Livingston	59	1,750,000	1,750,000	100	1,730,000	99	1,652,000	94
Lake Conroe	60	429,900	410,970	96	404,970	94	406,620	95
TOTAL		12,044,350	11,153,700	93	11,263,840	94	9,348,000	78
TRANS-PECOS								
Red Bluff Reservoir	61	307,000	60,280	20	49,800	16	65,000	21
TOTAL		307,000	60,280	20	49,800	16	65,000	21
EDWARDS PLATEAU								
E. V. Spence Reservoir	62	484,800	127,000	26	130,000	27	115,400	24
Twin Buttes Reservoir	63	177,800	42,400	24	45,400	26	63,650	36
O. C. Fisher Lake	64	119,200	16,770	14	17,480	15	17,630	15
O. H. Ivie Reservoir	65	554,340	513,860	93	524,860	95	408,360	74
Lake Buchanan	66	896,980	832,500	93	839,960	94	599,340	67
Amistad Reservoir (Texas)	67	1,771,030	921,780	52	941,230	53	864,220	49
Amistad Reservoir (Texas and Mexico)	(67)	(3,151,300)	(1,495,760)	(47)	(1,529,000)	(49)	(1,267,140)	(40)
TOTAL		4,004,150	2,454,310	61	2,498,930	62	2,068,600	52
SOUTH CENTRAL								
Somerville Lake	68	155,060	155,060	100	147,340	95	149,450	96
Lake Travis	69	1,144,100	1,053,100	92	1,045,200	91	946,910	83
Canyon Lake	70	385,600	381,520	99	378,080	98	375,540	97
Coletto Creek Reservoir	71	35,060	35,060	100	34,010	97	29,090	83
Medina Lake	72	254,000	233,400	92	237,900	94	74,690	29
TOTAL		1,973,820	1,858,140	94	1,842,530	93	1,575,680	80

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

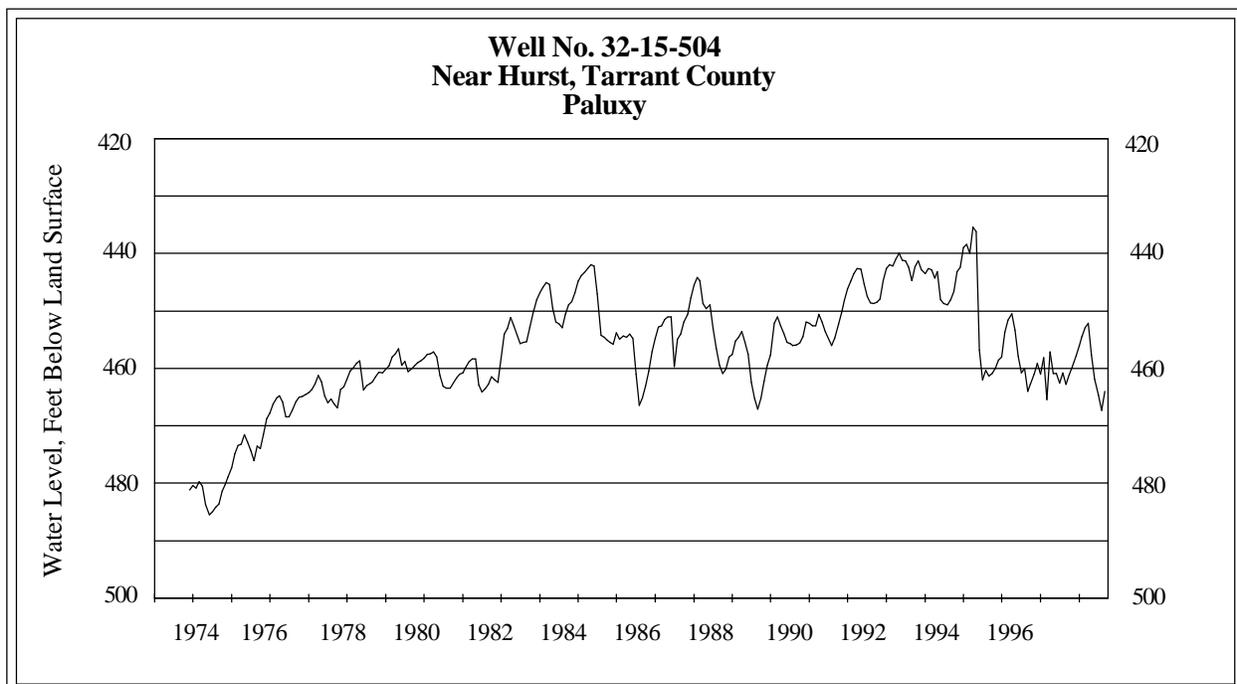
Name of Lake or Reservoir	No. :	Conservation: Storage Capacity :	Conservation Storage in Acre-Feet and as Percent of Conservation Storage Capacity					
			Map: (acre-feet) :	Late Oct 1997 :	Late Sep 1997 :	Late Oct 1996		
UPPER COAST								
Lake Houston	73	128,860	128,860	100	128,860	100	128,860	100
Lake Texana	74	157,900	157,900	100	157,900	100	151,560	96
TOTAL		286,760	286,760	100	286,760	100	280,420	98
SOUTHERN								
Choke Canyon Reservoir	75	695,260	286,630	41	293,910	42	173,300	25
Lake Corpus Christi	76	241,240	182,800	76	152,800	63	101,200	42
Falcon Reservoir (Texas)	77	1,555,120	250,510	16	192,140	12	295,100	19
Falcon Reservoir (Texas and Mexico)	(77)	(2,653,290)	(489,670)	(18)	(421,570)	(16)	(556,150)	(21)
TOTAL		2,491,620	719,940	29	638,850	26	569,600	23
STATE TOTAL		34,557,650	28,447,940	82	28,571,820	83	25,085,540	73

