

# Texas Water Development Board

# WATER Conditions

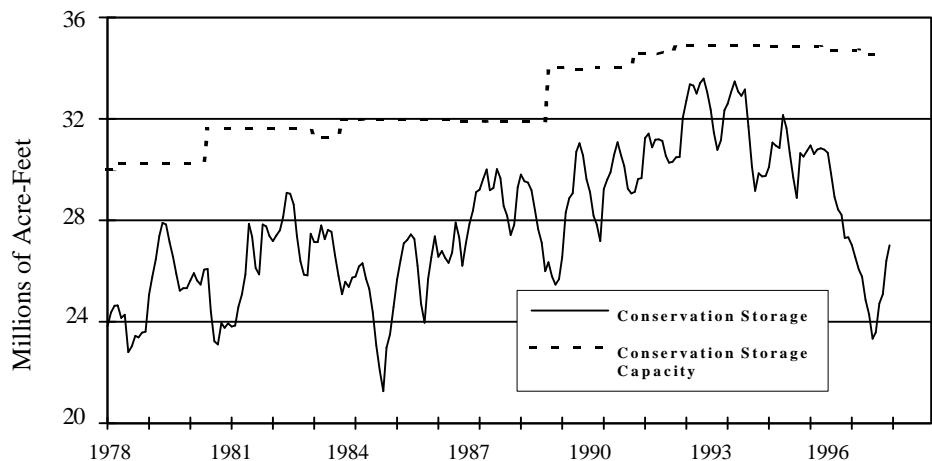
## RESERVOIR STORAGE

*January 1997*

Near the end of December, the 77 reservoirs monitored for this report held 27,022,660 acre-feet in conservation storage. This was 78 percent of the conservation storage capacity of the State's major reservoirs. Compared to last month, storage has increased 615,250 acre-feet. Compared to this month last year, storage has decreased 321,730 acre-feet.

Of the monitored reservoirs, 21 held 100 percent or more of their conservation storage capacities near the end of December. Lakes Sulphur Springs, Graham, Granbury, Cypress Springs, Sandlin, Livingston, 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: Pat Mayse, 8,400; Cooper, 3,600; Benbrook, 730; Roberts, 580; Lewisville, 22,290; Lavon, 4,310; Waco, 6,940; Proctor, 650; Belton, 2,940; Granger, 660; Patman, 309,120; Lake O' the Pines, 5,810; and Somerville, 2,530.

