Texas Water Development Board

WATER Conditions

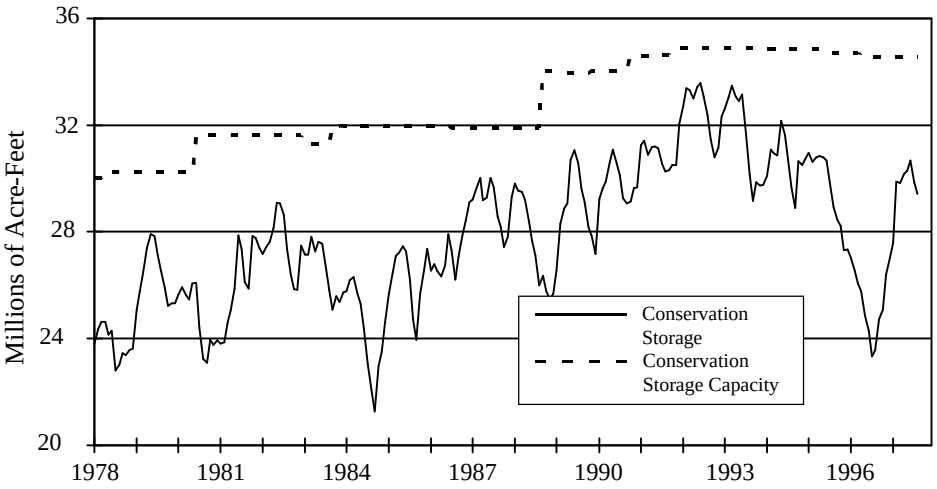
RESERVOIR STORAGE

September 1997

Near the end of August, the 77 reservoirs monitored for this report held 29,426,450 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 decreased 419,090 acre-feet. Compared to this month last year, storage has increased 5,841,990 acre-feet.

Of the monitored reservoirs, 14 held 100 percent or more of their conservation storage capacities near the end of August. Lakes Fort Phantom Hill, Sulphur Springs, Graham, Granbury, Cypress Springs, Tyler, Cedar Creek, 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: Belton, 2,070; Stillhouse, 200; Granger, 660; Patman, 141,580; Lake O' the Pines, 21,170; and Canyon, 1,640.

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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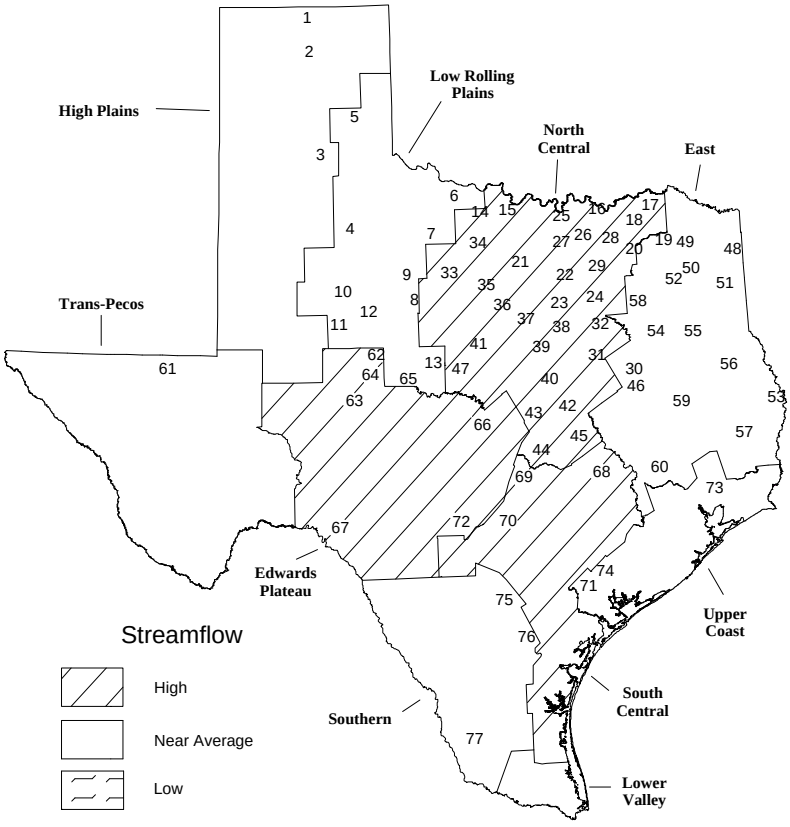
STREAMFLOW

Streamflow conditions across Texas ranged from near-normal to above-normal during the month of August. While rainfall was minimal throughout the state, temperatures remained mostly in the nineties, with few 100 degree days across the state. Noteworthy news for August: no tropical storms or hurricanes formed in the Gulf of Mexico or Atlantic Ocean during the month. A strong El Nino event in the Pacific could have contributed to the absence of these storms. The last August without one of these events was 1961. 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 August was above-normal, averaging 786 cubic feet per second (cfs). The monthly average flow rate, when compared to the 1961-90 reference period, was 482 percent of the reference period median and 382 cfs above the near-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 49.6 cfs, or 516 percent of the monthly reference period median. This was 10.5 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 .0001 cfs during the month, or .0002 percent of the reference period median. This value was near-normal, 4.179cfs below the station's above-normal August flow level. 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 of August.

