Texas Water Development Board

WATER Conditions

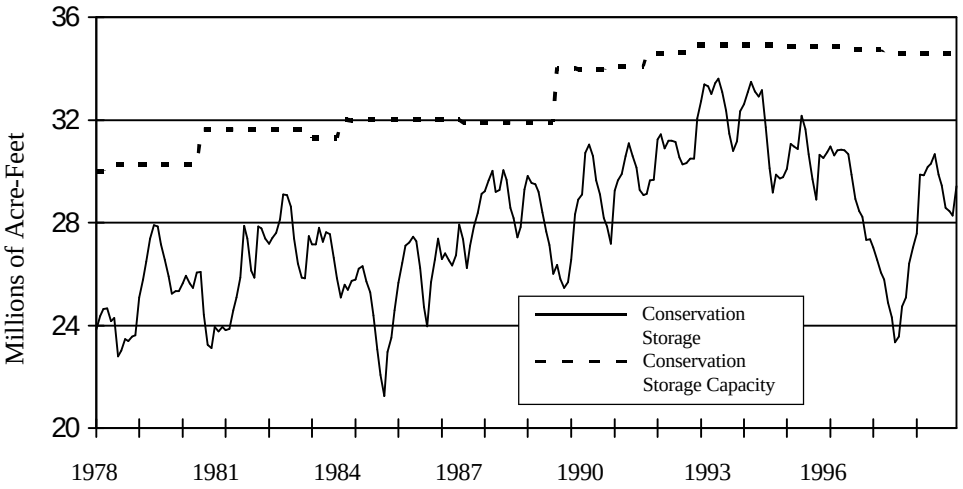
RESERVOIR STORAGE

January 1998

Near the end of December, the 77 reservoirs monitored for this report held 29,401,860 acre-feet in conservation storage. This was 85 percent of the conservation storage capacity of the State's major reservoirs. Compared to last month, storage has increased 1,129,610 acre-feet. Compared to this month last year, storage has increased 2,379,200 acre-feet.

Of the monitored reservoirs, 28 held 100 percent or more of their conservation storage capacities near the end of December. Lakes Sulphur Springs, Tawakoni, Ray Hubbard, Richland-Chambers, Graham, Granbury, Waco, Belton, Granger, Cypress Springs, Palestine, Tyler, Cedar Creek, Livingston, Somerville, 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: Texoma, 218,800; Pat Mayse, 10,600; Cooper, 41,870; Benbrook, 1,420; Joe Pool, 6,120; Lavon, 22,830; Navarro, 56,430; Bardwell, 36,300; Wright Patman, 53,660; Lake O' the Pines, 13,390, and Sam Rayburn, 17,180.

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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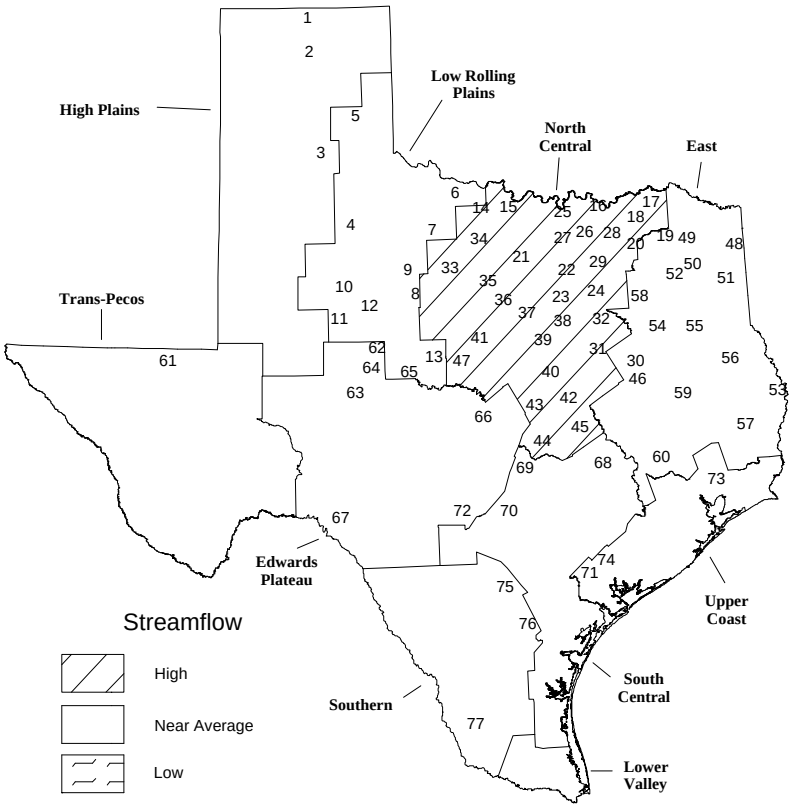
STREAMFLOW

