Texas Water Development Board

WATER Conditions

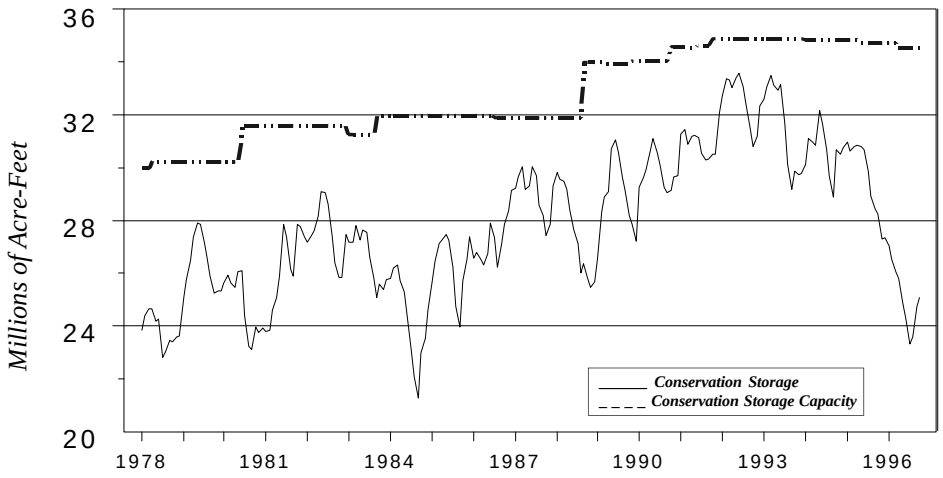
RESERVOIR STORAGE

November 1996

Near the end of October, the 77 reservoirs monitored for this report held 25,085,540 acre-feet in conservation storage. This was 73 percent of the conservation storage capacity of the State's major reservoirs. Compared to last month, storage has increased 360,330 acre-feet. Compared to a year ago, storage has decreased 3,313,270 acre-feet.

Of the monitored reservoirs, 14 held 100 percent or more of their conservation storage capacities near the end of October. Lakes Graham, Granbury, Cypress Springs, and Houston, 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: Texoma, 20,100; Pat Mayse, 12,400; Benbrook, 390; Whitney, 9,200; Waco, 8,720; Proctor, 4,000; Belton, 7,320; Granger, 2,290; Wright Patman, 99,840; and Lake O' the Pines, 18,060.

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.

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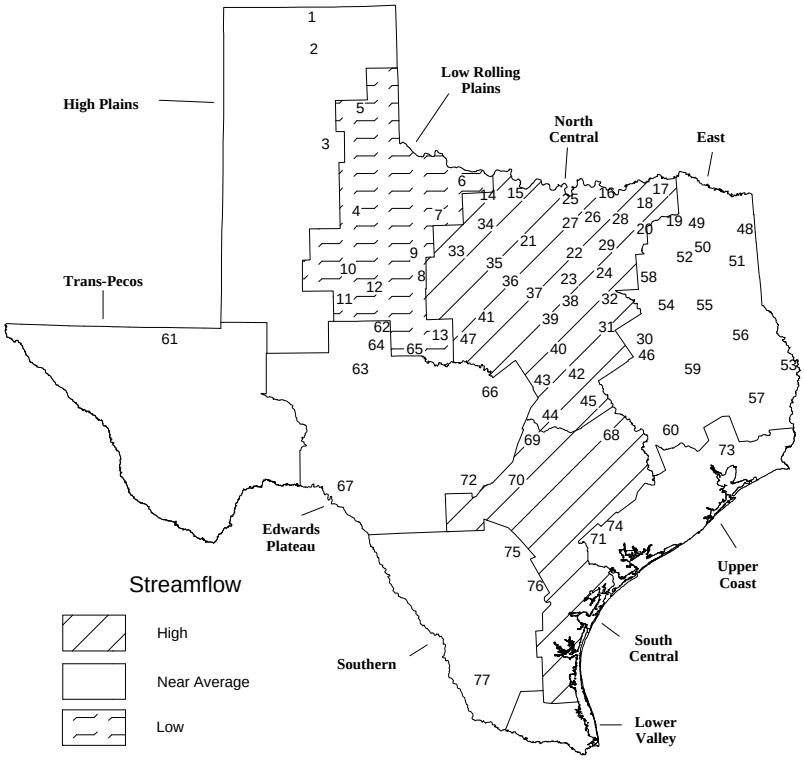
STREAMFLOW

Streamflow conditions across Texas ranged from above-normal to below-normal levels during the month of October. On the average, above normal streamflow was reported for North and South Central Texas. The Low Rolling Plains, near the panhandle, reported below normal streamflow, while the remainder of the state reported near normal flows. The following is a summary of the measured flows at various index stations across the State.