STREAMFLOW CONDITIONS FOR AUGUST 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 Aug 1997		Late Jul 1997		Late Aug 1996	
HIGH PLAINS								
Palo Duro Reservoir	1	60,900	8,560	14	10,840	18	6,080	10
Lake Meredith (Texas)	2	500,000	399,640	80	377,640	76	376,810	75
Lake Meredith (Texas and Oklahoma)	(2)	(779,560)	(399,640)	(51)	(377,640)	(48)	(376,810)	(48)
MacKenzie Reservoir	3	46,250	9,260	20	9,070	20	8,310	18
White River Lake	4	31,850	14,380	45	15,320	48	8,560	27
TOTAL		639,000	431,840	68	412,870	65	399,760	63
LOW ROLLING PLAINS								
Greenbelt Reservoir	5	58,200	28,120	48	28,590	49	20,970	36
Lake Kemp	6	319,600	255,690	80	255,690	80	157,560	49
Miller's Creek Reservoir	7	27,890	13,380	48	13,940	50	14,150	51
Fort Phantom Hill Reservoir	8	70,030	70,030	100	70,030	100	43,060	61
Lake Stamford	9	52,700	34,920	66	34,920	66	22,970	44
Lake J. B. Thomas	10	202,300	21,400	11	23,060	11	8,710	4
Lake Colorado City	11	30,800	20,900	68	20,800	68	17,750	58
Champion Creek Reservoir	12	41,600	22,400	54	24,000	58	23,210	56
Hords Creek Lake	13	8,600	7,630	89	8,010	93	5,690	66
TOTAL		811,720	474,470	58	479,040	59	314,070	39
NORTH CENTRAL								
Lake Kickapoo	14	106,000	70,820	67	68,900	65	67,460	64
Lake Arrowhead	15	262,100	219,010	84	225,930	86	187,280	71
Lake Texoma	16	2,722,300	2,606,900	96	2,666,000	98	2,690,100	99
Pat Mayse Lake	17	124,500	114,000	92	117,200	94	124,400	99
Cooper Lake	18	273,000	259,590	95	265,450	97	256,770	94
Lake Sulphur Springs	19	17,710	17,710	100	17,710	100	11,400	64
Lake Tawakoni	20	936,200	927,000	99	924,800	99	692,700	74
Bridgeport Reservoir	21	374,830	359,600	96	371,900	99	269,400	72
Eagle Mountain Reservoir	22	178,380	168,460	94	175,360	98	140,060	79
Benbrook Lake	23	88,200	87,230	99	87,830	99	85,520	97
Joe Pool Lake	24	175,800	168,270	96	171,860	98	143,690	82
Ray Roberts Lake	25	798,760	767,850	96	783,040	98	719,840	90
Lewisville Lake	26	555,000	525,950	95	555,000	100	315,400	57
Grapevine Lake	27	187,700	169,730	90	179,330	96	125,970	67
Lavon Lake	28	443,800	392,170	88	420,750	95	242,630	55
Lake Ray Hubbard	29	490,000	460,900	94	473,300	97	368,500	75
Richland-Chambers Creek Lake	30	1,103,820	1,083,620	98	1,068,520	97	869,910	79
Navarro Mills Lake	31	55,810	51,340	92	53,410	96	36,920	66
Bardwell Lake	32	53,580	49,410	92	49,700	93	40,320	75
Hubbard Creek Reservoir	33	317,800	307,000	97	308,000	97	218,700	69
Lake Graham	34	45,000	45,000	100	45,000	100	42,200	94
Possum Kingdom Lake	35	551,820	523,360	95	541,540	98	492,300	89
Lake Palo Pinto	36	42,200	40,440	96	40,130	95	42,200	100
Lake Granbury	37	135,680	135,680	100	135,680	100	135,680	100
Lake Pat Cleburne	38	25,300	22,700	90	24,000	95	17,800	70
Whitney Lake	39	622,800	579,600	93	600,220	96	454,640	73
Waco Lake	40	144,550	139,190	96	143,770	99	144,550	100

