

Texas Water Development Board



W *Conditions* **A** **T** **E** **R**

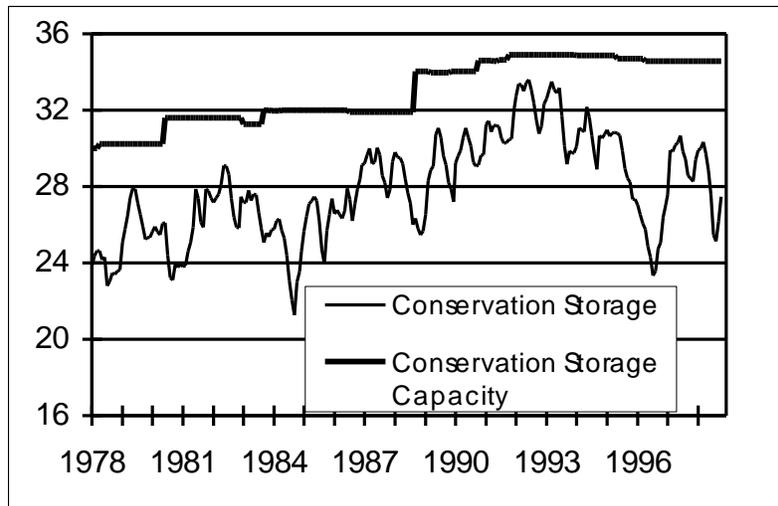
RESERVOIR STORAGE

November 1998

Near the end of November, the 77 reservoirs monitored for this report held 27,472,000 acre-feet in conservation storage. This was 79 percent of the conservation storage capacity of the State's major reservoirs. Compared to the end of October, storage increased 1,331,000 acre-feet (+4%). Compared to this month last year, storage decreased 976,000 acre-feet (-3%).

Of the monitored reservoirs, 27 held 100 percent or more of conservation storage near the end of November. Reservoir contents increased or remained nearly the same in all regions of the state. Among all regions, conservation storage in the Trans-Pecos was lowest at 22%, followed by the Low Rolling Plains at 33% and the Southern region at 37%. Conservation storage in the South Central and Upper Coast regions was 100%.

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS



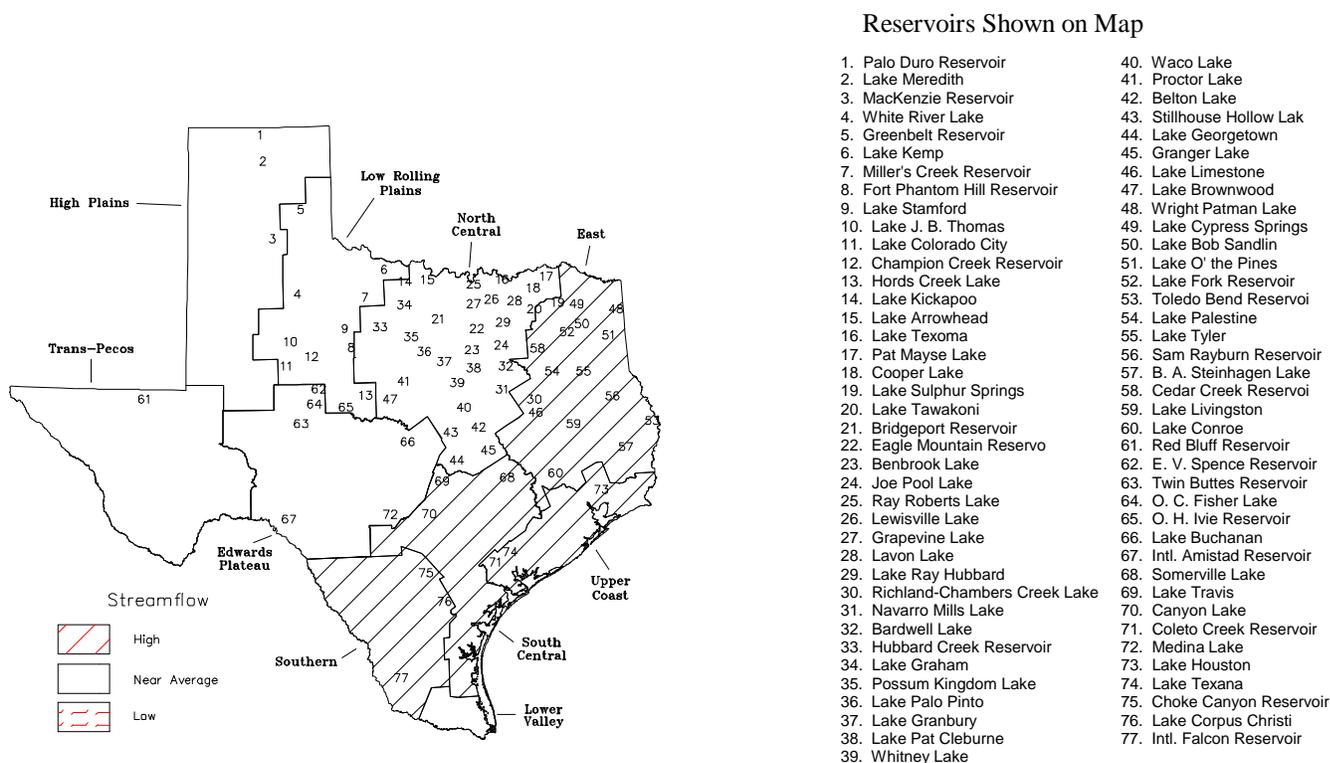
Current data are based on elevation near end of month at 77 reservoirs that represent 98 percent of total conservation storage capacity in Texas reservoirs having a capacity of 5,000 acre-feet or more.