The index station for East Texas is located on the Neches River near Rockland. Streamflow for October was within the normal range, averaging 470 cubic feet per second (cfs). The monthly average flow rate, when compared to the 1961-90 reference period, was 225 percent of the reference period median and 122 cfs below the above-normal level for this location. For North and North-Central Texas, the index station is located on the North Bosque River near Clifton. Streamflow past the gage was above normal for the third consecutive month, averaging 137 cfs, or 398 percent of the monthly reference period median. This was 65.9 cfs above the station's above-normal flow level. Elsewhere across the State, the index station for West Texas is located on the North Concho River near Carlsbad. Streamflow averaged 2.06 cfs during the month, or 624 percent of the reference period median. This value was normal for this location at this time of the year, and was 6.55 cfs below the station's above-normal flow level. The index station for South and Central Texas is located on the Guadalupe River near Spring Branch. Flow during the month at the station was normal, averaging 688 cfs past the gate. This was 310 percent of the month's reference period median flow rate and was 25 cfs below the above-normal streamflow level.

STREAMFLOW CONDITIONS FOR OCTOBER COMPARED WITH PAST RECORD



Reservoirs Shown on Map

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

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage in Acre-Feet and as Percent of Conservation Storage Capacity					
			Late Oct 1996		Late Sep 1996		Late Oct 1995	
HIGH PLAINS								
Palo Duro Reservoir	1	60,900	14,020	23	18,560	30	3,680	6
Lake Meredith (Texas)	2	500,000	374,560	75	393,640	79	337,800	68
Lake Meredith (Texas an Oklahoma)	(2)	(779,560)	(374,560)	(48)	(393,640)	(50)	(337,800)	(42)
MacKenzie Reservoir	3	46,250	7,840	17	8,220	18	8,160	18
White River Lake	4	31,850	7,980	25	8,310	26	20,140	45
TOTAL		639,000	404,400	63	428,730	67	369,780	58
LOW ROLLING PLAINS								
Greenbelt Reservoir	5	58,200	21,210	36	21,500	37	21,870	38
Lake Kemp	6	319,600	200,060	63	204,600	64	263,140	82
Miller's Creek Reservoir	7	27,890	12,640	45	14,980	54	15,600	56
Fort Phantom Hill Reservoir	8	70,030	59,580	85	57,520	82	63,520	85
Lake Stamford	9	52,700	21,760	41	22,970	44	33,980	64
Lake J. B. Thomas	10	202,300	8,490	4	9,290	5	16,620	8
Lake Colorado City	11	30,800	19,120	62	18,890	61	22,870	74
Champion Creek Reservoir	12	41,600	20,840	50	22,720	55	31,560	76
Hords Creek Lake	13	8,600	6,690	78	6,910	80	6,630	77
TOTAL		811,720	370,390	46	379,380	47	475,790	59
NORTH CENTRAL								
Lake Kickapoo	14	106,000	65,600	62	68,420	65	96,650	91
Lake Arrowhead	15	262,100	190,530	73	194,480	74	238,150	91
Lake Texoma	16	2,722,300	2,722,300	100	2,722,300	100	2,599,100	95
Pat Mayse Lake	17	124,500	124,500	100	124,500	100	111,800	90
Cooper Lake	18	273,000	269,080	99	255,650	94	262,420	96
Lake Sulphur Springs	19	17,710	12,300	69	11,400	64	13,500	76
Lake Tawakoni	20	936,200	654,100	70	673,000	72	839,700	90
Bridgeport Reservoir	21	374,830	302,500	81	296,400	79	355,140	95
Eagle Mountain Reservoir	22	178,380	155,660	87	146,860	82	160,910	90
Benbrook Lake	23	88,200	88,200	100	87,780	99	87,310	99
Joe Pool Lake	24	175,800	149,940	85	141,840	81	165,880	94
Ray Roberts Lake	25	798,760	735,400	92	723,640	91	761,610	95
Lewisville Lake	26	555,000	324,840	59	306,470	55	467,680	84
Grapevine Lake	27	187,700	133,040	71	124,150	66	161,660	86
Lavon Lake	28	443,800	260,410	59	236,040	53	367,130	83
Lake Ray Hubbard	29	490,000	399,600	82	368,650	75	437,940	89
Richland-Chambers Creek Lake	30	1,103,820	838,030	76	861,580	78	1,066,300	94
Navarro Mills Lake	31	55,810	34,790	62	35,980	64	50,460	90
Bardwell Lake	32	53,580	42,990	80	42,310	79	48,150	90
Hubbard Creek Reservoir	33	317,800	314,300	99	304,100	96	254,000	80
Lake Graham	34	45,000	45,000	100	45,000	100	45,000	100
Possum Kingdom Lake	35	551,820	540,030	98	503,540	91	534,510	94
Lake Palo Pinto	36	42,200	41,530	98	42,190	99	40,880	97
Lake Granbury	37	135,680	135,680	100	135,680	100	135,680	100
Lake Pat Cleburne	38	25,300	17,700	70	17,200	68	23,800	94
Whitney Lake	39	622,800	622,800	100	622,800	100	581,170	93
Waco Lake	40	144,550	144,550	100	144,550	100	143,860	95