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

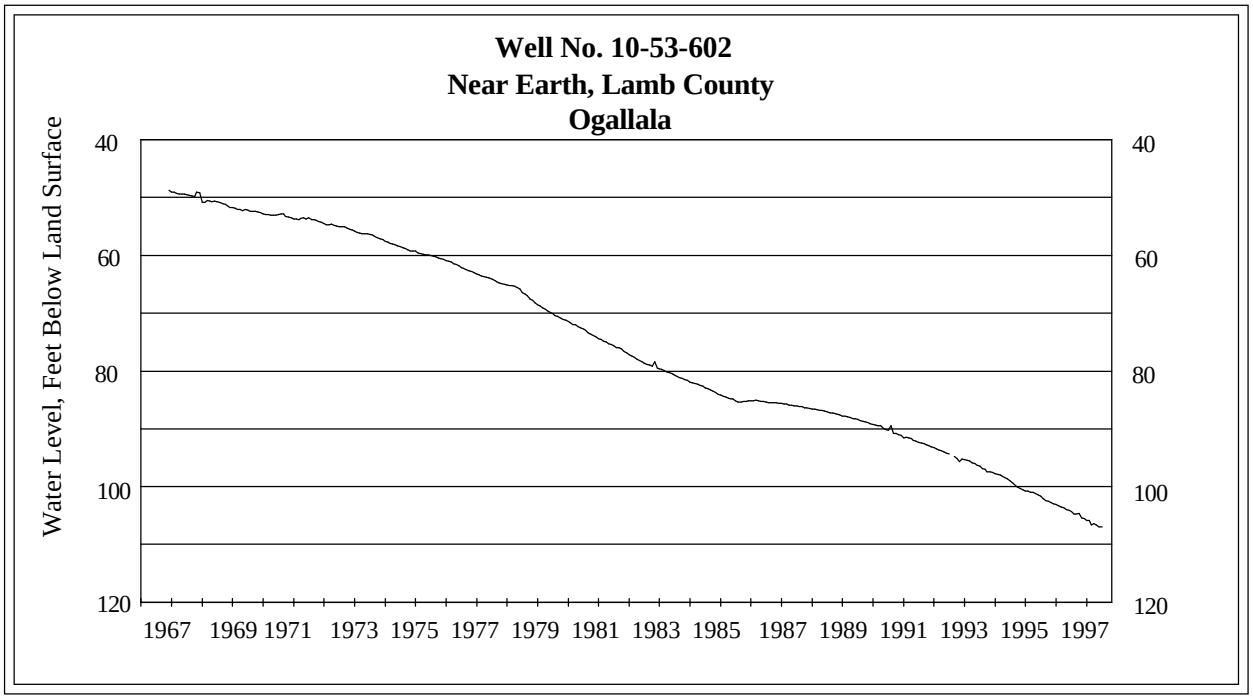
Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage in Acre-Feet and as Percent of Conservation Storage Capacity					
			Late Aug 1997		Late Jul 1997		Late Aug 1996	
NORTH CENTRAL (continued)								
Proctor Lake	41	55,590	55,090	99	55,590	100	55,590	100
Belton Lake	42	434,500	434,500	100	434,500	100	387,860	89
Stillhouse Hollow Lake	43	226,060	226,060	100	226,060	100	180,450	80
Lake Georgetown	44	37,010	35,630	96	37,010	100	15,640	42
Granger Lake	45	54,280	54,280	100	54,280	100	48,730	90
Lake Limestone	46	215,750	203,150	94	211,870	98	149,170	69
Lake Brownwood	47	143,400	137,000	96	140,600	98	116,300	81
TOTAL		11,999,230	11,438,240	95	11,674,240	97	9,890,080	82
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	66,460	99	65,450	98
Lake Bob Sandlin	50	202,300	200,260	99	198,850	98	172,570	85
Lake O' the Pines	51	252,000	252,000	100	252,000	100	248,450	99
Lake Fork Reservoir	52	635,200	627,830	99	626,740	99	558,280	88
Toledo Bend Reservoir	53	4,472,900	4,180,000	93	4,310,000	96	3,363,000	75
Lake Palestine	54	411,300	389,200	95	399,800	97	329,700	80
Lake Tyler	55	73,700	73,700	100	73,700	100	60,460	82
Sam Rayburn Reservoir	56	2,876,300	2,861,410	99	2,726,380	95	1,599,010	56
B. A. Steinhagen Lake	57	94,200	74,160	79	91,140	97	92,620	98
Cedar Creek Reservoir	58	637,050	637,050	100	637,050	100	512,000	80
Lake Livingston	59	1,750,000	1,740,000	99	1,730,000	99	1,497,000	86
Lake Conroe	60	429,900	398,970	93	403,970	94	405,070	94
TOTAL		12,044,350	11,644,080	97	11,658,790	97	9,046,310	75
TRANS-PECOS								
Red Bluff Reservoir	61	307,000	49,770	16	50,350	16	59,360	19
TOTAL		307,000	49,770	16	50,350	16	59,360	19
EDWARDS PLATEAU								
E. V. Spence Reservoir	62	484,800	135,000	28	138,000	28	108,200	22
Twin Buttes Reservoir	63	177,800	50,200	28	58,240	33	56,260	32
O. C. Fisher Lake	64	119,200	18,420	15	19,200	16	16,080	13
O. H. Ivie Reservoir	65	554,340	538,860	97	546,860	99	384,960	69
Lake Buchanan	66	896,980	846,770	94	853,200	95	574,420	64
Amistad Reservoir (Texas)	67	1,771,030	942,860	53	956,640	54	751,530	42
Amistad Reservoir (Texas and Mexico)	(67)	(3,151,300)	(1,530,620)	(49)	(1,531,430)	(49)	(1,007,710)	(32)
TOTAL		4,004,150	2,532,110	63	2,572,140	64	1,891,450	47
SOUTH CENTRAL								
Somerville Lake	68	155,060	148,340	96	150,000	97	107,860	70
Lake Travis	69	1,144,100	1,097,330	96	1,124,600	98	727,220	64
Canyon Lake	70	385,600	385,600	100	385,600	100	344,470	89
Coleto Creek Reservoir	71	35,060	33,080	94	34,820	99	24,330	69
Medina Lake	72	254,000	247,600	97	254,000	100	80,300	32
TOTAL		1,973,820	1,911,950	97	1,949,020	99	1,284,180	65