### 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.

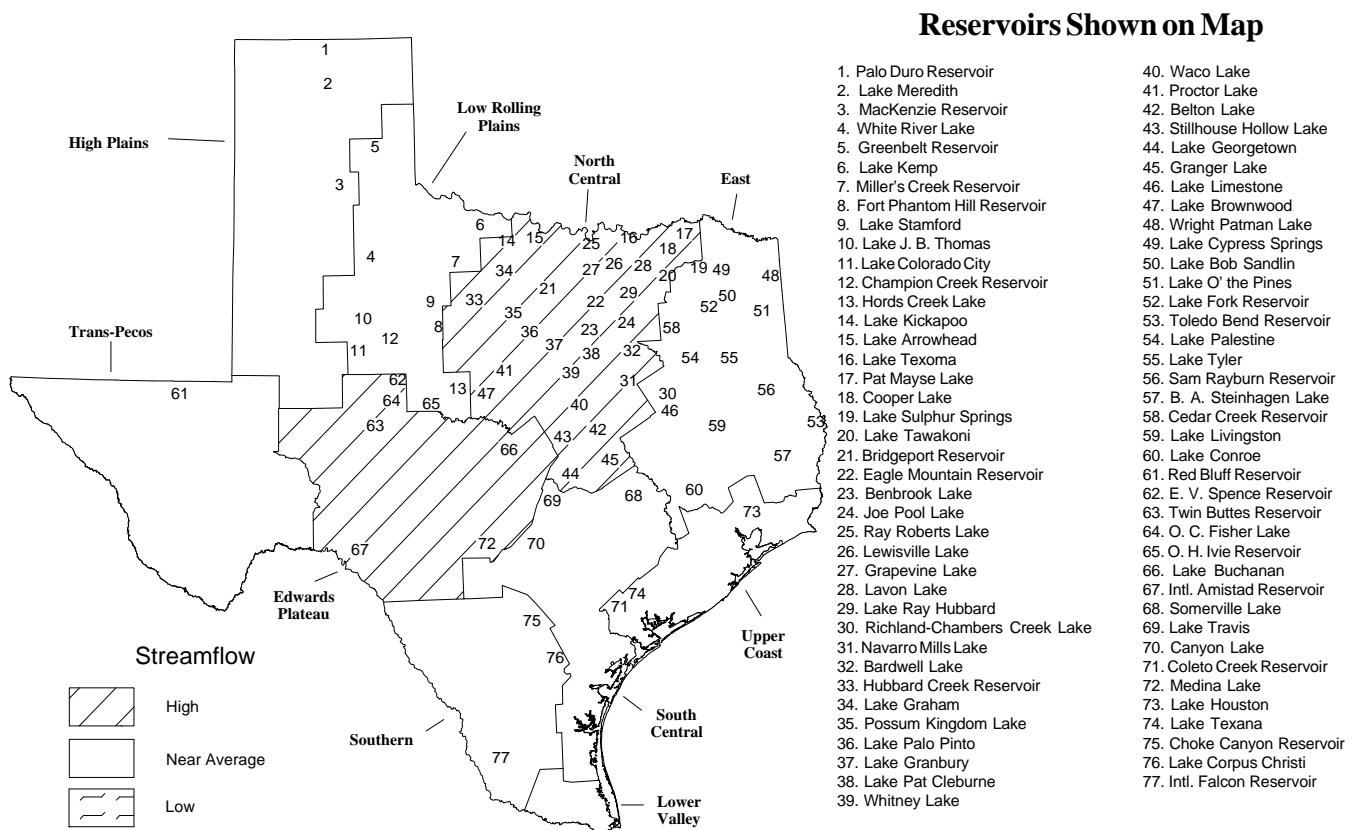
# STREAMFLOW

Streamflow conditions across Texas ranged from above-normal to near-normal during the month of December. Rainfall throughout the middle of the state resulted in above normal streamflow conditions being reported across North-central and the Edwards Plateau climatic divisions. The remainder of the state reported near-normal flow rates. 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 Clifton. Streamflow past the gage was above normal for the fifth consecutive month, averaging 217 cfs, or 986 percent of the monthly reference period median. This was 155.3 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 averaged 5.04 cfs during the month, or 1,938 percent of the reference period median. This value was above-normal, 1.58 cfs above the station's near-normal December flow level. The index station for South-central and the Southern Texas is located on the Guadalupe River near Spring Branch. Flow during the month at the station was near-normal, averaging 242 cfs past the gage. This was 123 percent of the month's reference period median flow rate and was 195 cfs below the above-normal streamflow level.

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## STREAMFLOW CONDITIONS FOR DECEMBER COMPARED WITH PAST RECORD



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 1996	Late Nov 1996	Late Dec 1995			
HIGH PLAINS								
Palo Duro Reservoir	1	60,900	12,450	20	13,900	23	3,070	5
Lake Meredith (Texas)	2	500,000	367,220	73	371,600	74	326,840	65
Lake Meredith (Texas and Oklahoma)	(2)	(779,560)	(367,220)	(47)	(371,600)	(48)	(326,840)	(41)
MacKenzie Reservoir	3	46,250	7,700	17	7,790	17	7,770	17
White River Lake	4	31,850	7,490	24	7,900	25	19,080	43
TOTAL		639,000	394,860	62	401,190	63	356,760	56
LOW ROLLING PLAINS								
Greenbelt Reservoir	5	58,200	21,350	37	12,600	22	21,600	37
Lake Kemp	6	319,600	205,990	64	202,080	63	258,270	81
Miller's Creek Reservoir	7	27,890	12,130	43	12,130	43	13,250	48