STREAMFLOW

Streamflow conditions across Texas were generally very high on the central and upper Texas coastal regions, near normal in west and central Texas, and below normal in north central Texas and the Rolling Plains during the month of November. The following is a summary of the measured flows reported at 29 index stations across the State.

Flows were extremely high in the Upper Coast and South Central climatic regions. Flows at five index stations, Spring Creek near Spring, San Bernard River near Boling, Lavaca River near Edna, Navidad River near Hallettsville, and Middle Yegua Creek near Dime Box are exceeded less than 5% of the time. Two of three stations in the Southern region were also in the high range (flows exceeded only 5% to 30% of the time), as were four of five stations in the East Texas region. The single index station in the Trans Pecos region, Pecos River near Girvin, recorded near normal flows, as did four of six stations in the High Plains and the Low Rolling Plains. Two stations, Elm Creek at Ballinger in the southern Low Rolling Plains, and Hubbard Creek below Albany in the western North Central region, recorded flows in the very low range at levels exceeded 99% of the time.

STREAMFLOW CONDITIONS FOR NOVEMBER COMPARED WITH PAST RECORD



CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	No. on Map	Conservation		Change since		Change since		
		Storage Capacity (acre-feet)	Storage Late Nov 1998 (acre-feet) (%)	Late Oct 1998 (acre-feet) (%)	Late Nov 1997 (acre-feet) (%)			
HIGH PLAINS								
Palo Duro Reservoir	1	60,900	11,968	20	5,695	9	3,358	6
Lake Meredith (Texas)	2	500,000	339,000	68	23,000	5	-52,390	-10
Lake Meredith (Texas and Oklahoma)	(2)	779,560	339,000	43	23,000	3	-52,390	-7
MacKenzie Reservoir	3	46,250	7,288	16	170	0	-1,882	-4
White River Lake	4	31,850	8,994	28	-313	-1	-4,166	-13
TOTAL		639,000	367,250	57	28,552	4	-55,080	-9
LOW ROLLING PLAINS								
Greenbelt Reservoir	5	58,200	25,240	43	940	2	-1,930	-3
Lake Kemp	6	319,600	147,600	46	2,600	1	-93,230	-29
Miller's Creek Reservoir	7	27,890	14,285	51	47	0	2,445	9
Fort Phantom Hill Reservoir	8	70,030	26,119	37	0	0	-36,681	-52
Lake Stamford	9	52,700	19,336	37	-364	-1	-10,764	-20
Lake J. B. Thomas	10	202,300	6,785	3	-439	0	-10,715	-5
Lake Colorado City	11	30,800	15,520	50	-380	-1	-4,880	-16
Champion Creek Reservoir	12	41,600	10,610	26	-90	0	-9,590	-23
Hords Creek Lake	13	8,600	5,294	62	-62	-1	-1,686	-20
TOTAL		811,720	270,789	33	2,252	0	-167,031	-21
NORTH CENTRAL								
Lake Kickapoo	14	106,000	53,327	50	702	1	-5,663	-5
Lake Arrowhead	15	262,100	175,400	67	-600	0	-25,040	-10
Lake Texoma	16	2,722,300	2,218,226	81	85,339	3	-504,074	-19
Pat Mayse Lake	17	124,500	104,549	84	2,875	2	-5,251	-4
Cooper Lake	18	273,000	273,000	100	0	0	22,180	8
Lake Sulphur Springs	19	17,710	14,918	84	-2,312	-13	-1,882	-11
Lake Tawakoni	20	936,200	936,200	100	57,200	6	70,800	8
Bridgeport Reservoir	21	374,830	284,272	76	-5,065	-1	-53,728	-14
Eagle Mountain Reservoir	22	178,380	146,520	82	1,082	1	-16,240	-9
Benbrook Lake	23	88,200	72,593	82	3,595	4	-12,117	-14
Joe Pool Lake	24	175,800	163,935	93	12,826	7	-935	-1
Ray Roberts Lake	25	798,760	712,817	89	-2,694	0	-35,603	-4
Lewisville Lake	26	555,000	436,277	79	-4,543	-1	-51,403	-9
Grapevine Lake	27	187,700	149,574	80	2,074	1	-10,586	-6
Levon Lake	28	443,800	310,212	70	22,175	5	-46,308	-10
Lake Ray Hubbard	29	490,000	446,651	91	30,027	6	4,251	1
Richland-Chambers Creek Lake	30	1,103,820	1,103,820	100	0	0	91,500	8
Navarro Mills Lake	31	55,810	55,810	100	0	0	5,970	11
Bardwell Lake	32	53,580	53,580	100	3,711	7	3,070	6
Hubbard Creek Reservoir	33	317,800	258,500	81	-2,500	-1	-35,500	-11
Lake Graham	34	45,000	39,640	88	140	0	-5,360	-12
Possum Kingdom Lake	35	551,820	386,300	70	130,711	24	-92,060	-17
Lake Palo Pinto	36	42,200	27,137	64	-669	-2	-8,123	-19
Lake Granbury	37	135,680	131,700	97	8,876	7	-3,980	-3
Lake Pat Cleburne	38	25,300	22,863	90	5,063	20	1,863	7
Whitney Lake	39	622,800	445,916	72	14,596	2	-85,904	-14
Waco Lake	40	144,500	144,500	100	0	0	9,760	7
Proctor Lake	41	55,590	34,289	62	165	0	-12,901	-23
Belton Lake	42	434,500	434,500	100	0	0	5,210	1
Stillhouse Hollow Lake	43	226,060	226,060	100	0	0	1,210	1
Lake Georgetown	44	37,010	37,010	100	0	0	4,110	11
Granger Lake	45	54,280	54,280	100	0	0	0	0
Lake Limestone	46	215,750	215,750	100	750	0	36,200	17
Lake Brownwood	47	143,400	114,003	80	790	1	-13,997	-10
TOTAL		11,999,180	10,284,129	86	364,314	3	-770,531	-6