Streamflow conditions across Texas ranged from near-normal to above-normal during the month of December. There were extensive showers and thunderstorms in north-central Texas and scattered thunderstorms throughout southeast Texas during the month. Elsewhere across the State rainfall and runoff were normal for the month of December. 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 December was near-normal, averaging 3,322 cubic feet per second (cfs). The monthly average flow rate, when compared to the 1961-90 reference period, was 253 percent of the reference period median and 132 cfs below the above-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 above-normal, averaging 101 cfs, or 459 percent of the monthly reference period median. This was 39.3 cfs above the station's near-normal flow level. Elsewhere across the State, the index station for the Edwards Plateau is located on the North Concho River near Carlsbad. Streamflow past the gage was near-normal, averaging 2.69 cfs, or 1034 percent of the monthly reference period median. This was 0.77 cfs below the station's above-normal flow level. The index station for South-central Texas is located on the Guadalupe River near Spring Branch. Streamflow past the gage was near-normal, averaging 234 cfs, or 119 percent of the monthly reference period median. This was 121 cfs above the station's below-normal flow level.

STREAMFLOW CONDITIONS FOR DECEMBER 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 Dec 1997		Late Nov 1997		Late Dec 1996	
HIGH PLAINS								
Palo Duro Reservoir	1	60,900	7,620	13	8,610	14	12,450	20
Lake Meredith (Texas)	2	500,000	383,770	77	387,240	77	367,220	73
Lake Meredith (Texas and Oklahoma)	(2)	(779,560)	(383,770)	(49)	(387,240)	(50)	(367,220)	(47)
MacKenzie Reservoir	3	46,250	8,460	18	8,760	19	7,700	17
White River Lake	4	31,850	12,870	40	12,870	40	7,490	24
TOTAL		639,000	412,720	65	417,480	65	394,860	62
LOW ROLLING PLAINS								
Greenbelt Reservoir	5	58,200	27,510	47	27,100	47	21,350	37
Lake Kemp	6	319,600	247,540	77	238,200	75	205,990	64
Miller's Creek Reservoir	7	27,890	11,640	42	11,550	41	12,130	43
Fort Phantom Hill Reservoir	8	70,030	60,290	86	60,290	86	58,200	83
Lake Stamford	9	52,700	29,200	55	29,500	56	21,530	41
Lake J. B. Thomas	10	202,300	16,580	8	16,910	8	9,100	4
Lake Colorado City	11	30,800	19,800	64	19,960	65	18,500	60
Champion Creek Reservoir	12	41,600	20,100	48	20,000	48	20,840	50
Hords Creek Lake	13	8,600	6,660	77	6,800	79	6,560	76
TOTAL		811,720	439,320	54	430,310	53	374,200	46
NORTH CENTRAL								
Lake Kickapoo	14	106,000	58,130	55	57,290	54	66,500	63
Lake Arrowhead	15	262,100	204,970	78	196,340	75	197,550	75
Lake Texoma	16	2,722,300	2,722,300	100	2,722,300	100	2,650,000	97
Pat Mayse Lake	17	124,500	124,500	100	109,100	88	124,500	100
Cooper Lake	18	273,000	273,000	100	251,190	92	273,000	100
Lake Sulphur Springs	19	17,710	17,710	100	17,100	97	17,710	100
Lake Tawakoni	20	936,200	936,200	100	842,500	90	785,600	84
Bridgeport Reservoir	21	374,830	336,000	90	333,700	89	328,700	88
Eagle Mountain Reservoir	22	178,380	169,360	95	157,260	88	178,260	99
Benbrook Lake	23	88,200	88,200	100	84,630	96	88,200	100
Joe Pool Lake	24	175,800	175,800	100	163,570	93	166,380	95
Ray Roberts Lake	25	798,760	770,850	97	741,190	93	798,760	100
Lewisville Lake	26	555,000	541,250	98	473,540	85	555,000	100
Grapevine Lake	27	187,700	173,420	92	152,970	81	181,590	97
Lavon Lake	28	443,800	443,800	100	348,660	79	443,800	100
Lake Ray Hubbard	29	490,000	490,000	100	441,400	90	489,200	99
Richland-Chambers Creek Lake	30	1,103,820	1,103,820	100	1,005,020	91	882,490	80
Navarro Mills Lake	31	55,810	55,810	100	51,150	92	44,980	81
Bardwell Lake	32	53,580	53,580	100	51,040	95	52,150	97
Hubbard Creek Reservoir	33	317,800	293,000	92	290,900	92	314,900	99
Lake Graham	34	45,000	45,000	100	44,400	99	45,000	100
Possum Kingdom Lake	35	551,820	472,400	86	470,120	85	545,410	99
Lake Palo Pinto	36	42,200	34,900	83	35,380	84	39,840	94
Lake Granbury	37	135,680	135,680	100	135,680	100	135,680	100
Lake Pat Cleburne	38	25,300	24,200	96	20,200	80	20,200	80
Whitney Lake	39	622,800	527,080	85	509,280	82	618,540	99
Waco Lake	40	144,550	144,550	100	134,950	93	144,550	100