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

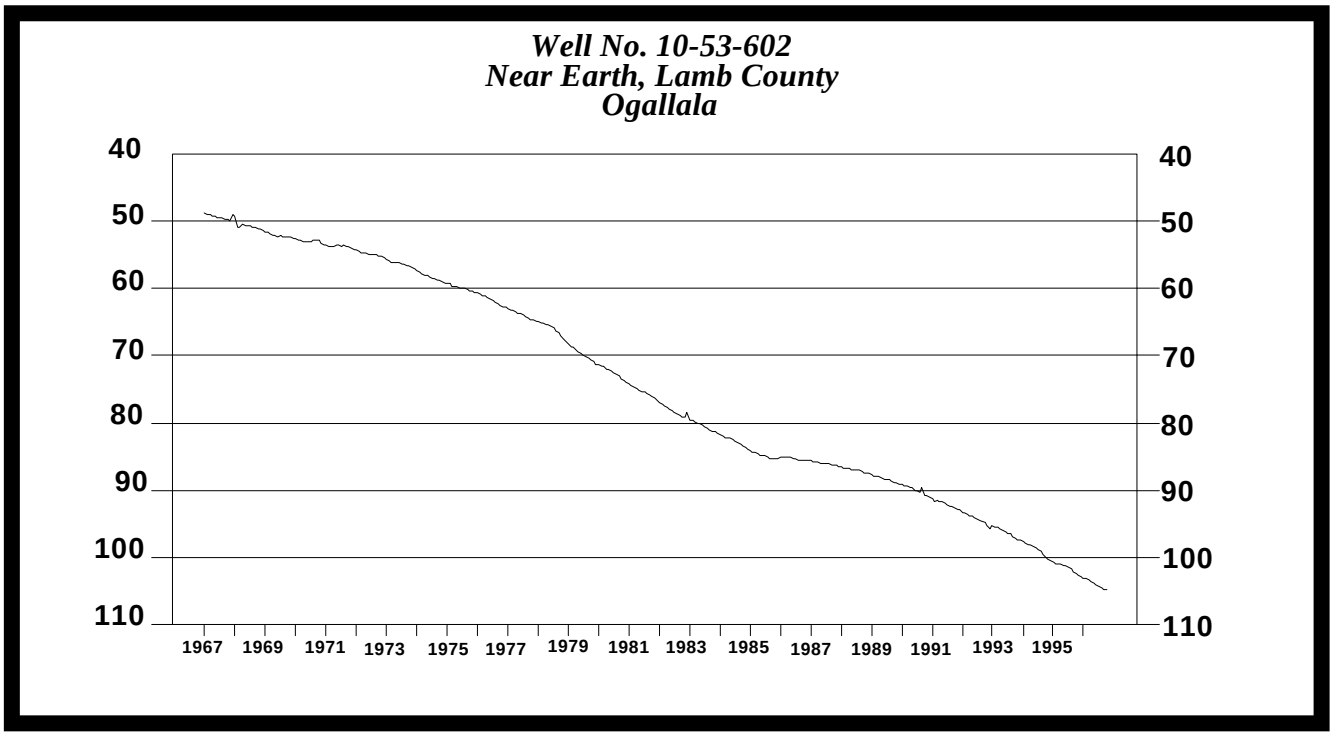
Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage in Acre-Feet and as Percent of Conservation Storage Capacity					
			Late Oct 1996		Late Sep 1996		Late Oct 1995	
NORTH CENTRAL - continued								
Proctor Lake	41	55,590	55,590	100	55,590	100	57,680	97
Belton Lake	42	434,500	434,500	100	434,500	100	440,120	99
Stillhouse Hollow Lake	43	226,060	191,240	85	189,490	84	228,610	97
Lake Georgetown	44	37,010	20,770	56	18,740	51	30,740	83
Granger Lake	45	54,280	54,280	100	54,280	100	64,370	99
Lake Limestone	46	215,750	140,370	65	151,730	70	208,980	97
Lake Brownwood	47	143,400	141,300	99	143,400	100	127,300	89
TOTAL		11,999,230	10,403,450	87	10,284,240	86	11,208,190	93
EAST								
Wright Patman Lake	48	142,700	142,700	100	142,700	100	142,700	100
Lake Cypress Springs	49	66,800	66,800	100	66,800	100	63,440	95
Lake Bob Sandlin	50	202,300	173,710	86	172,570	85	185,840	92
Lake O' the Pines	51	252,000	252,000	100	252,000	100	246,420	98
Lake Fork Reservoir	52	635,200	551,710	87	552,960	87	579,900	91
Toledo Bend Reservoir	53	4,472,900	3,421,000	76	3,423,000	77	3,881,000	87
Lake Palestine	54	411,300	327,300	80	327,500	80	349,000	85
Lake Tyler	55	73,700	62,520	85	61,690	84	68,940	94
Sam Rayburn Reservoir	56	2,876,300	1,706,140	59	1,678,130	58	2,144,810	75