Fort Phantom Hill Reservoir	8	70,030	58,200	83	58,880	84	56,840	77
Lake Stamford	9	52,700	21,530	41	21,290	40	31,650	60
Lake J. B. Thomas	10	202,300	9,100	4	8,890	4	15,070	7
Lake Colorado City	11	30,800	18,500	60	19,120	62	21,540	70
Champion Creek Reservoir	12	41,600	20,840	50	20,840	50	31,560	76
Hords Creek Lake	13	8,600	6,560	76	6,710	78	6,320	73
TOTAL		811,720	374,200	46	362,540	45	456,100	56
NORTH CENTRAL								
Lake Kickapoo	14	106,000	66,500	63	66,500	63	91,240	86
Lake Arrowhead	15	262,100	197,550	75	194,480	74	229,890	88
Lake Texoma	16	2,722,300	2,650,000	97	2,722,300	100	2,650,000	97
Pat Mayse Lake	17	124,500	124,500	100	124,500	100	108,800	87
Cooper Lake	18	273,000	273,000	100	273,000	100	258,080	95
Lake Sulphur Springs	19	17,710	17,710	100	17,710	100	13,370	75
Lake Tawakoni	20	936,200	785,600	84	774,700	83	812,300	87
Bridgeport Reservoir	21	374,830	328,700	88	326,600	87	336,500	90
Eagle Mountain Reservoir	22	178,380	178,260	99	178,380	100	161,760	91
Benbrook Lake	23	88,200	88,200	100	88,200	100	87,310	99
Joe Pool Lake	24	175,800	166,380	95	165,370	94	159,800	91
Ray Roberts Lake	25	798,760	798,760	100	798,760	100	755,130	95
Lewisville Lake	26	555,000	555,000	100	555,000	100	442,790	80
Grapevine Lake	27	187,700	181,590	97	187,700	100	149,690	80
Lavon Lake	28	443,800	443,800	100	443,800	100	340,900	77
Lake Ray Hubbard	29	490,000	489,200	99	477,300	97	422,500	86
Richland-Chambers Creek Lake	30	1,103,820	882,490	80	850,690	77	1,027,660	90
Navarro Mills Lake	31	55,810	44,980	81	37,450	67	48,400	87
Bardwell Lake	32	53,580	52,150	97	52,300	98	47,290	88
Hubbard Creek Reservoir	33	317,800	314,900	99	317,800	100	246,400	78
Lake Graham	34	45,000	45,000	100	45,000	100	45,000	100
Possum Kingdom Lake	35	551,820	545,410	99	551,820	100	510,480	90
Lake Palo Pinto	36	42,200	39,840	94	42,200	100	38,950	92
Lake Granbury	37	135,680	135,680	100	135,680	100	135,680	100
Lake Pat Cleburne	38	25,300	20,200	80	19,870	79	21,000	83
Whitney Lake	39	622,800	618,540	99	622,800	100	547,320	88
Waco Lake	40	144,550	144,550	100	144,550	100	139,750	92