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

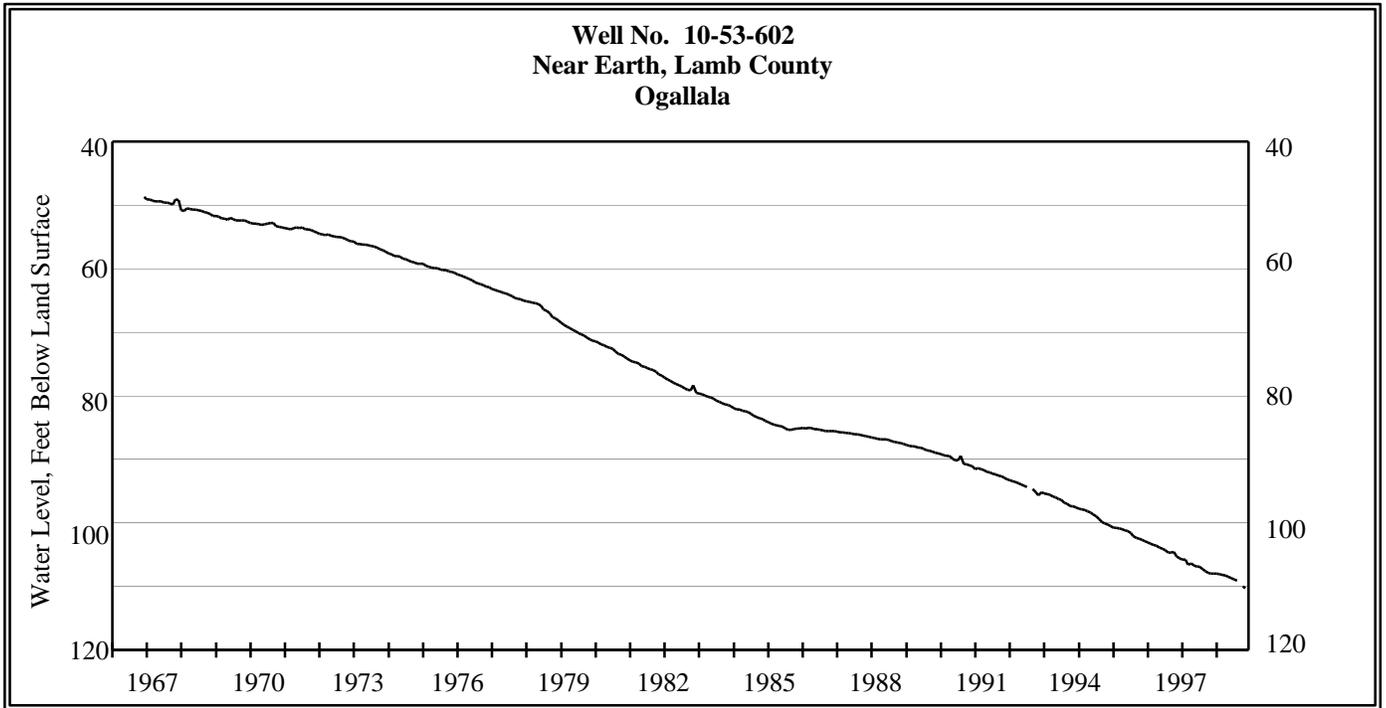
Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage Late Nov 1998 (acre-feet) (%)	Change since Late Oct 1998 (acre-feet) (%)	Change since Late Nov 1997 (acre-feet) (%)
EAST					
Wright Patman Lake	48	142,700	142,700 100	0 0	0 0
Lake Cypress Springs	49	66,800	66,800 100	0 0	740 1
Lake Bob Sandlin	50	202,300	202,300 100	0 0	9,780 5
Lake O' the Pines	51	252,000	252,000 100	7,793 3	0 0
Lake Fork Reservoir	52	635,200	635,200 100	0 0	25,910 4
Toledo Bend Reservoir	53	4,472,900	3,902,000 87	352,000 8	-58,000 -1
Lake Palestine	54	411,300	411,300 100	23,596 6	29,900 7
Lake Tyler	55	73,700	73,700 100	878 1	0 0
Sam Rayburn Reservoir	56	2,876,300	2,472,134 86	346,454 12	-123,116 -4
B. A. Steinhagen Lake	57	94,200	94,200 100	8,185 9	11,440 12
Cedar Creek Reservoir	58	637,050	637,050 100	0 0	0 0
Lake Livingston	59	1,750,000	1,736,000 99	-3,999 0	-14,000 -1
Lake Conroe	60	429,900	416,600 97	-400 0	5,630 1
TOTAL		12,044,350	11,041,984 92	734,507 6	-111,716 -1
TRANS-PECOS					
Red Bluff Reservoir	61	307,000	66,140 22	13,400 4	5,860 2
TOTAL		307,000	66,140 22	13,400 4	5,860 2
EDWARDS PLATEAU					
E. V. Spence Reservoir	62	484,800	76,180 16	-920 0	-50,820 -10
Twin Buttes Reservoir	63	177,800	13,389 8	715 0	-29,011 -16
O.C. Fisher Lake	64	119,200	13,412 11	-202 0	-3,358 -3
O. H. Ivie Reservoir	65	554,340	434,900 78	-3,100 -1	-78,960 -14
Lake Buchanan	66	896,980	802,428 89	20,592 2	-30,072 -3
Amistad Reservoir (Texas)	67	1,771,030	923,000 52	47,000 3	1,220 0
Amistad Reservoir (Texas and Mexico)	(67)	3,151,300	1,317,000 42	73,000 2	-178,760 -6
TOTAL		4,004,150	2,263,309 57	64,085 2	-191,001 -5
SOUTH CENTRAL					
Somerville Lake	68	155,060	155,060 100	0 0	0 0
Lake Travis	69	1,144,100	1,144,100 100	104,691 9	91,000 8
Canyon Lake	70	385,600	385,600 100	0 0	4,080 1
Coletto Creek Reservoir	71	35,060	35,060 100	0 0	0 0
Medina Lake	72	254,000	254,000 100	0 0	20,600 8
TOTAL		1,973,820	1,973,820 100	104,691 5	115,680 6
UPPER COAST					
Lake Houston	73	128,860	128,860 100	0 0	0 0
Lake Texana	74	157,900	157,900 100	0 0	0 0
TOTAL		286,760	286,760 100	0 0	0 0