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

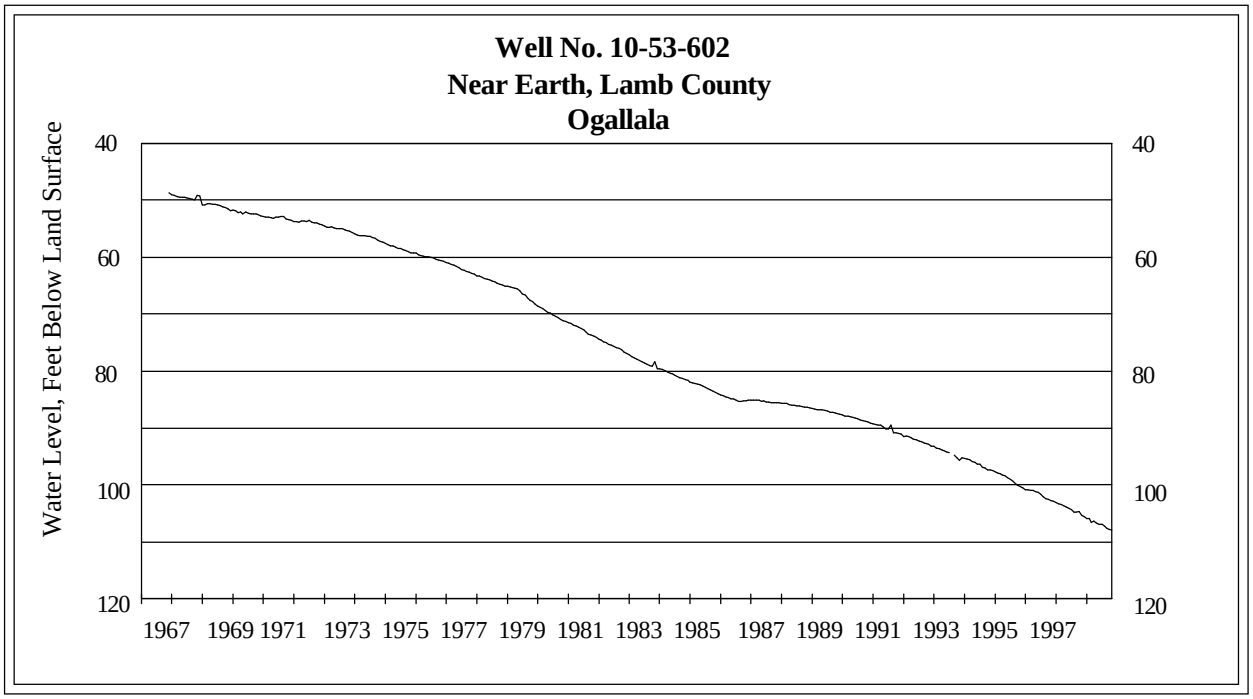
Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage in Acre-Feet and as Percent of Conservation Storage Capacity					
			Late Dec 1997		Late Nov 1997		Late Dec 1996	
NORTH CENTRAL (continued)								
Proctor Lake	41	55,590	48,800	88	46,780	84	55,590	100
Belton Lake	42	434,500	434,500	100	431,740	99	434,500	100
Stillhouse Hollow Lake	43	226,060	226,030	99	226,060	100	212,300	94
Lake Georgetown	44	37,010	36,990	99	32,290	87	26,730	72
Granger Lake	45	54,280	54,280	100	54,280	100	54,280	100
Lake Limestone	46	215,750	211,510	98	179,900	83	142,380	66
Lake Brownwood	47	143,400	125,200	87	125,200	87	142,700	99
TOTAL		11,999,230	11,552,820	96	10,937,110	91	11,256,970	94
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	66,800	100
Lake Bob Sandlin	50	202,300	202,170	99	192,800	95	202,300	100
Lake O' the Pines	51	252,000	252,000	100	252,000	100	252,000	100
Lake Fork Reservoir	52	635,200	621,830	98	606,340	95	628,110	99
Toledo Bend Reservoir	53	4,472,900	4,020,000	90	3,870,000	87	3,772,000	84
Lake Palestine	54	411,300	411,300	100	381,400	93	359,100	87
Lake Tyler	55	73,700	73,700	100	73,700	100	67,630	92
Sam Rayburn Reservoir	56	2,876,300	2,876,300	100	2,601,710	90	1,943,490	68
B. A. Steinhagen Lake	57	94,200	82,630	88	89,020	95	85,010	90
Cedar Creek Reservoir	58	637,050	637,050	100	631,200	99	533,300	84
Lake Livingston	59	1,750,000	1,750,000	100	1,750,000	100	1,750,000	100
Lake Conroe	60	429,900	416,970	97	420,970	98	429,570	99
TOTAL		12,044,350	11,553,450	96	11,078,640	92	10,232,010	85
TRANS-PECOS								
Red Bluff Reservoir	61	307,000	92,510	30	86,880	28	73,700	24
TOTAL		307,000	92,510	30	86,880	28	73,700	24
EDWARDS PLATEAU								
E. V. Spence Reservoir	62	484,800	125,000	26	125,600	26	114,600	24
Twin Buttes Reservoir	63	177,800	43,510	24	42,150	24	67,140	38
O. C. Fisher Lake	64	119,200	16,230	14	16,450	14	17,700	15
O. H. Ivie Reservoir	65	554,340	508,860	92	509,760	92	422,860	76
Lake Buchanan	66	896,980	819,480	91	808,080	90	643,430	72
Amistad Reservoir (Texas)	67	1,771,030	897,460	51	902,320	51	843,950	48
Amistad Reservoir (Texas and Mexico)	(67)	(3,151,300)	(1,485,220)	(47)	(1,486,840)	(47)	(1,264,710)	(40)
TOTAL		4,004,150	2,410,540	60	2,404,360	60	2,109,680	53
SOUTH CENTRAL								
Somerville Lake	68	155,060	155,060	100	155,060	100	155,060	100
Lake Travis	69	1,144,100	1,097,270	96	1,066,870	93	1,035,180	90
Canyon Lake	70	385,600	382,930	99	382,100	99	382,840	99
Coleto Creek Reservoir	71	35,060	34,760	99	35,060	100	26,620	76
Medina Lake	72	254,000	220,910	87	228,300	90	71,890	28
TOTAL		1,973,820	1,890,930	96	1,867,390	95	1,671,590	85