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

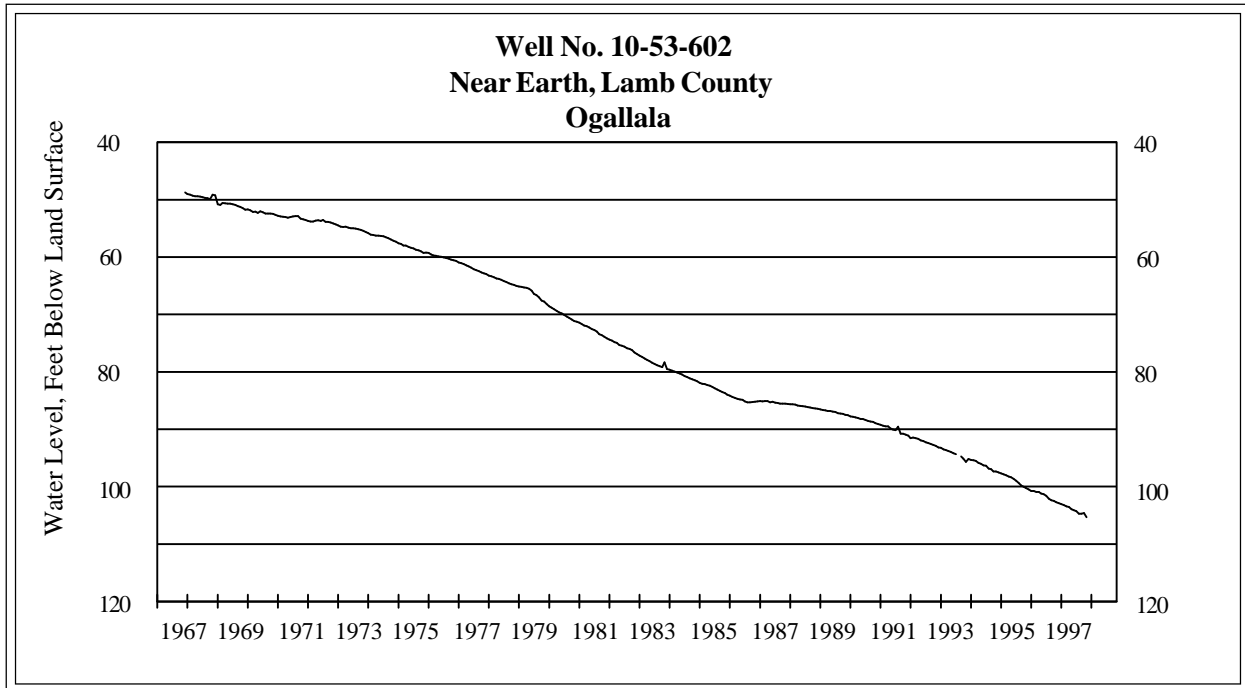
Name of Lake or Reservoir	: No.:	: Conservation: Storage Capacity (acre-feet) :	Conservation Storage in Acre-Feet and as Percent of Conservation Storage Capacity					
			: on :	: Late Dec 1996	: Late Nov 1996	: Late Dec 1995		
NORTH CENTRAL (continued)								
Proctor Lake	41	55,590	55,590	100	55,590	100	57,090	96
Belton Lake	42	434,500	434,500	100	434,500	100	429,200	97
Stillhouse Hollow Lake	43	226,060	212,300	94	194,090	86	226,280	96
Lake Georgetown	44	37,010	26,730	72	20,860	56	27,810	75
Granger Lake	45	54,280	54,280	100	54,280	100	64,540	100
Lake Limestone	46	215,750	142,380	66	139,420	65	203,400	94
Lake Brownwood	47	143,400	142,700	99	142,000	99	122,400	85
TOTAL		11,999,230	11,256,970	94	11,255,200	94	10,958,710	91
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	63,770	95
Lake Bob Sandlin	50	202,300	202,300	100	200,450	99	180,890	89
Lake O' the Pines	51	252,000	252,000	100	252,000	100	244,390	97
Lake Fork Reservoir	52	635,200	628,110	99	632,200	99	579,900	91
Toledo Bend Reservoir	53	4,472,900	3,772,000	84	3,488,000	78	3,476,000	78
Lake Palestine	54	411,300	359,100	87	340,600	83	344,100	84
Lake Tyler	55	73,700	67,630	92	65,470	89	68,940	94
Sam Rayburn Reservoir	56	2,876,300	1,943,490	68	1,768,950	62	2,065,380	72
B. A. Steinhagen Lake	57	94,200	85,010	90	94,200	100	72,680	77
Cedar Creek Reservoir	58	637,050	533,300	84	516,200	81	596,700	88
Lake Livingston	59	1,750,000	1,750,000	100	1,750,000	100	1,750,000	100
Lake Conroe	60	429,900	429,570	99	412,270	96	428,970	99
TOTAL		12,044,350	10,232,010	85	9,729,840	81	10,014,420	83
TRANS-PECOS								
Red Bluff Reservoir	61	307,000	73,700	24	71,200	23	72,690	24
TOTAL		307,000	73,700	24	71,200	23	72,690	24
EDWARDS PLATEAU								
E. V. Spence Reservoir	62	484,800	114,600	24	116,000	24	160,900	33
Twin Buttes Reservoir	63	177,800	67,140	38	66,080	37	41,080	23
O. C. Fisher Lake	64	119,200	17,700	15	17,730	15	17,790	15
O. H. Ivie Reservoir	65	554,340	422,860	76	419,560	76	527,560	95
Lake Buchanan	66	896,980	643,430	72	617,850	69	764,610	85
Amistad Reservoir (Texas)	67	1,771,030	843,950	48	855,300	48	1,062,030	56
Amistad Reservoir (Texas and Mexico)	(67)	(3,151,300)	(1,264,710)	(40)	(1,268,760)	(40)	(1,226,600)	(36)
TOTAL		4,004,150	2,109,680	53	2,092,520	52	2,573,970	64
SOUTH CENTRAL								
Somerville Lake	68	155,060	155,060	100	151,750	98	160,100	100
Lake Travis	69	1,144,100	1,035,180	90	968,280	85	976,440	85
Canyon Lake	70	385,600	382,840	99	379,630	98	371,160	96
Coletto Creek Reservoir	71	35,060	26,620	76	27,580	79	25,050	71
Medina Lake	72	254,000	71,890	28	71,890	28	160,900	63
TOTAL		1,973,820	1,671,590	85	1,599,130	81	1,693,650	86