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

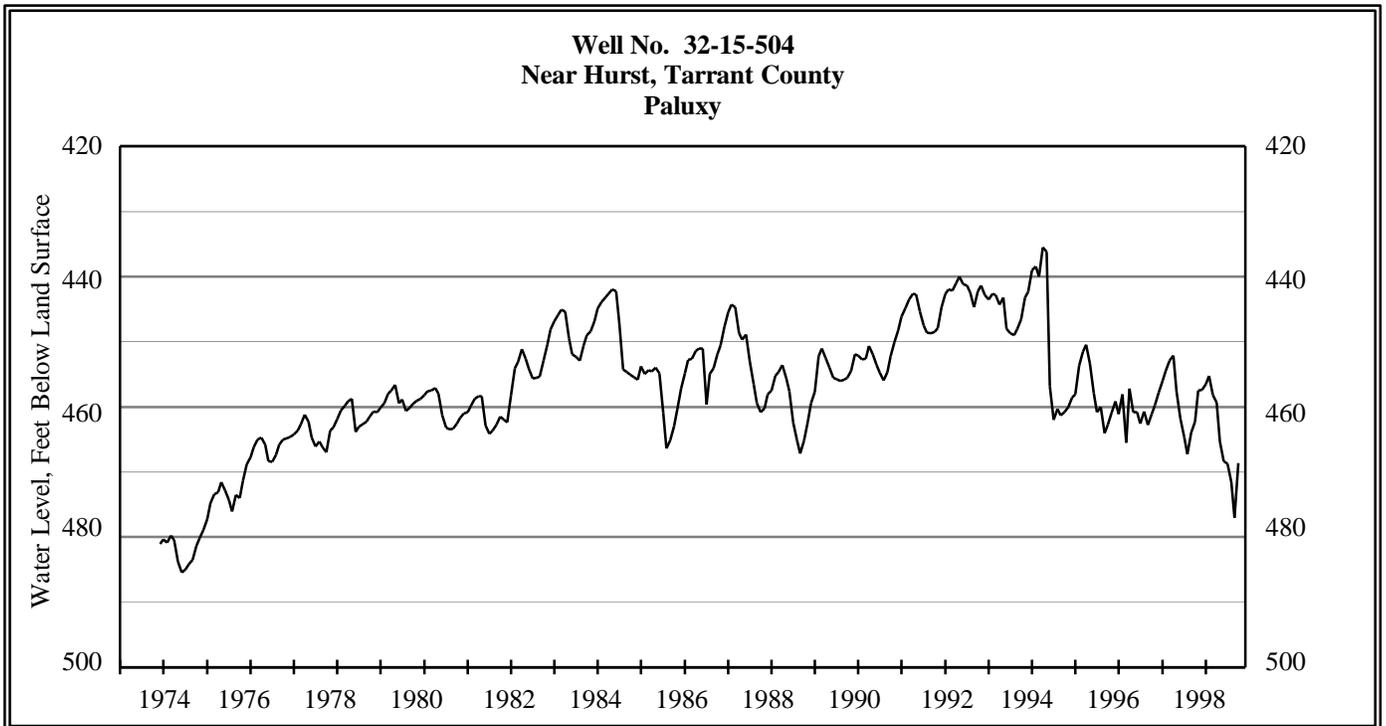
Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage Late Nov 1998 (acre-feet) (%)		Change since Late Oct 1998 (acre-feet) (%)		Change since Late Nov 1997 (acre-feet) (%)		
SOUTHERN									
Choke Canyon Reservoir	75	695,260	364,344	52	10,004	1	77,714	11	
Lake Corpus Christi	76	241,240	186,263	77	0	0	3,463	1	
Falcon Reservoir (Texas)	77	1,555,120	367,000	24	9,000	1	116,490	7	