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

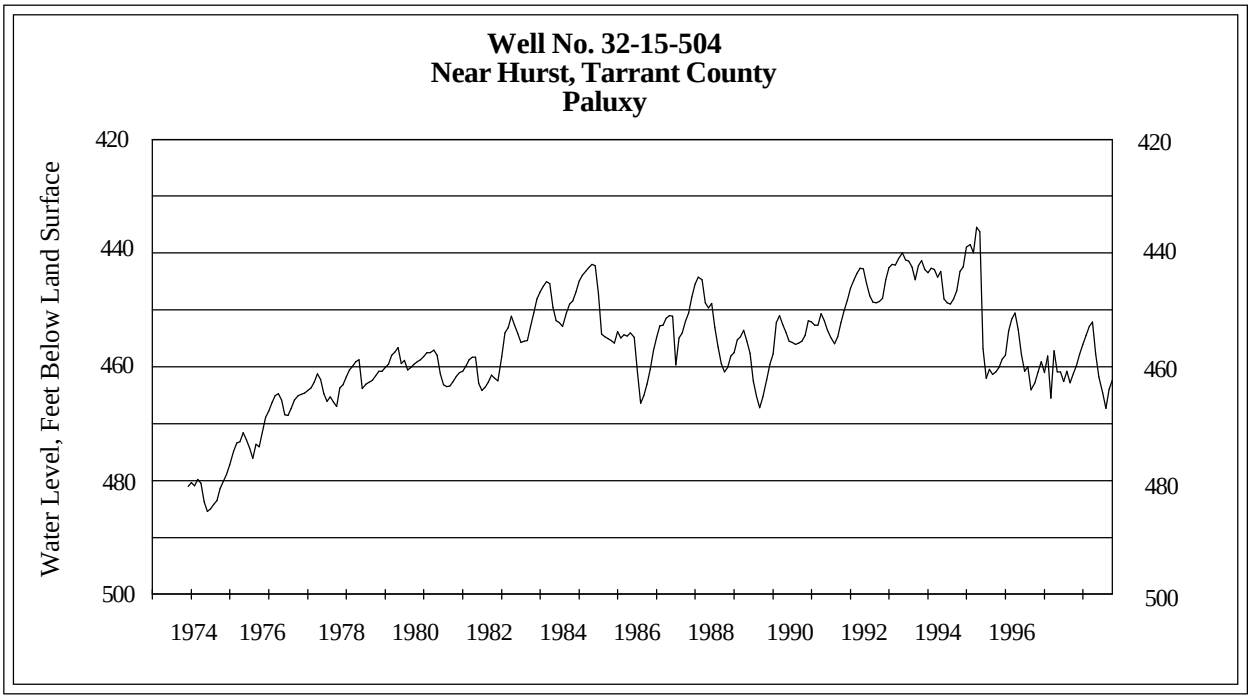
Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage in Acre-Feet and as Percent of Conservation Storage Capacity					
			Late Dec 1997		Late Nov 1997		Late Dec 1996	
UPPER COAST								
Lake Houston	73	128,860	128,860	100	128,860	100	128,860	100
Lake Texana	74	157,900	157,900	100	157,900	100	157,900	100
TOTAL		286,760	286,760	100	286,760	100	286,760	100
SOUTHERN								
Choke Canyon Reservoir	75	695,260	275,000	40	280,710	40	173,290	25
Lake Corpus Christi	76	241,240	170,010	70	179,400	74	116,400	48
Falcon Reservoir (Texas)	77	1,555,120	317,800	20	303,210	19	333,200	21
Falcon Reservoir (Texas and Mexico)	(77)	(2,653,290)	(556,960)	(21)	(545,610)	(21)	(592,630)	(22)
TOTAL		2,491,620	762,810	31	763,320	31	622,890	25
STATE TOTAL		34,557,650	29,401,860	85	28,272,250	82	27,022,660	78