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

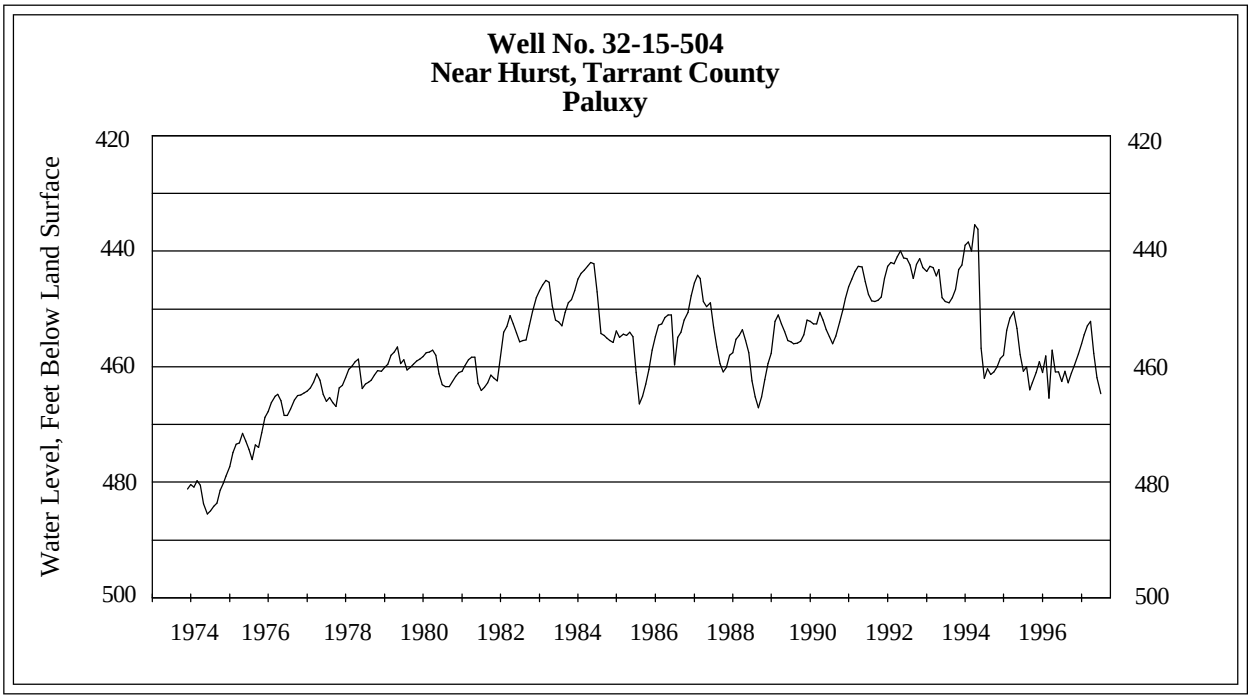
Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage in Acre-Feet and as Percent of Conservation Storage Capacity					
			Late Aug 1997		Late Jul 1997		Late Aug 1996	
UPPER COAST								
Lake Houston	73	128,860	128,860	100	128,860	100	128,860	100
Lake Texana	74	157,900	150,480	95	152,200	96	157,900	100
TOTAL		286,760	279,340	97	281,060	98	286,760	100
SOUTHERN								
Choke Canyon Reservoir	75	695,260	302,580	44	315,180	45	170,750	25
Lake Corpus Christi	76	241,240	167,500	69	184,500	76	72,300	30
Falcon Reservoir (Texas)	77	1,555,120	194,570	13	268,350	17	169,440	11
Falcon Reservoir (Texas and Mexico)	(77)	(2,653,290)	(425,620)	(16)	(520,480)	(20)	(322,660)	(12)
TOTAL		2,491,620	664,650	27	768,030	31	412,490	17
STATE TOTAL		34,557,650	29,426,450	85	29,845,540	86	23,584,460	68