Falcon Reservoir (Texas and Mexico)	(77)	2,653,290	656,000	25	17,000	1	166,330	6	
TOTAL		2,491,620	917,607	37	19,004	1	197,667	8	
STATE TOTAL		34,557,600	27,471,788	79	1,330,805	4	-976,152	-3	

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. Texas (United States' share) and Mexico and are not included in State total.

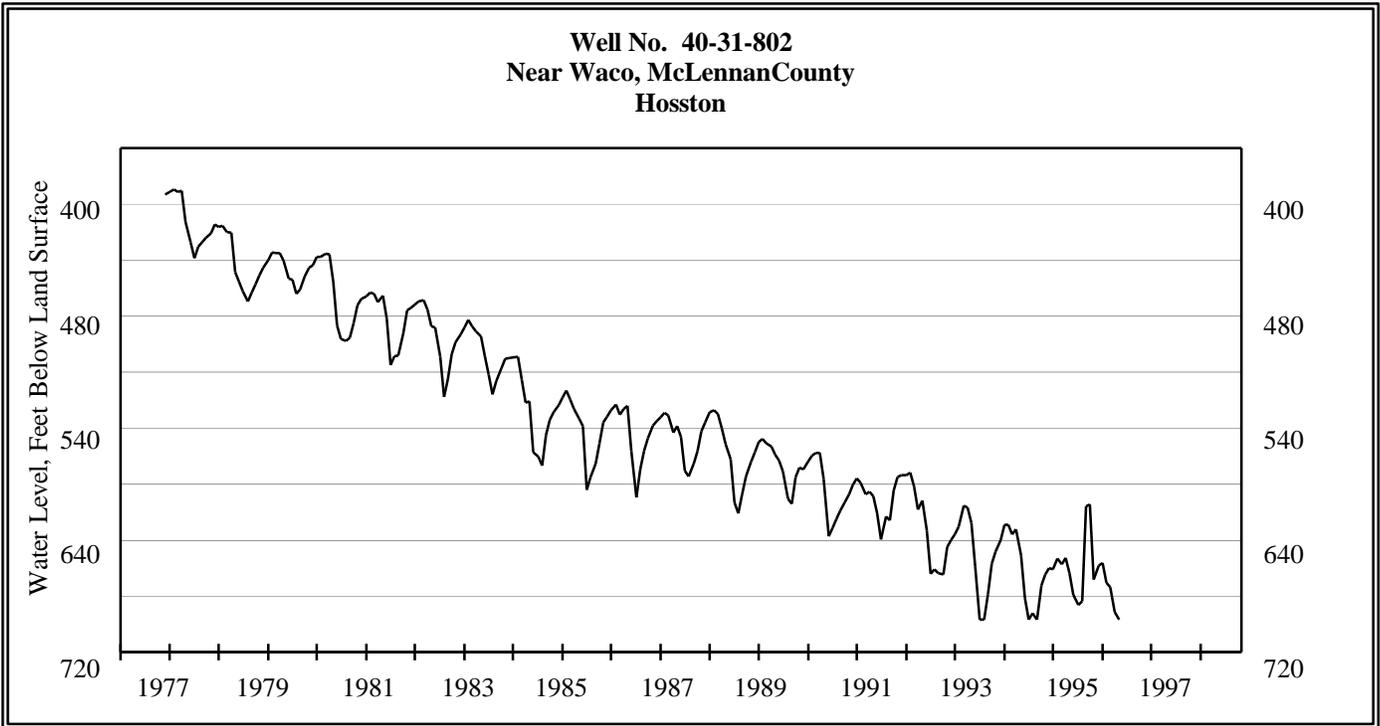
GROUND WATER LEVELS IN OBSERVATION WELLS