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

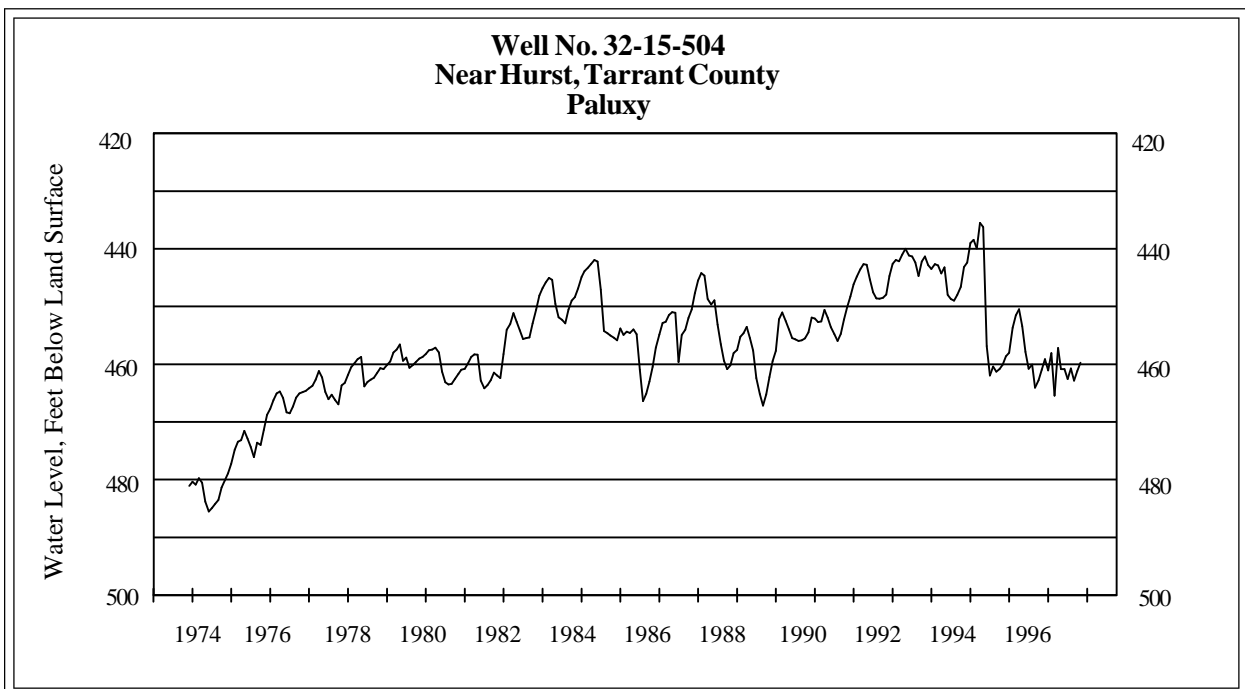
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			: on : Map:	: Late Dec 1996	: Late Nov 1996	: Late Dec 1995		
UPPER COAST								
Lake Houston	73	128,860	128,860	100	128,860	100	140,500	100
Lake Texana	74	157,900	157,900	100	156,990	99	149,600	95
TOTAL		286,760	286,760	100	285,850	99	290,100	100
SOUTHERN								
Choke Canyon Reservoir	75	695,260	173,290	25	177,810	26	271,650	39
Lake Corpus Christi	76	241,240	116,400	48	119,200	49	131,000	54
Falcon Reservoir (Texas)	77	1,555,120	333,200	21	312,930	20	525,340	34
Falcon Reservoir (Texas and Mexico)	(77)	(2,653,290)	(592,630)	(22)	(570,740)	(21)	(795,310)	(30)
TOTAL		2,491,620	622,890	25	609,940	24	927,990	37
STATE TOTAL		34,557,650	27,022,660	78	26,407,410	76	27,344,390	79

**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.

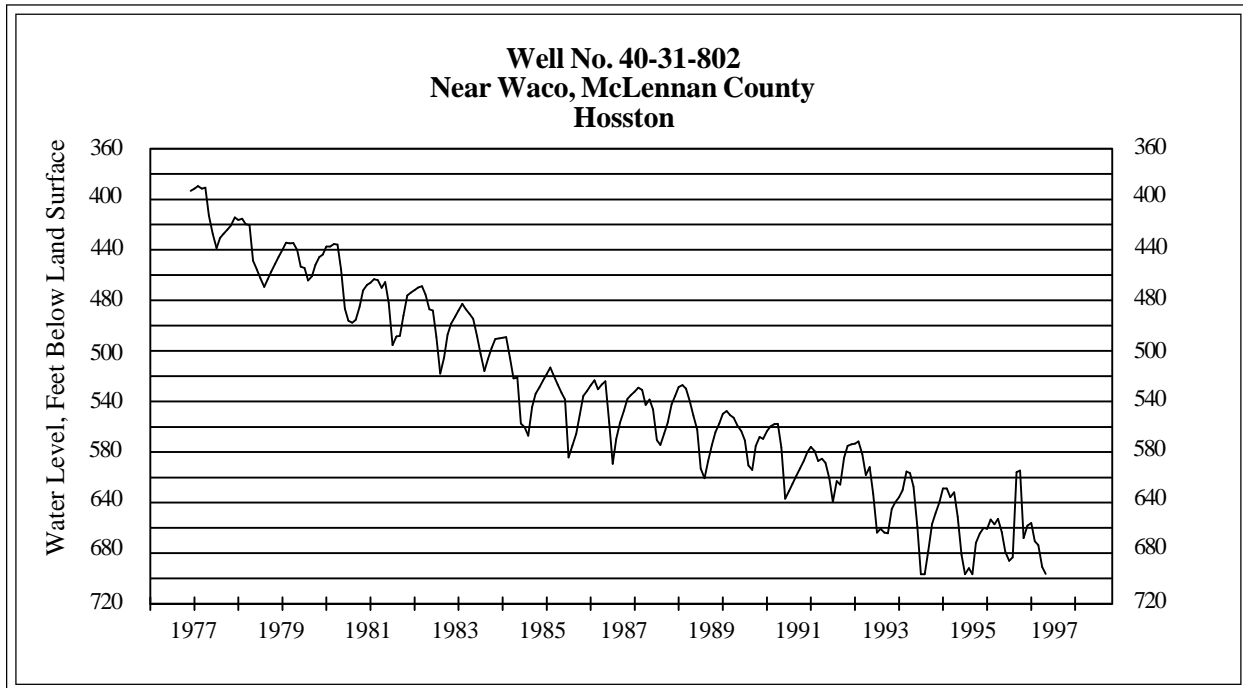
# GROUND WATER LEVELS IN OBSERVATION WELLS