B. A. Steinhagen Lake	57	94,200	93,300	99	92,620	98	83,000	88
Cedar Creek Reservoir	58	637,050	492,200	77	500,600	79	606,840	89
Lake Livingston	59	1,750,000	1,652,000	94	1,626,000	93	1,750,000	100
Lake Conroe	60	429,900	406,620	95	409,570	95	415,770	97
TOTAL		12,044,350	9,348,000	78	9,306,140	77	10,517,660	87
TRANS-PECOS								
Red Bluff Reservoir	61	307,000	65,000	21	64,448	21	67,490	22
TOTAL		307,000	65,000	21	64,448	21	67,490	22
EDWARDS PLATEAU								
E. V. Spence Reservoir	62	484,800	115,400	24	117,200	24	166,800	34
Twin Buttes Reservoir	63	177,800	63,650	36	63,950	36	38,750	22
O. C. Fisher Lake	64	119,200	17,630	15	18,080	15	18,450	15
O. H. Ivie Reservoir	65	554,340	408,360	74	442,460	80	539,720	97
Lake Buchanan	66	896,980	599,340	67	561,616	63	896,980	100
Amistad Reservoir (Texas)	67	1,771,030	864,220	49	860,160	49	1,084,730	57
Amistad Reservoir (Texas and Mexico)	(67)	(3,151,300)	(1,267,139)	(40)	(1,200,660)	(38)	(1,246,060)	(40)
TOTAL		4,004,150	2,068,600	52	2,063,466	52	2,745,430	68
SOUTH CENTRAL								
Somerville Lake	68	155,060	149,450	96	150,670	97	157,830	99
Lake Travis	69	1,144,100	946,910	83	760,726	66	978,740	86
Canyon Lake	70	385,600	375,540	97	347,890	90	377,010	98
Coleto Creek Reservoir	71	35,060	29,090	83	29,760	85	25,950	74
Medina Lake	72	254,000	74,690	29	78,410	31	159,300	63
TOTAL		1,973,820	1,575,680	80	1,367,456	69	1,698,830	86