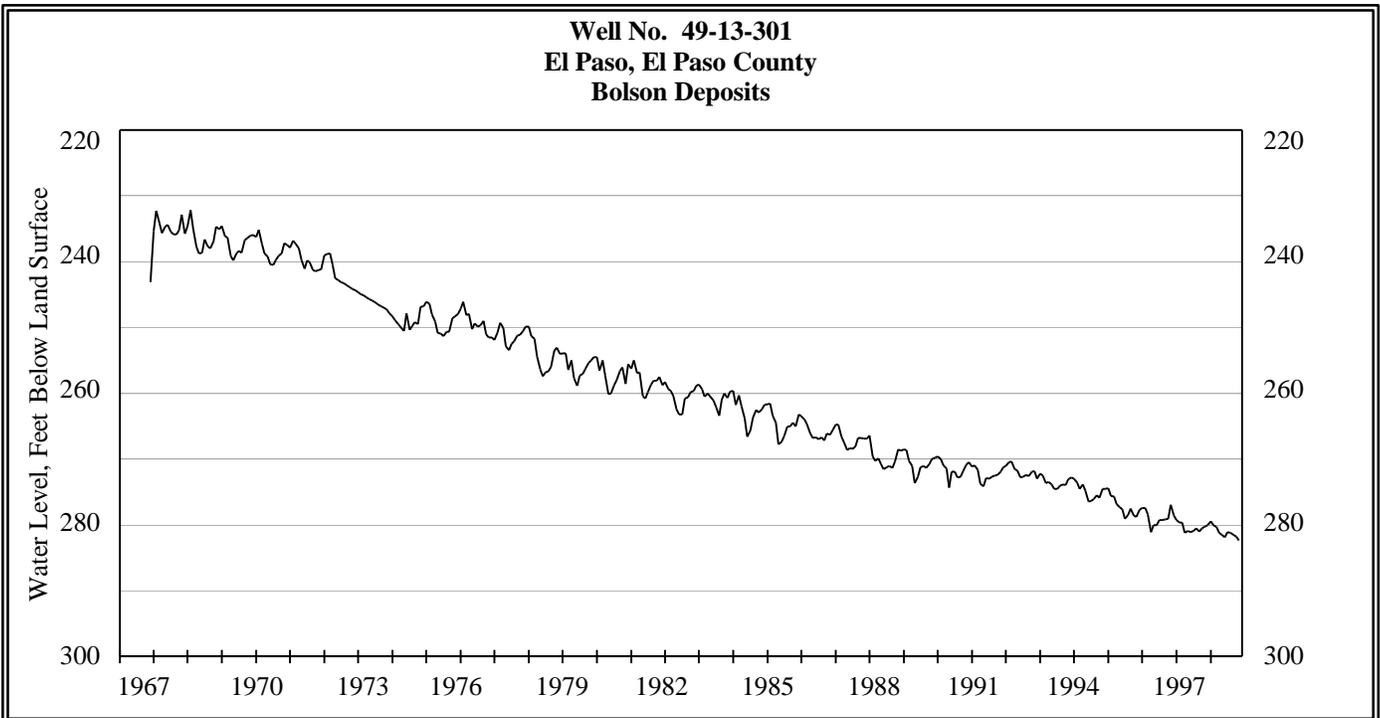
The November water-level measurement in this Ogallala aquifer well, elevation 3667 feet above sea level, was 110.36 feet below land surface. This was 0.35 of a foot below last month's measurement, 2.51 feet below last year's measurement, and 82.21 feet below the initial measurement recorded in 1950.