NOTES: 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). Percentages are based on the conservation storage capacity of and the conservation storage in the reservoirs for date shown. 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 parenthesis 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. Figures in parentheses show the total conservation storage for both Texas (United States' share) and Mexico and are not included in State total.

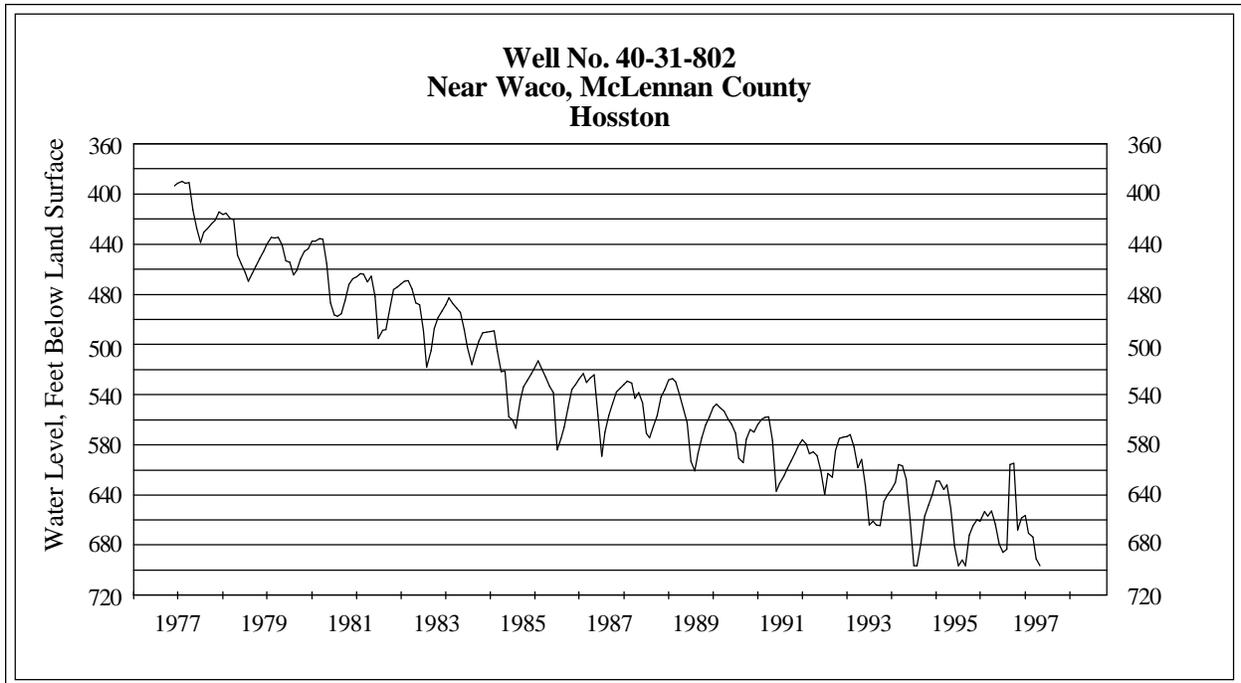
GROUND WATER LEVELS IN OBSERVATION WELLS