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

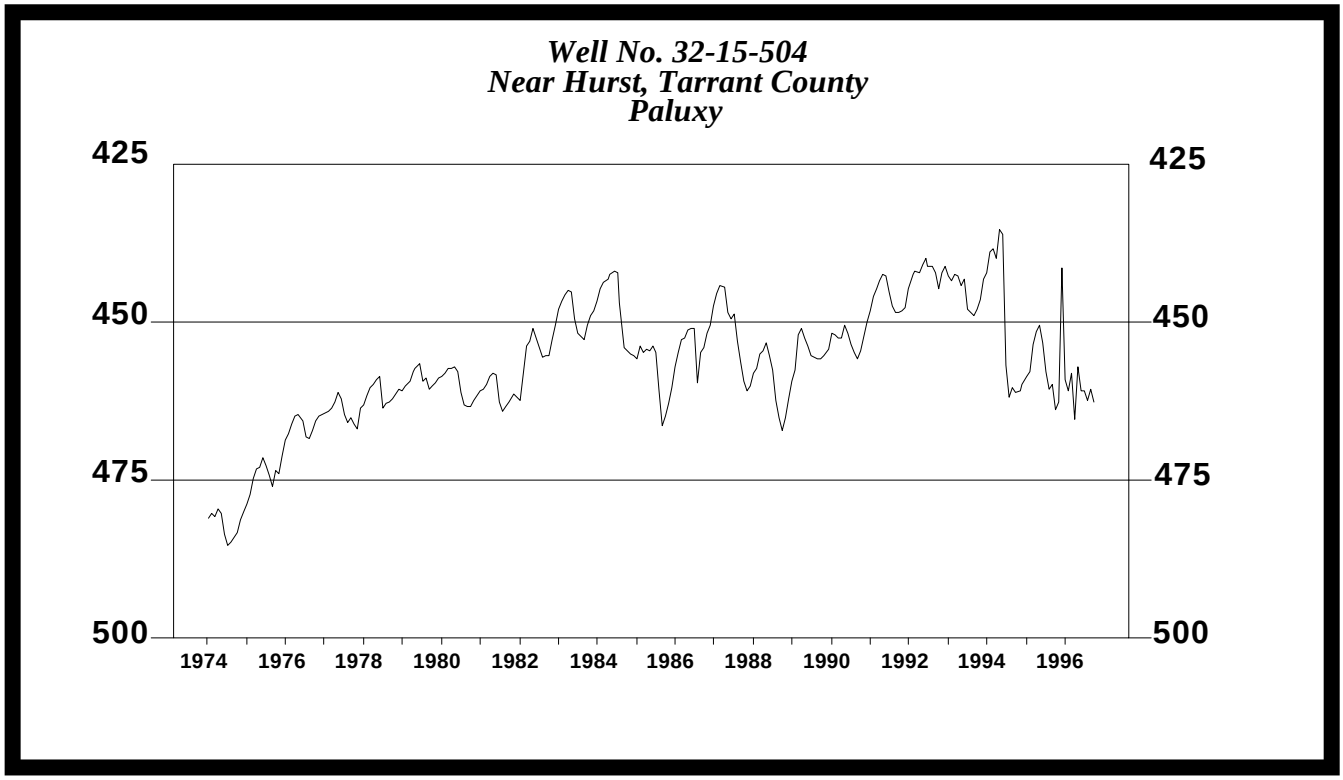
Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage in Acre-Feet and as Percent of Conservation Storage Capacity					
			Late Oct 1996		Late Sep 1996		Late Oct 1995	
UPPER COAST								
Lake Houston	73	128,860	128,860	100	128,860	100	140,500	100
Lake Texana	74	157,900	151,560	96	157,900	100	147,580	93
TOTAL		286,760	280,420	98	286,760	100	288,080	100
SOUTHERN								
Choke Canyon Reservoir	75	695,260	173,300	25	181,040	26	469,790	68
Lake Corpus Christi	76	241,240	101,200	42	102,500	42	113,500	47
Falcon Reservoir (Texas)	77	1,555,120	295,100	19	261,050	17	444,270	28
Falcon Reservoir (Texas and Mexico)	(77)	(2,653,290)	(556,147)	(21)	(497,780)	(19)	(644,510)	(24)
TOTAL		2,491,620	569,600	23	544,590	22	1,027,560	41
STATE TOTAL		34,557,650	25,085,540	73	24,725,210	72	28,398,810	82

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.