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.

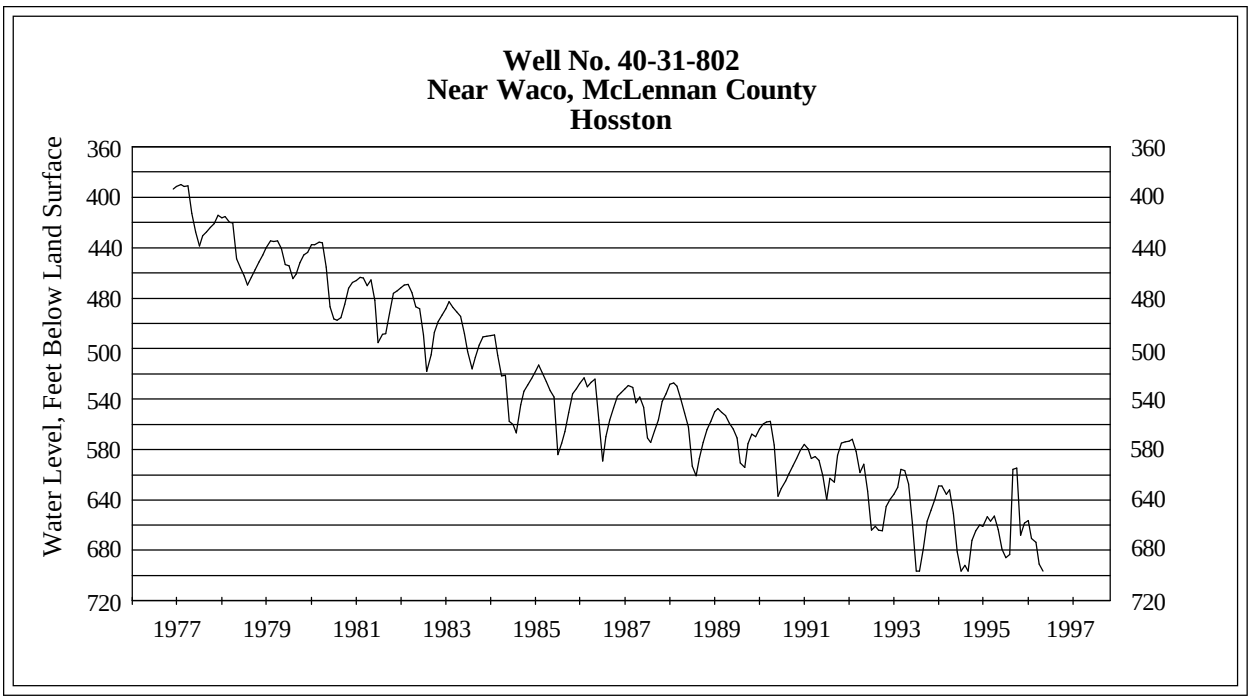
GROUND WATER LEVELS IN OBSERVATION WELLS