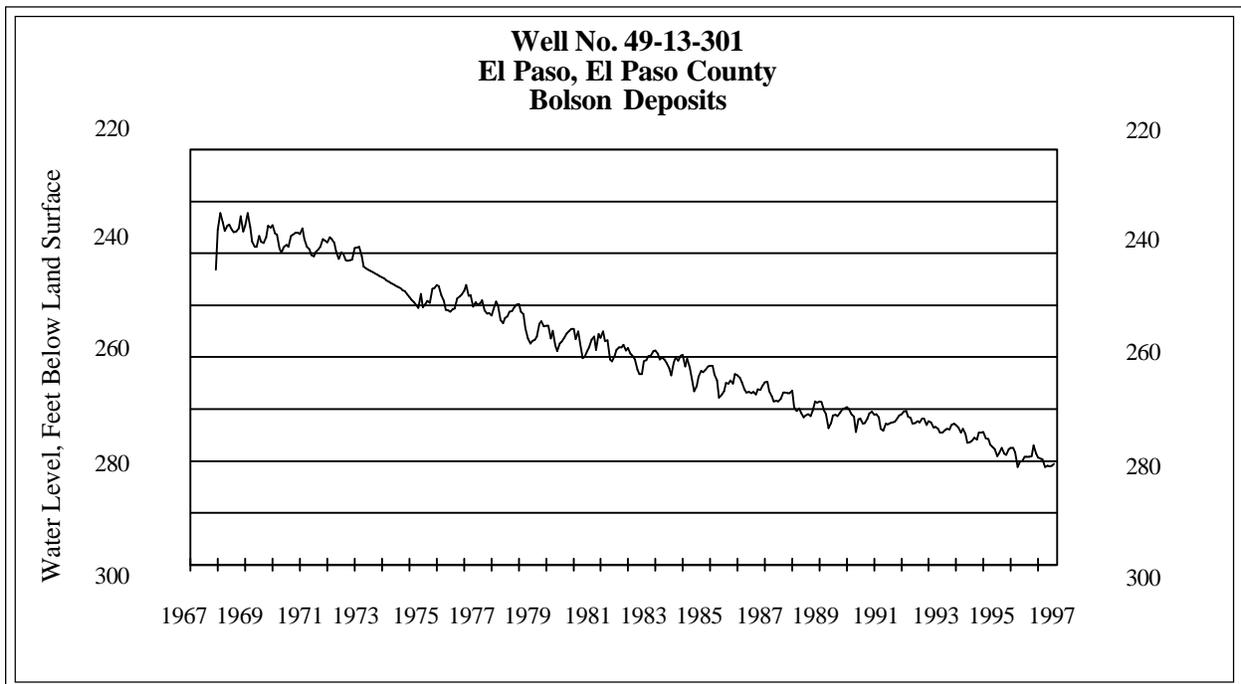
The October water-level measurement in this Ogallala aquifer well, elevation 3667 feet above sea level, was 107.60 feet below land surface. This was 0.31 feet below last month's measurement, 2.85 feet below last year's measurement, and 79.45 feet below the initial measurement recorded in 1950.