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.

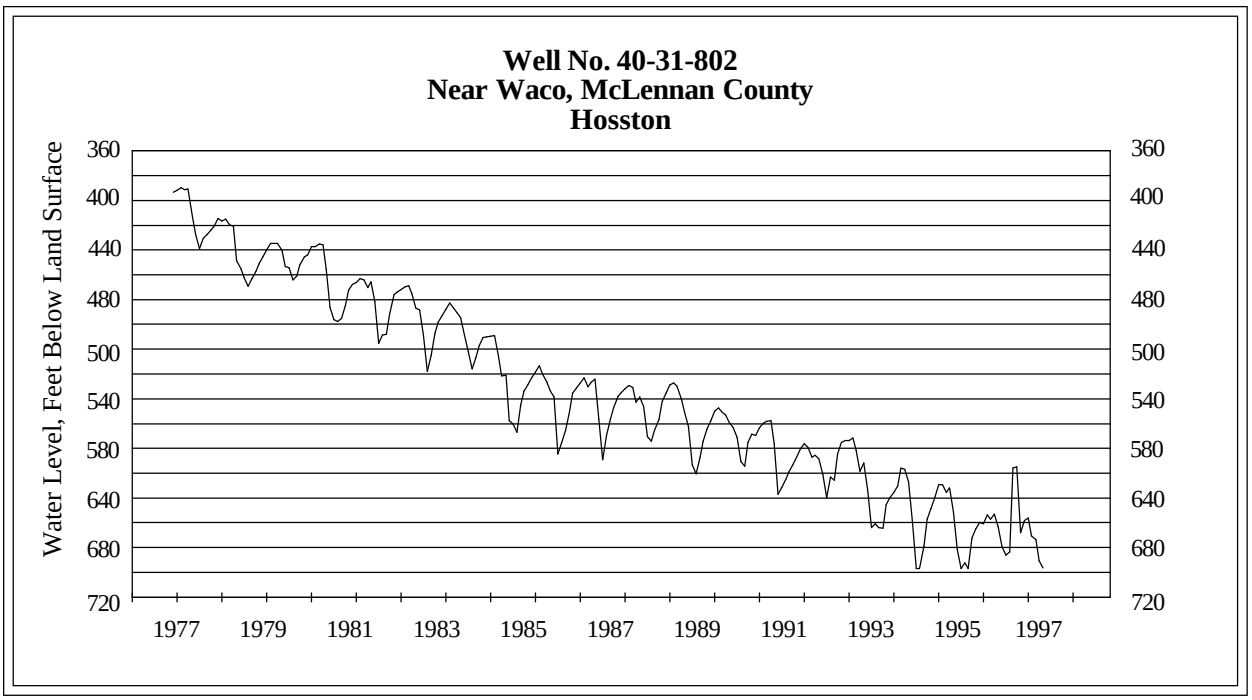
GROUND WATER LEVELS IN OBSERVATION WELLS