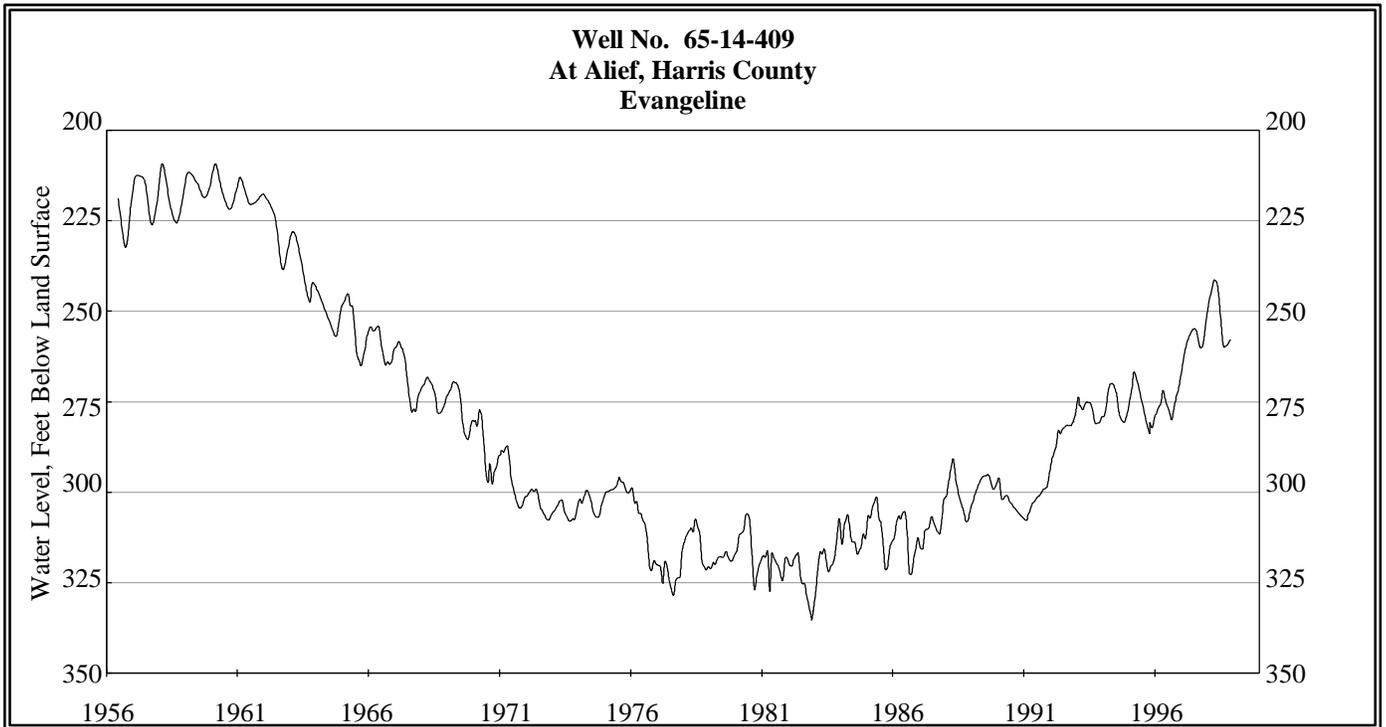
The November water-level measurement in this Paluxy aquifer well, elevation 535 feet above sea level, was 468.72 feet below land surface. This measurement was 2.39 feet above last month's measurement, 6.38 feet below last year's measurement, and 75.33 feet below the initial measurement recorded in 1953.



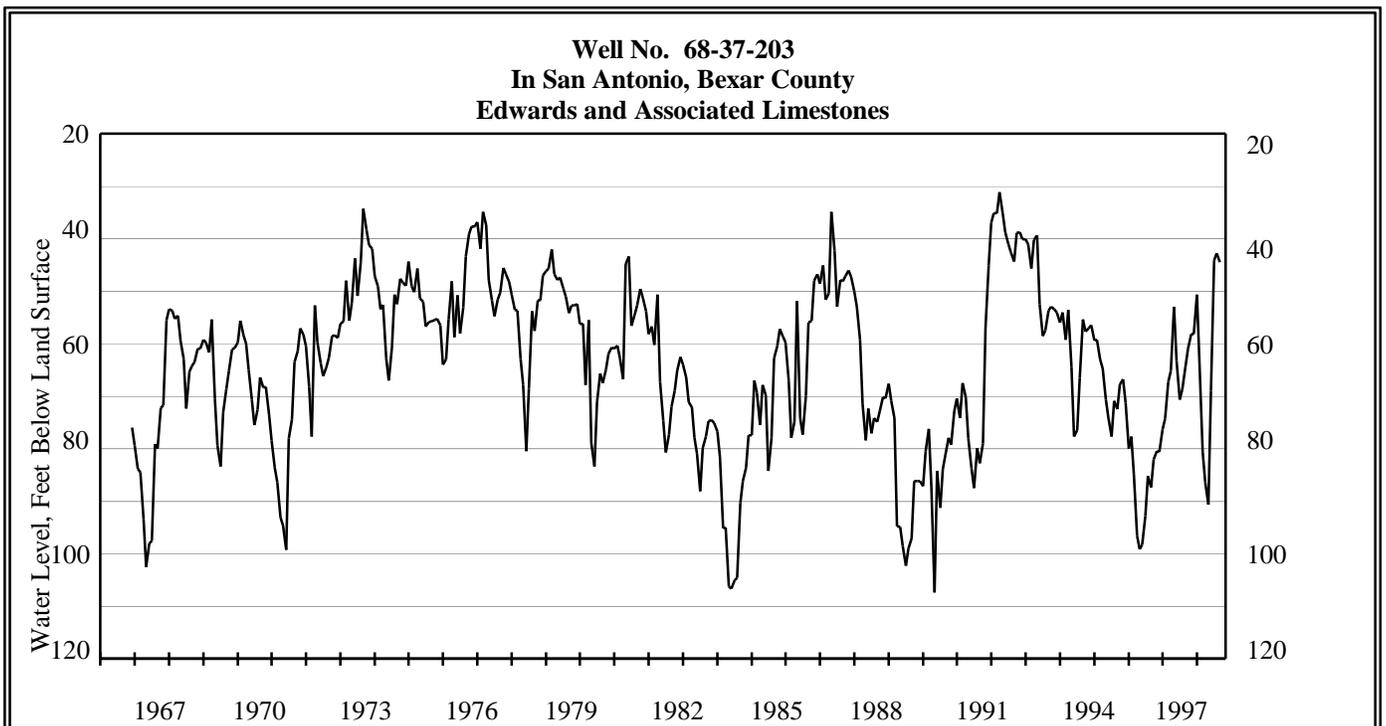
The November water-level measurement in this Hosston Formation aquifer well, elevation 593 feet above sea level, was not available this month due to continued casing problems.