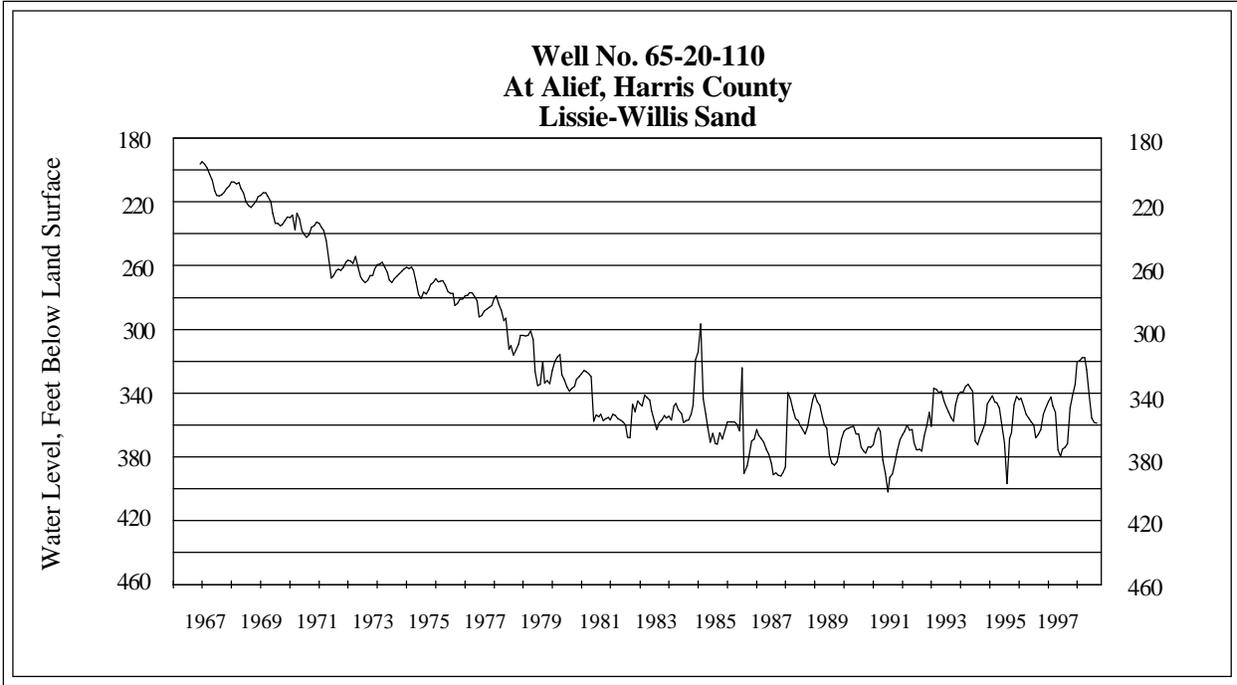
The October water-level measurement in this Paluxy aquifer well, elevation 535 feet above sea level, was 463.94 feet below land surface. This measurement was 3.39 feet above last month's measurement, 1.12 feet below last year's measurement, and 70.55 feet below the initial measurement recorded in 1953.



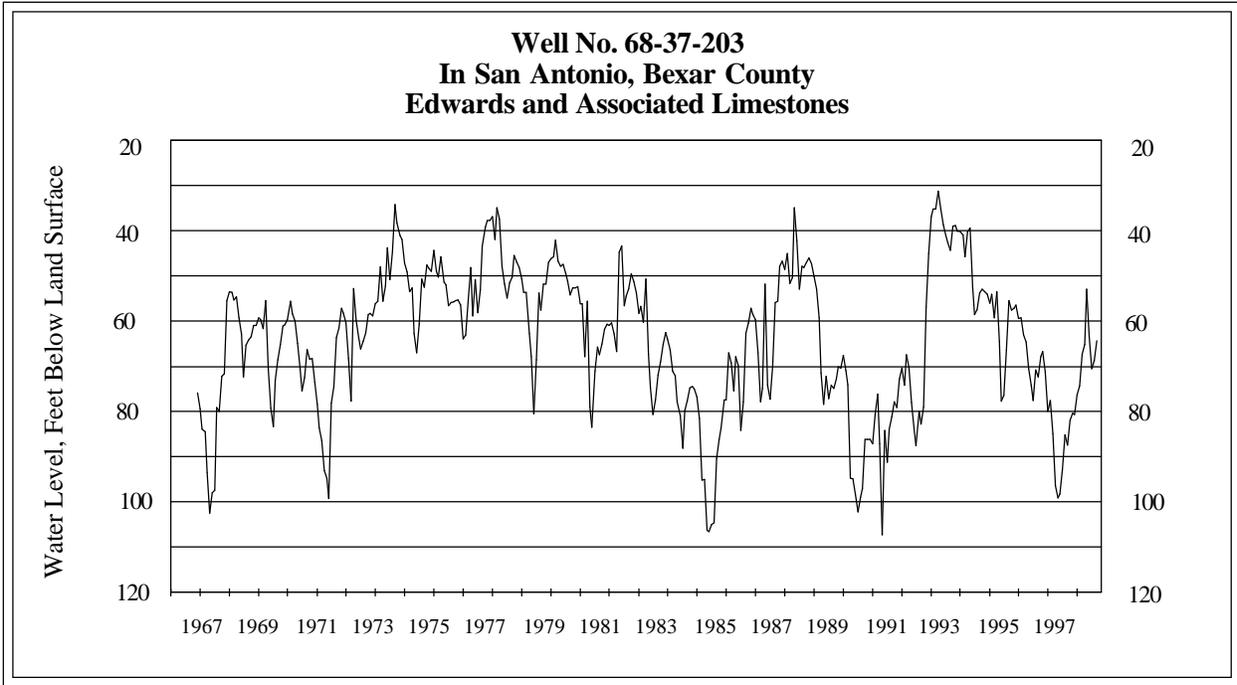
The October water-level measurement in this Hosston Formation aquifer well, elevation 593 feet above sea level, was not available due to a bridged casing. This well will be replaced with another Hosston well in the Waco area.