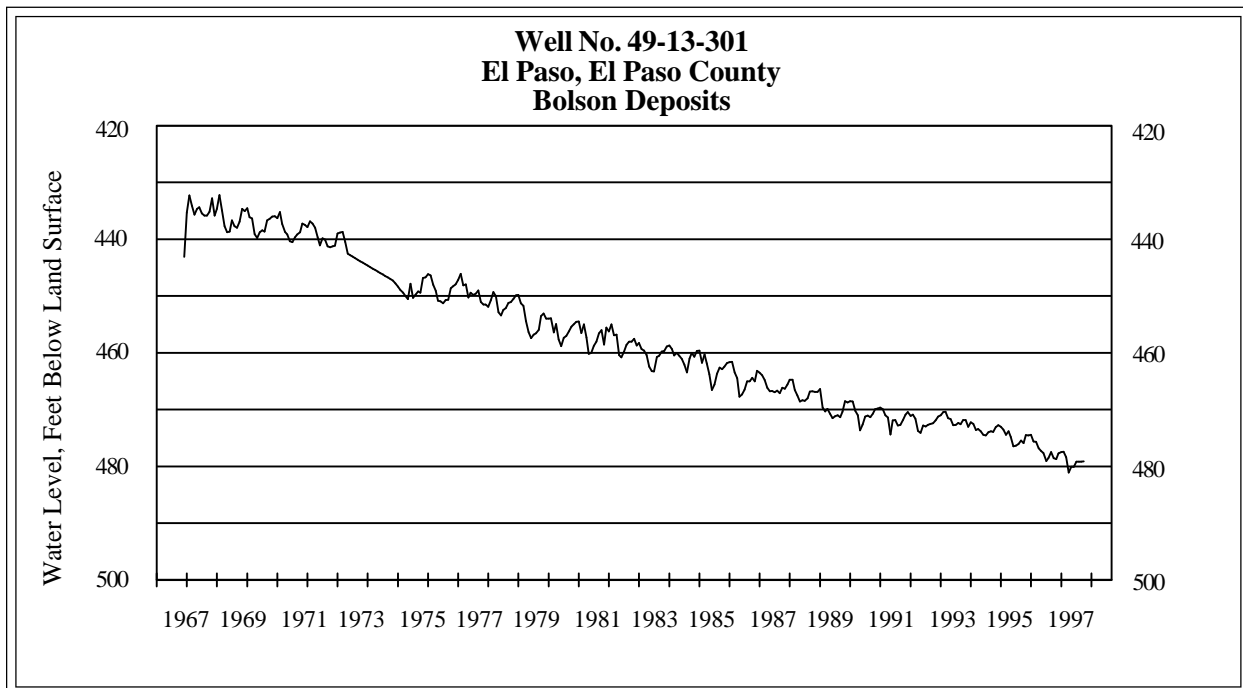
The December water-level measurement in this Ogallala aquifer well, elevation 3,667 feet above sea level, was 105.34 feet below land surface. This was 0.68 of a foot below last month's measurement, 2.60 feet below last year's measurement, and 77.19 feet below the initial measurement recorded in 1950.