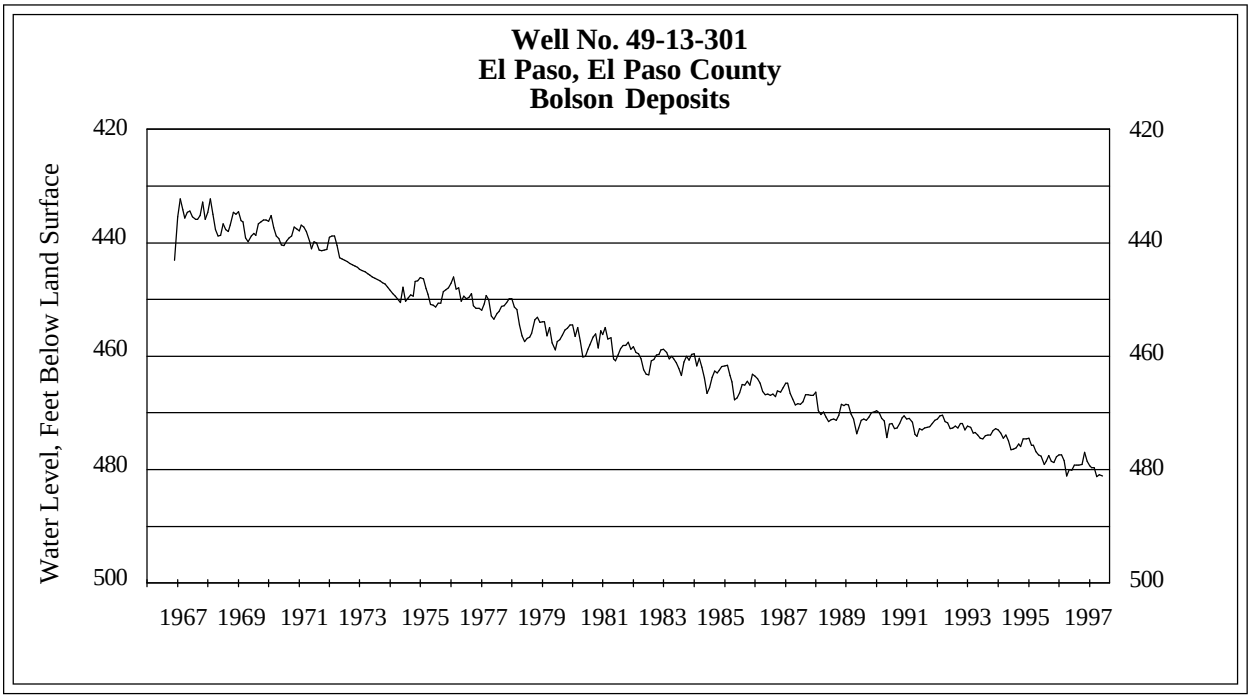
The August water-level measurement in this Ogallala aquifer well, elevation 3667 feet above sea level, was 106.93 feet below land surface. This was 6.29 feet below the July measurement, 2.63 feet above last year's measurement, and 78.78 feet below the initial measurement recorded in 1950.



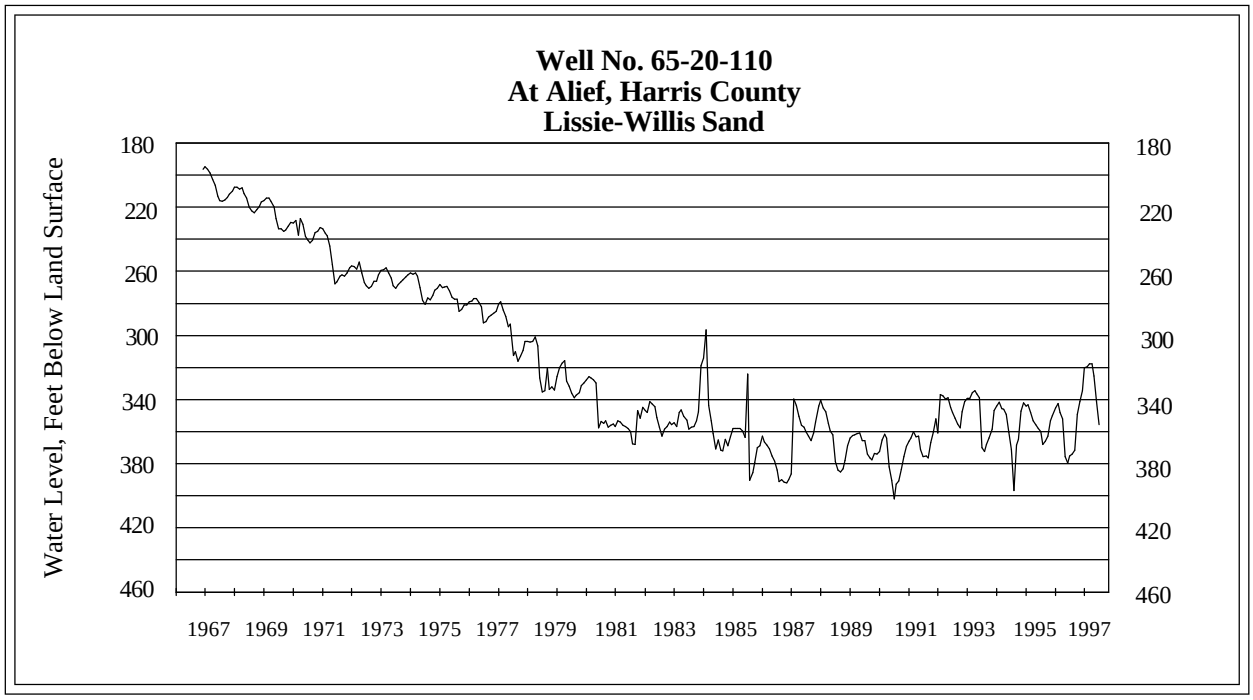
The August water-level measurement in this Paluxy aquifer well, elevation 535 feet above sea level, was 464.64 feet below land surface . This was 2.79 feet below last month's measurement, 2.07 feet below last year's measurement, and 71.25 feet below the initial measurement recorded in 1953.