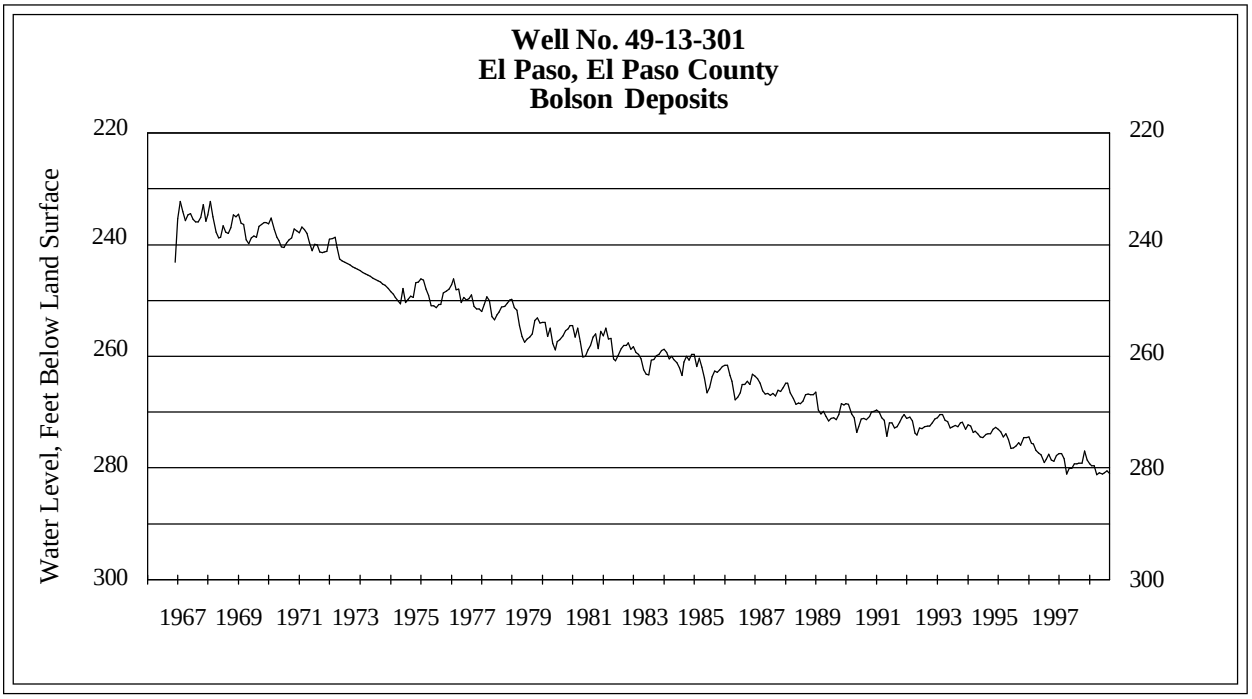
The December water-level measurement in this Ogallala aquifer well, elevation 3667 feet above sea level, was 107.94 feet below land surface. This was 0.9 of a foot below last month's measurement, 2.60 feet below last year's measurement, and 79.79 feet below the initial measurement recorded in 1950.



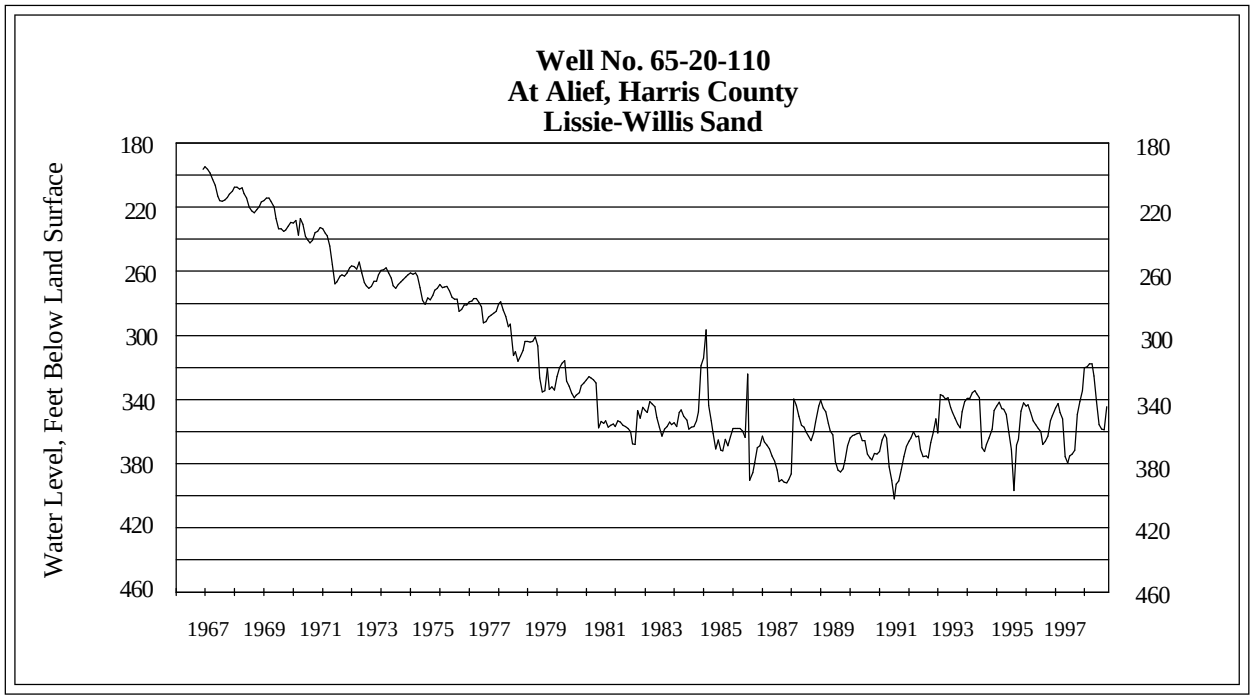
The December water-level measurement in this Paluxy aquifer well, elevation 535 feet above sea level, was 457.48 feet below land surface. This measurement was 4.86 feet above last month's measurement, 2.27 feet above last year's measurement, and 64.09 feet below the initial measurement recorded in 1953.