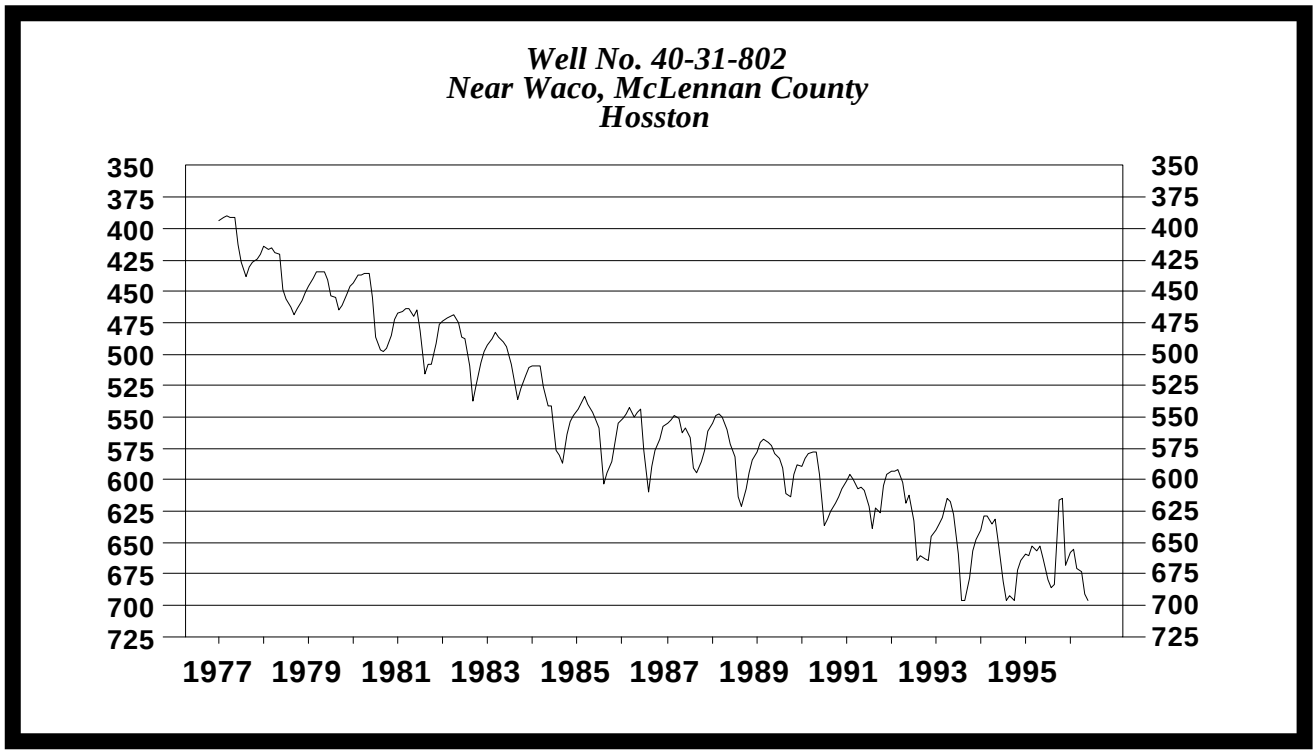
GROUND WATER LEVELS IN OBSERVATION WELLS



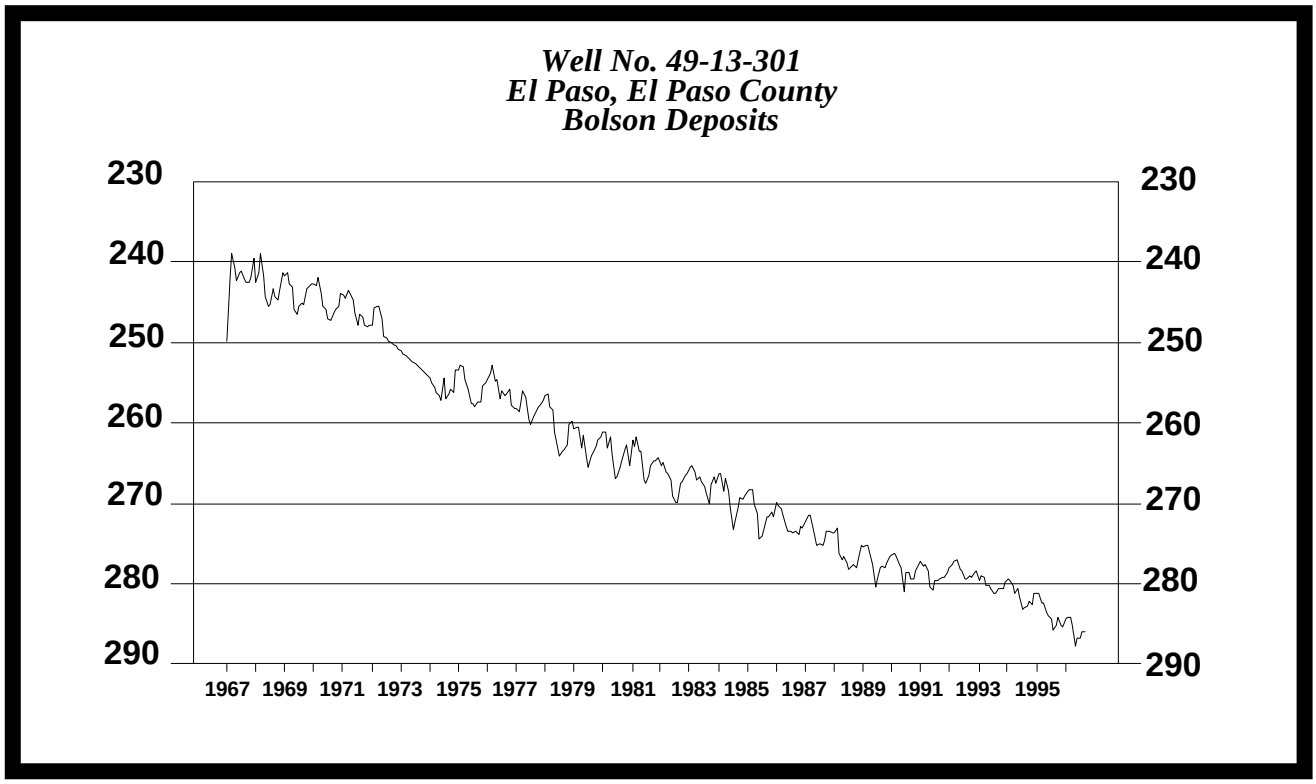
The October water-level measurement in this Ogallala aquifer well, elevation 3,667 feet above sea level, was 104.75 feet below land surface. This was 0.02 of a foot below last month's measurement, 2.36 feet below last year's measurement, and 76.62 feet below the initial measurement recorded in 1950.