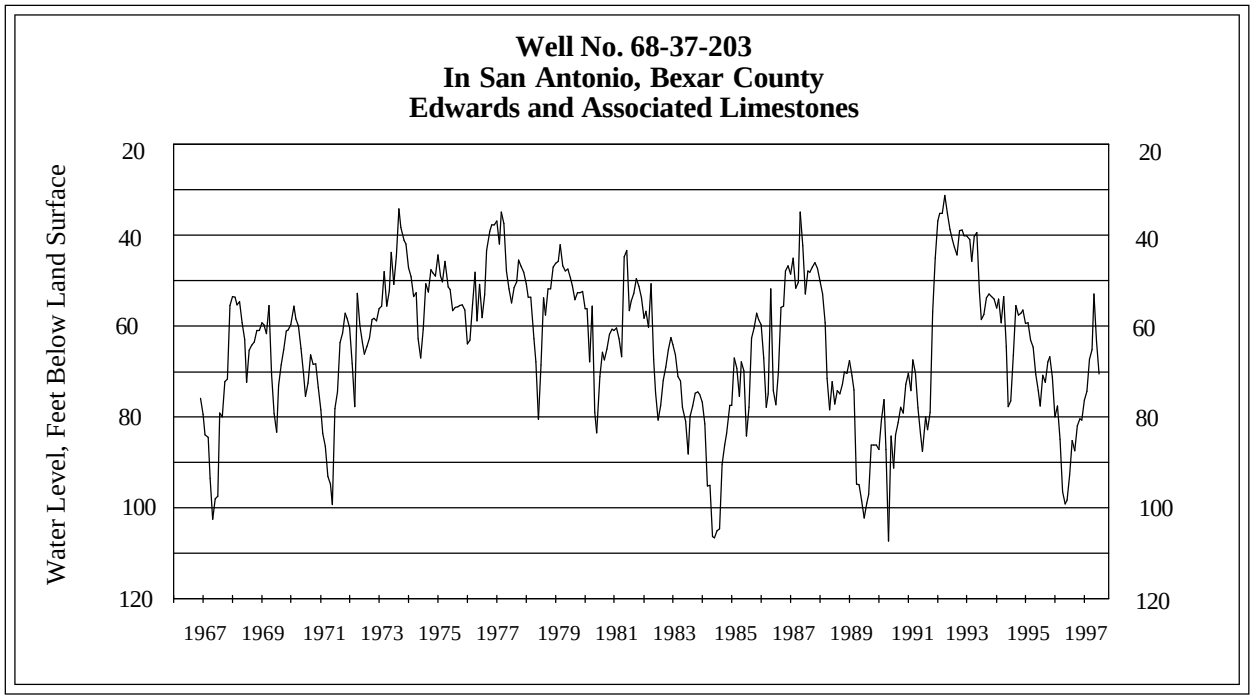
The August water-level measurement in this Hosston Formation aquifer well, elevation 593 feet above sea level, was not available due to a recorder malfunction.