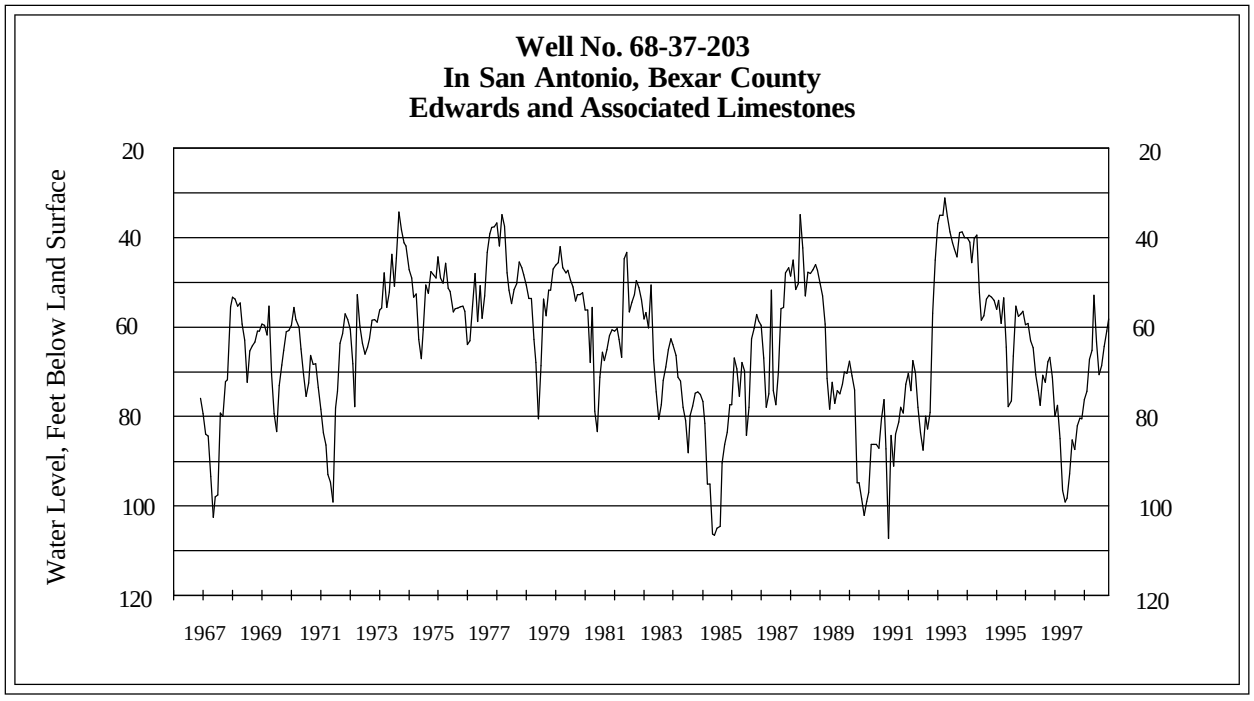
Current water-level measurements are unavailable from this Hosston Formation aquifer well due to cave-in problems. The well is scheduled to be repaired in 1998.