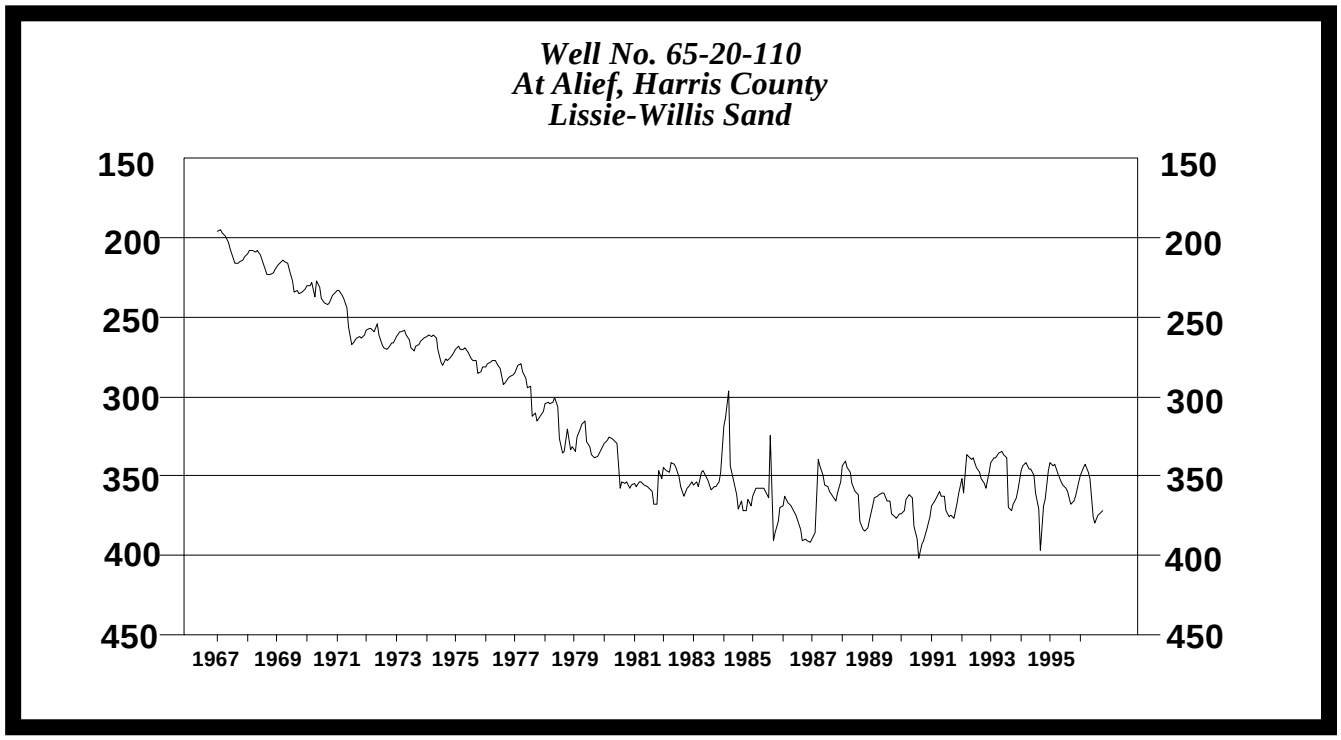
The October water-level measurement in this Paluxy aquifer well, elevation 535 feet above sea level, was not available.