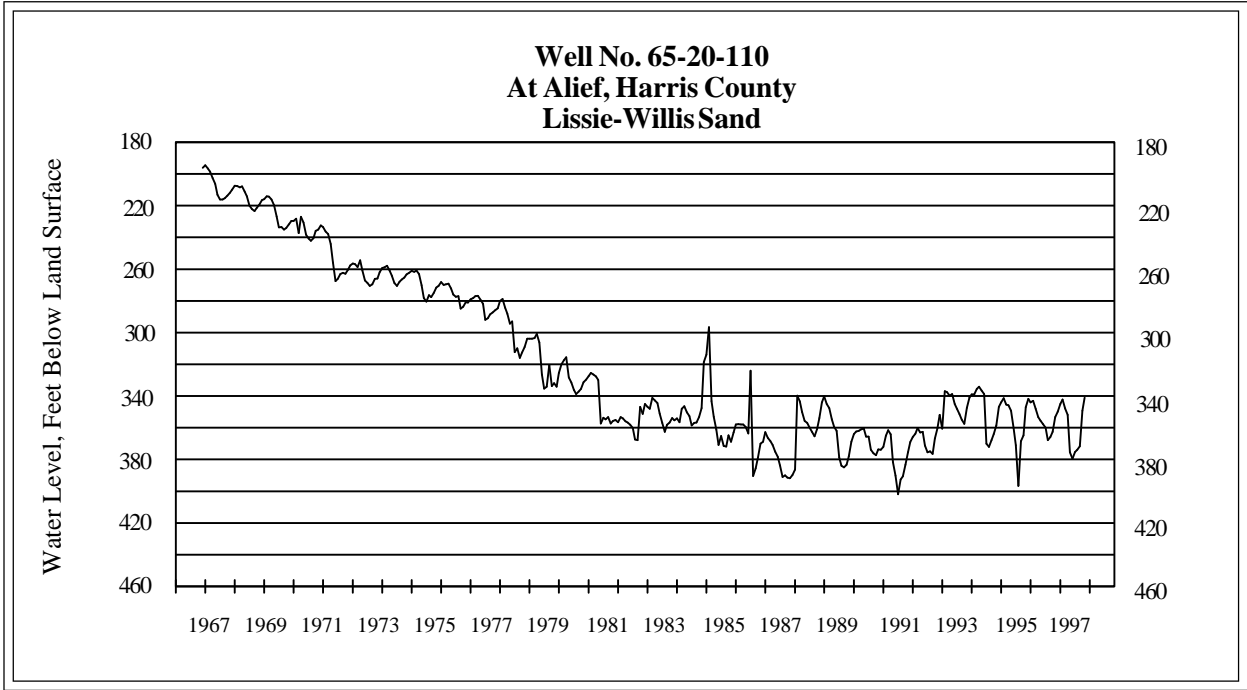
The December water-level measurement in this Paluxy aquifer well, elevation 535 feet above sea level, was 459.75 feet below land surface. This was 1.43 feet above last month's measurement, 1.22 feet above last year's measurement, and 66.36 feet below the initial measurement recorded in 1953.



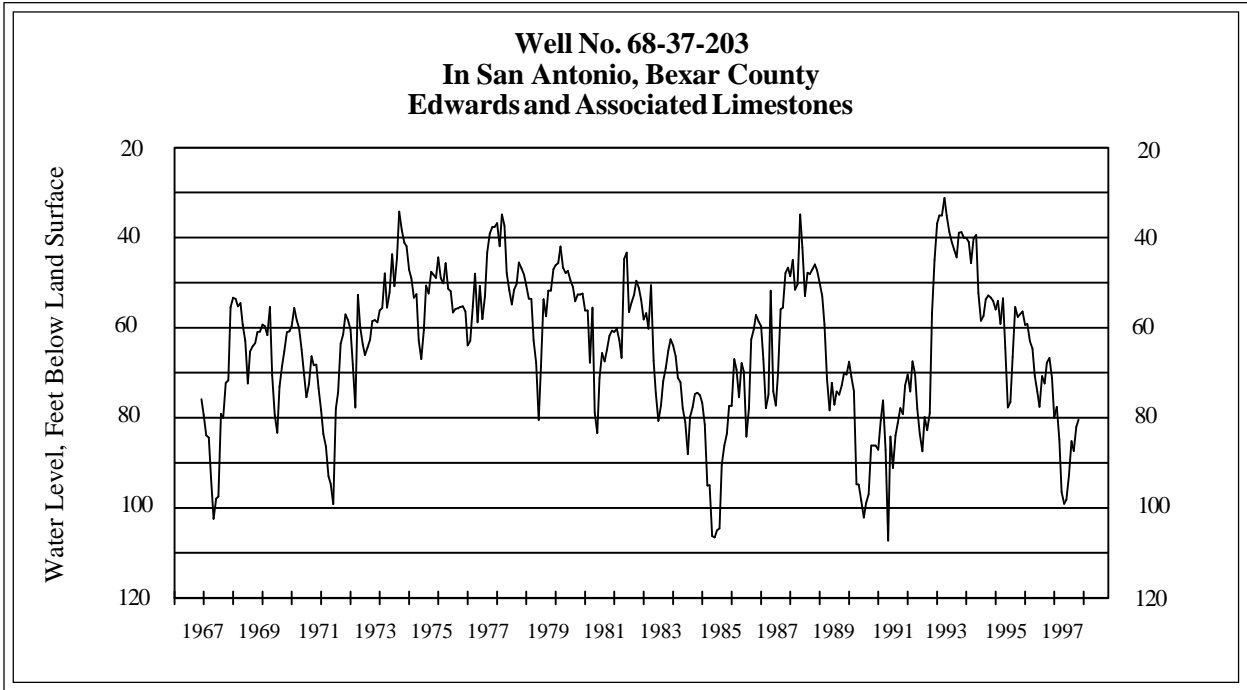
The December water-level measurement in this Hosston Formation aquifer well, elevation 593 feet above sea level, was not available due to a bridged casing. This well will be replaced with another Hosston well in the Waco area.