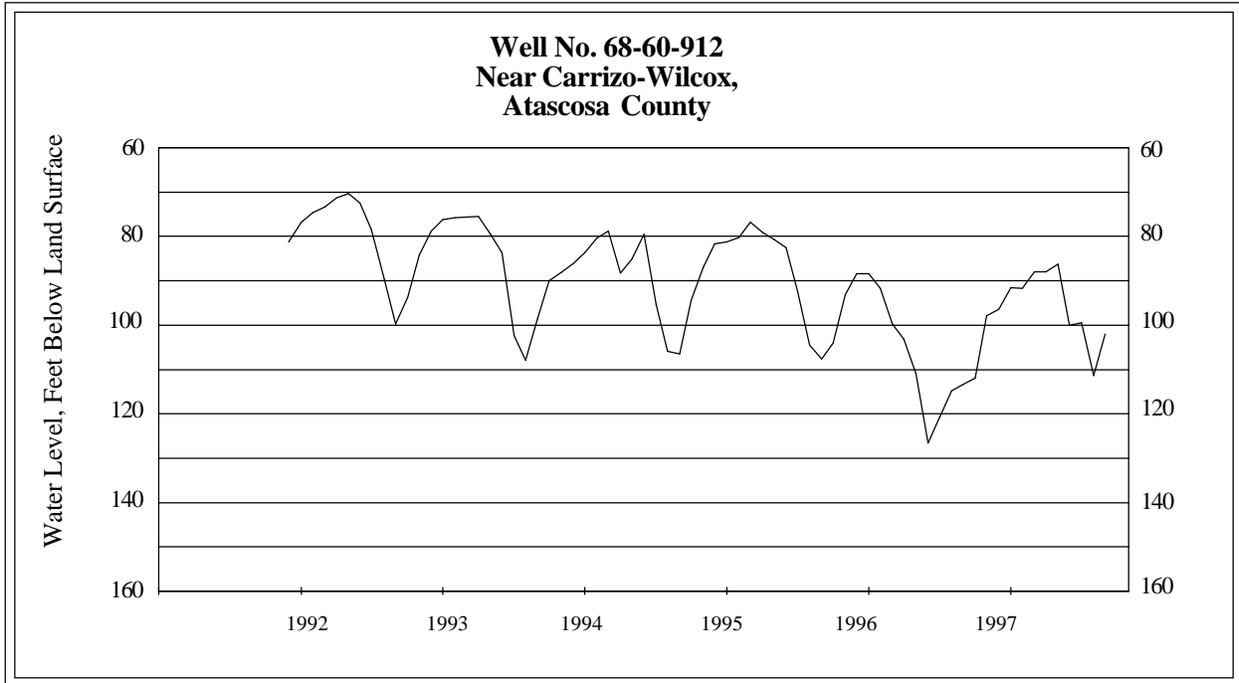
The October water-level measurement in this Bolson Deposits aquifer well, elevation 3882 feet above sea level, was 280.56 feet below land surface. This was .36 feet above last month's measurement, .99 feet below last year's measurement, and 48.66 feet below the initial measurement recorded in 1964.