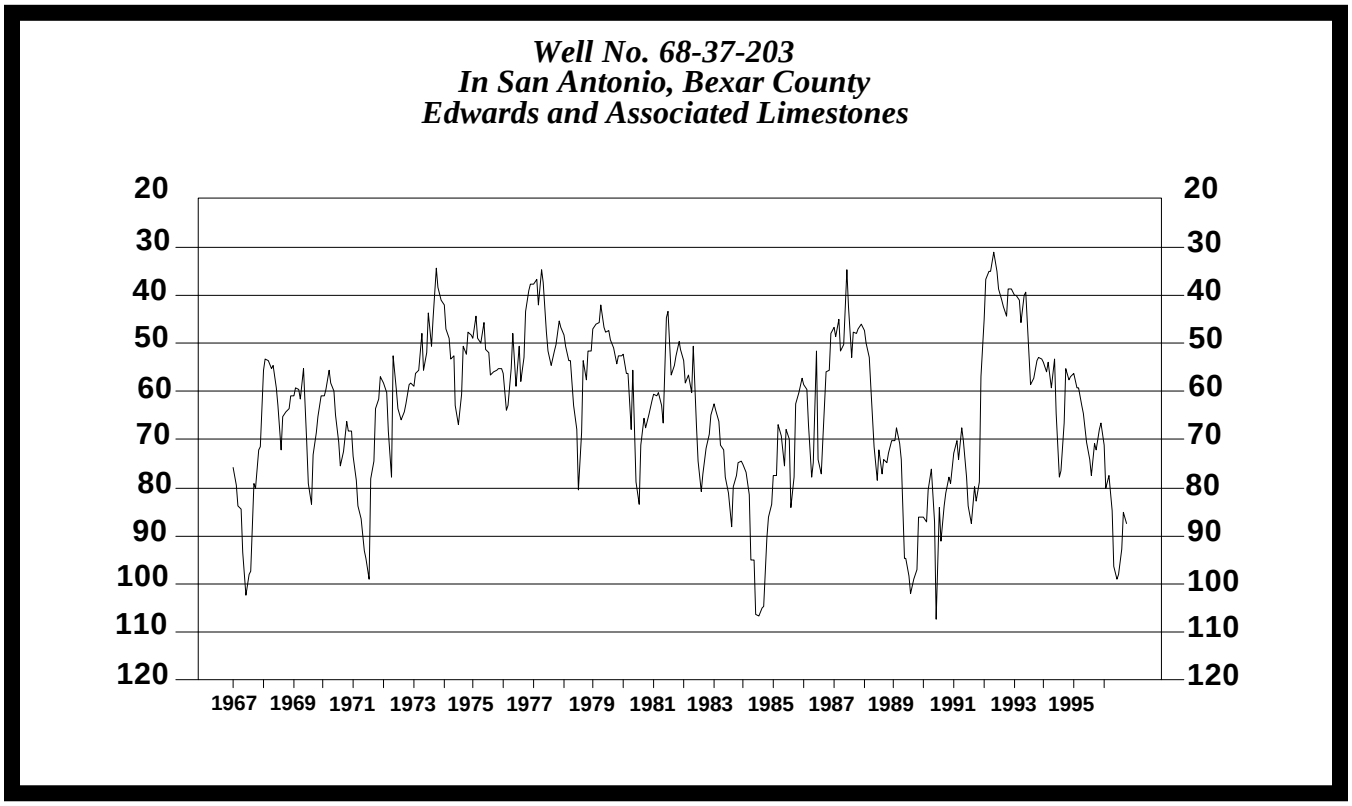
The October water-level measurement in this Hosston Formation aquifer well, elevation 593 feet above sea level, was 460.77 feet below land surface. This was 2.05 feet above last month's measurement, 18.78 feet below last year's measurement, and 84.82 feet below the initial measurement recorded in 1955.



The October water-level measurement in this Bolson Deposits aquifer well, elevation 3,882 feet above sea level, was 279.21 feet below land surface. This was 0.36 of a foot below last month's measurement, 1.08 feet below last year's measurement, and 48.33 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 371.67 feet below land surface. This was 2.31 feet above last month's measurement, 5.80 feet below last year's measurement, and 335.67 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 87.40 feet below land surface. This was 2.20 feet below last month's measurement, 15.0 feet below last year's measurement, and 27.78 feet below the initial measurement recorded in 1962.