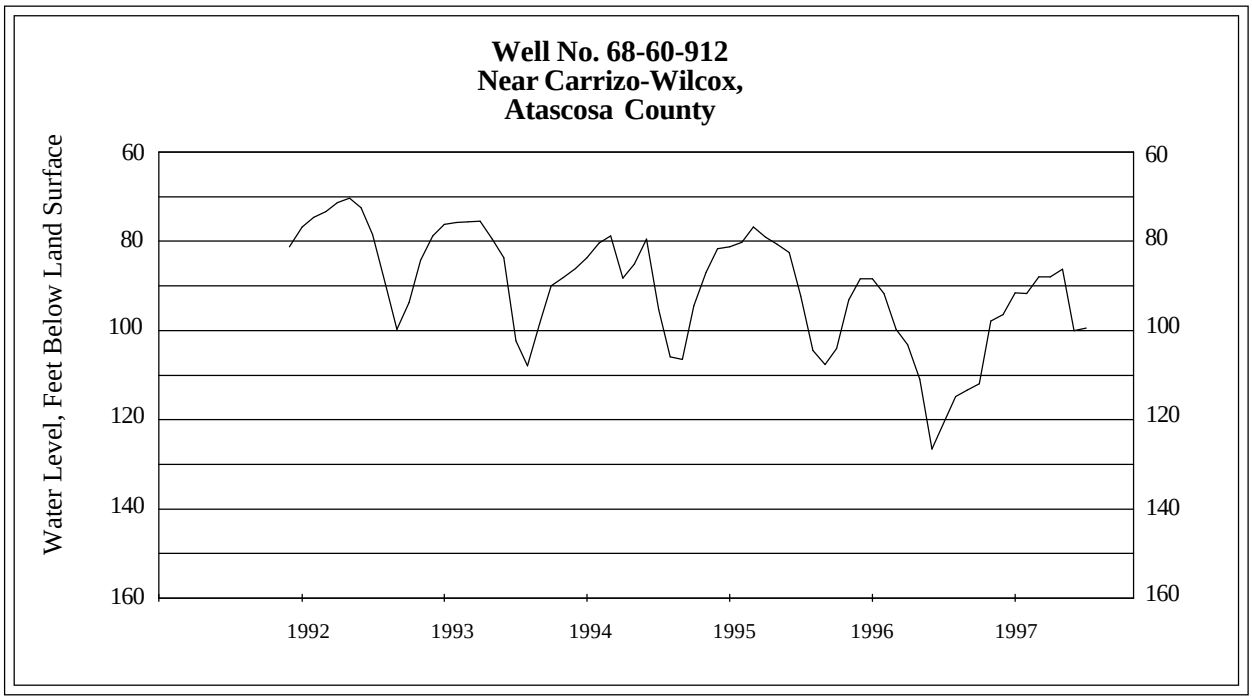
The August water-level measurement in this Bolson Deposits aquifer well, elevation 3882 feet above sea level, was 281.09 feet below land surface. This was .17 feet below last month's measurement, 1.02 feet below last year's measurement, and 49.19 feet below the initial measurement recorded in 1964.



The August water-level measurement in this Lissie Willis Sand aquifer well, elevation 83 feet above sea level, was 355.58 feet below land surface. This was 14.43 feet below last month's measurement, 19.77 feet above last year's measurement, and 319.58 feet below the initial measurement recorded in 1939.



The August water-level measurement in this Edwards aquifer well, elevation 731 feet above sea level, was 70.6 feet below land surface. This was 7.30 feet below last month's measurement, 22.20 feet above last year's measurement, and 10.98 feet above the initial measurement recorded in 1962.

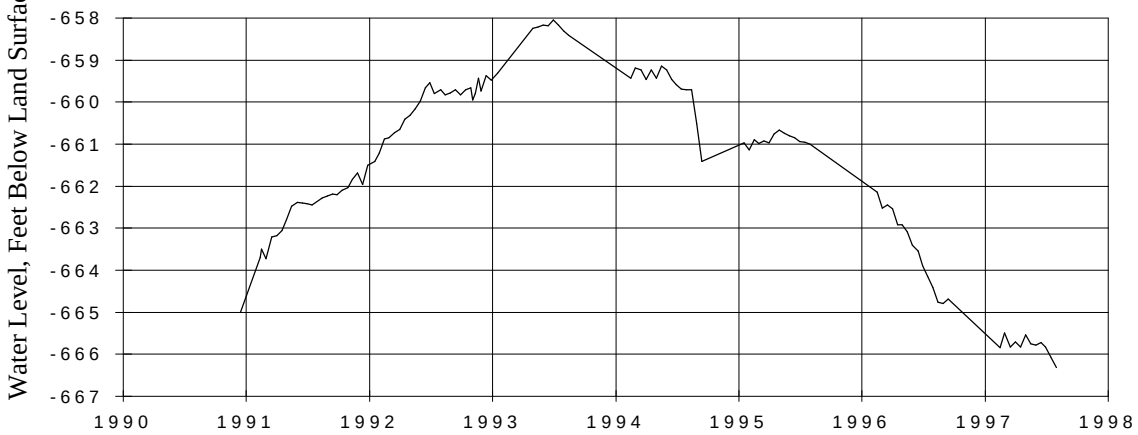


The August water-level measurement in this Carrizo aquifer well, elevation 446 feet above sea level, was 99.54 feet below land surface. This was 0.51 feet below last month's measurement, 23.46 feet above last year's measurement, and 18.29 feet below the initial measurement recorded in 1992.

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. 40-26-201
Coryell County, North of Gatesville
Hosston Aquifer



The August water-level measurement in this Hosston aquifer well, elevation 1152 feet above sea level, was 666.39 feet below land surface. This was 0.30 feet below last month's measurement, 1.63 feet below last years measurement, and 83.39 feet below the initial measurement recorded in 1984.

TEXAS WATER CONDITIONS

Texas Water Development Board
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