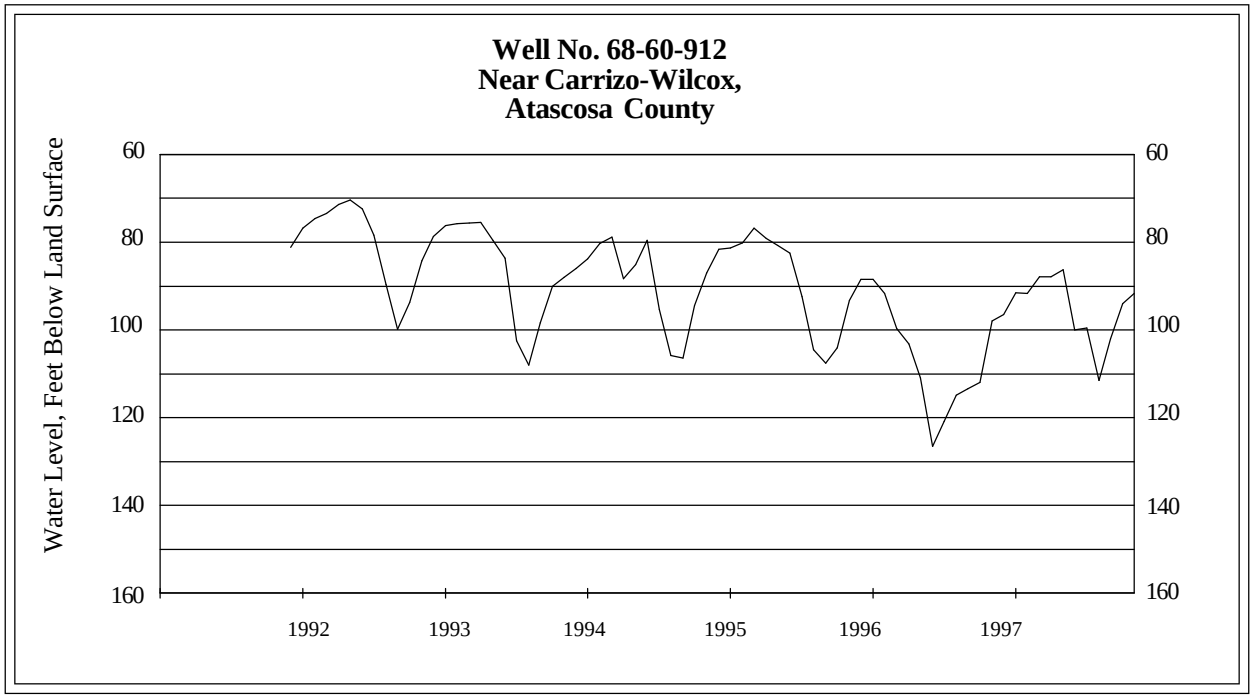
The December water-level measurement in this Bolson Deposits aquifer well, elevation 3882 feet above sea level, was 280.53 feet below land surface. This was 0.45 of a foot above last month's measurement, 1.40 feet below last year's measurement, and 48.63 feet below the initial measurement recorded in 1964.



The December water-level measurement in this Lissie Willis Sand aquifer well, elevation 83 feet above sea level, was not available for this month.



The December water-level measurement in this Edwards aquifer well, elevation 731 feet above sea level, was 58.2 feet below land surface. This was 2.70 feet above last month's measurement, 22.20 feet above last year's measurement, and 1.42 feet above the initial measurement recorded in 1962.

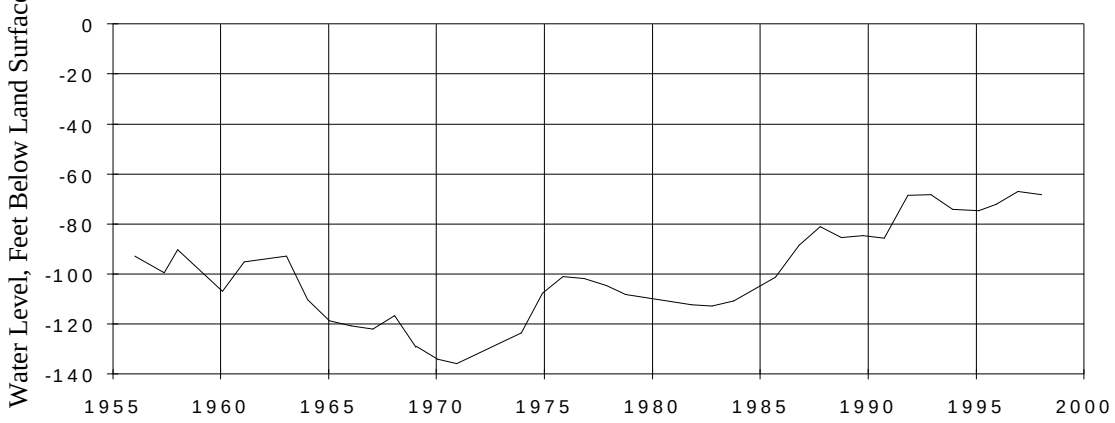


The December water-level measurement in this Carrizo aquifer well, elevation 446 feet above sea level, was 91.76 feet below land surface. This was 2.25 feet above last month's measurement, 12.16 feet above last year's measurement, and 10.51 feet below the initial measurement recorded in 1992.

Hydrograph of the Month

Each month this space features a hydrograph (marked • on the map) depicting different aquifers and different conditions in Texas.

Well No. 13-33-403
Near Quanah, Hardeman County
Blain Aquifer



The December water-level measurement in this Blain aquifer well, elevation 1667 feet above sea level, was 68.2 feet below land surface. This was 1.25 feet below last year's measurement, and 24.64 feet above the initial measurement recorded in 1964.