The December water-level measurement in this Bolson Deposits aquifer well, elevation 3,882 feet above sea level, was 279.13 feet below land surface. This was 0.08 of a foot above the last measurement (in October), 0.59 of a foot below last year's measurement, and 47.89 feet below the initial measurement recorded in 1964.

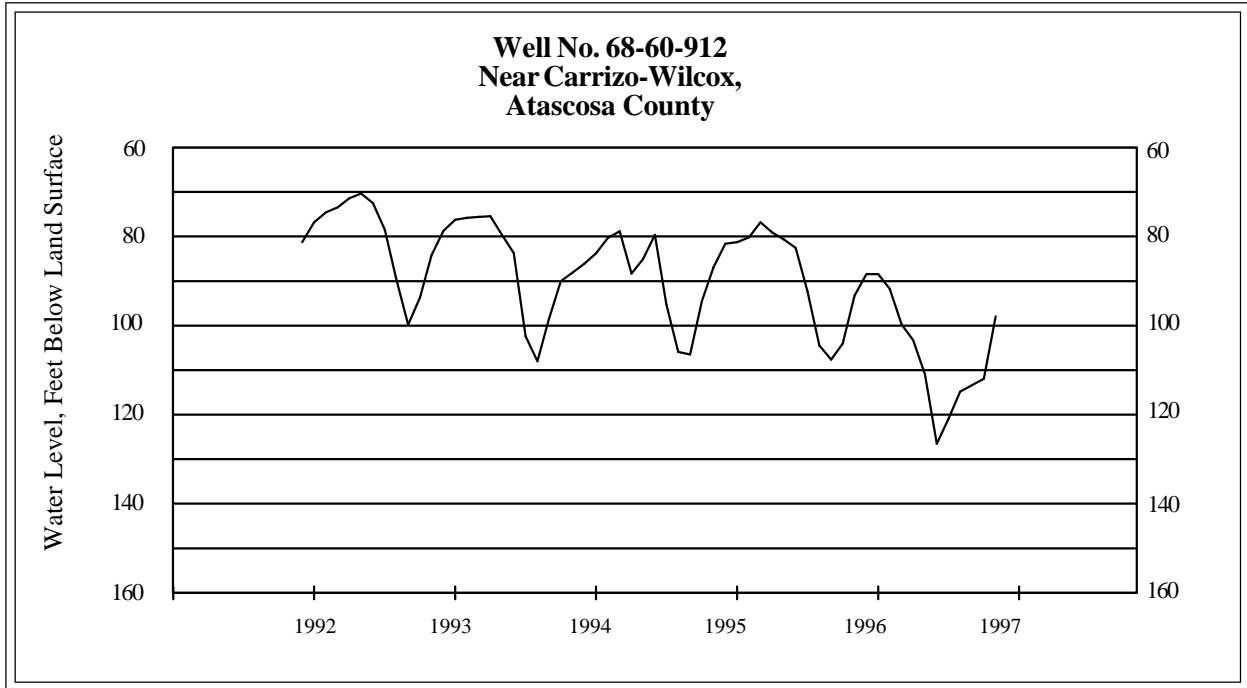


The December water-level measurement in this Lissie Willis Sand aquifer well, elevation 83 feet above sea level, was 341.19 feet below land surface. This was 8.17 feet above last month's measurement, 12.07 feet above last year's measurement, and 305.15 feet below the initial measurement recorded in 1939.



The December water-level measurement in this Edwards aquifer well, elevation 731 feet above sea level, was 80.40 feet below land surface. This was 1.6 feet above last month's measurement, 13.70 feet below last year's measurement, and 20.78 feet below the initial measurement recorded in 1962.





The December water-level measurement in this Carrizo aquifer well, elevation 446 feet above sea level, was 97.97 feet below land surface. This was 13.97 feet above last month's measurement, 4.72 feet below last year's measurement, and 16.72 feet below the initial measurement recorded in 1992.