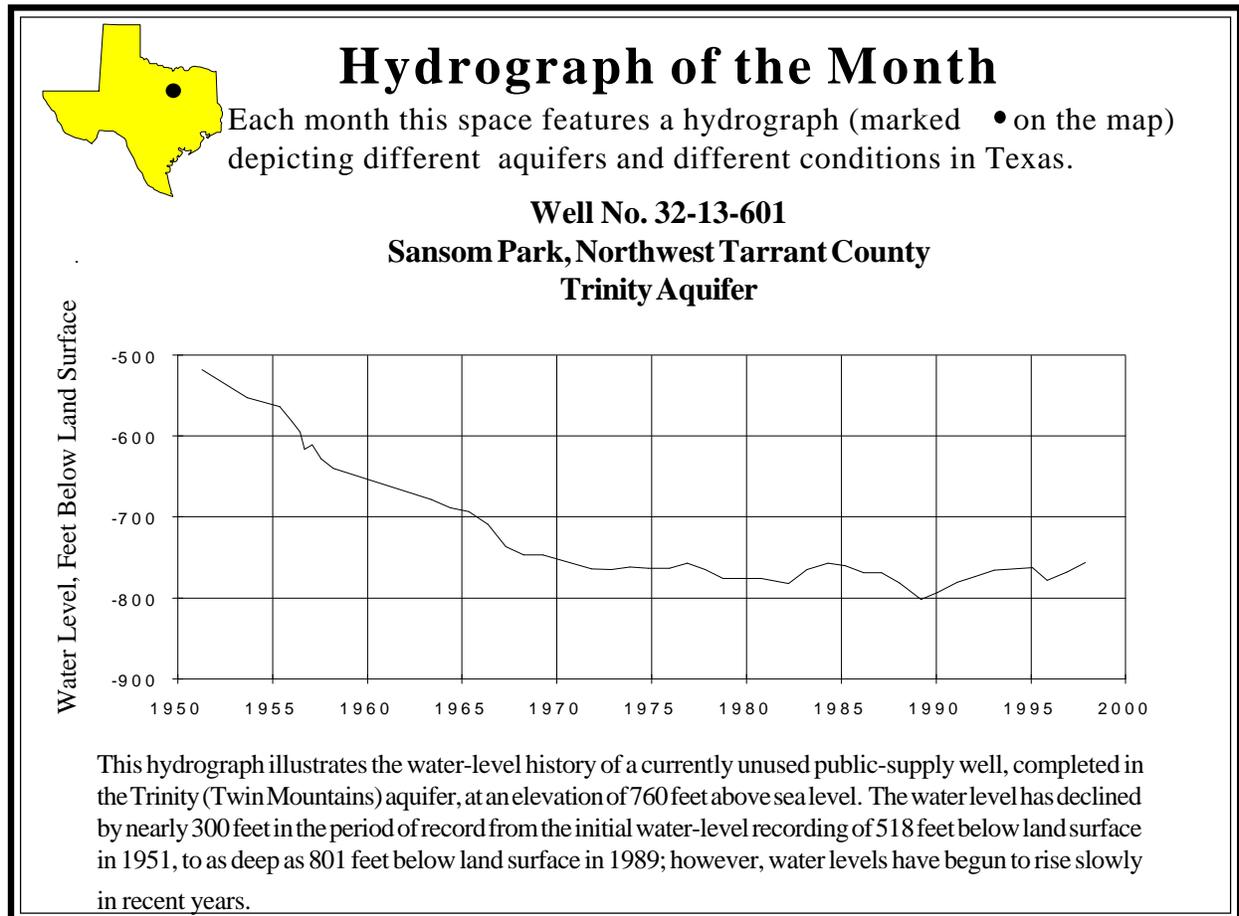
The October water-level measurement in this Lissie Willis Sand aquifer well, elevation 83 feet above sea level, was 358.72 feet below land surface. This was .33 feet below last month's measurement, 12.95 feet above last year's measurement, and 322.72 feet below the initial measurement recorded in 1939.



The October water-level measurement in this Edwards aquifer well, elevation 731 feet above sea level, was 64.3 feet below land surface. This was 4.40 feet above last month's measurement, 23.10 feet above last year's measurement, and 4.64 feet below the initial measurement recorded in 1962.



The October water-level measurement in this Carrizo aquifer well, elevation 446 feet above sea level, was 102.02 feet below land surface. This was 9.46 feet above last month's measurement, 12.83 feet above last year's measurement, and 20.77 feet below the initial measurement recorded in 1992.



TEXAS WATER CONDITIONS



**Texas Water Development Board
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