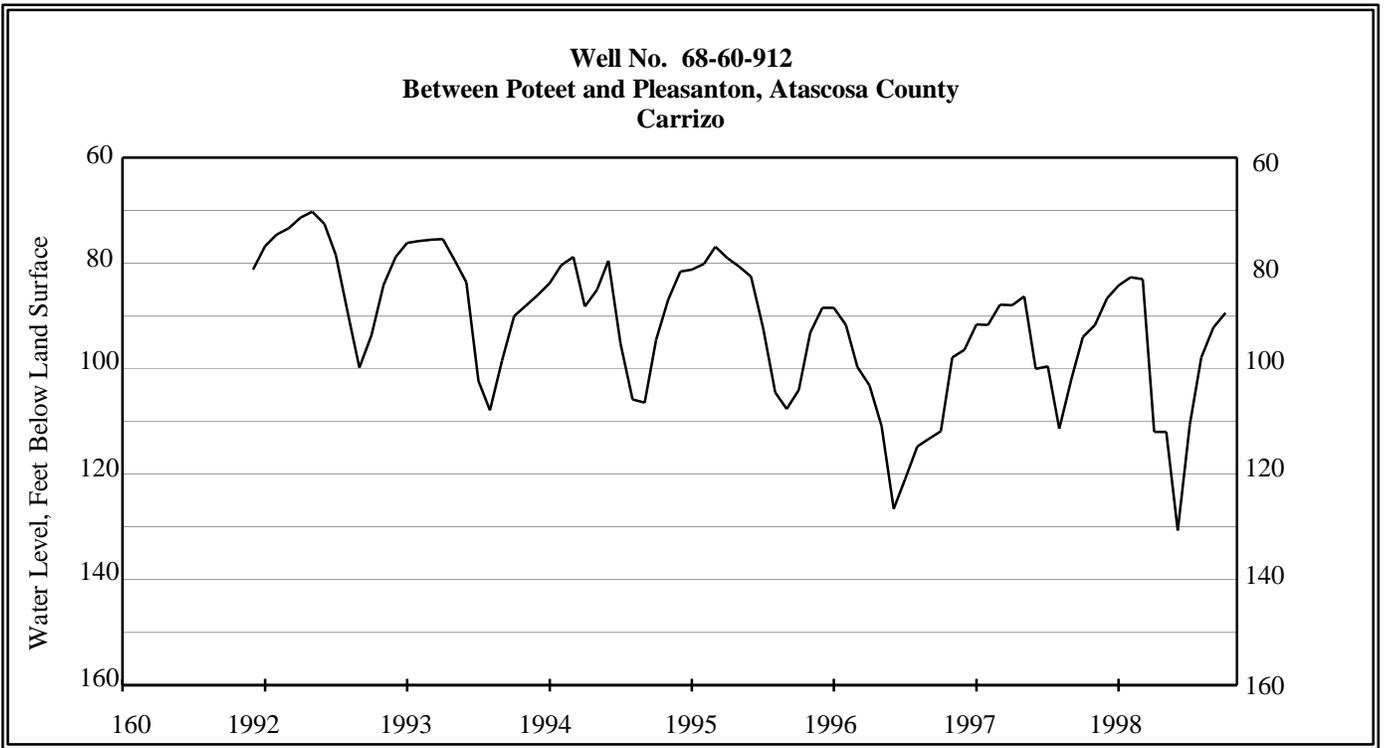
The November water-level measurement in this Bolson Deposits aquifer well, elevation 3882 feet above sea level, was 281.76 feet below land surface. This was 0.21 of a foot below last month's measurement, 0.78 of a foot below last year's measurement, and 49.86 feet below the initial measurement recorded in 1964.



The November water-level measurement in this Evangeline aquifer well # 65-14-409 (incorrectly reported as 65-20-110 in previous newsletters), elevation 66 feet above sea level, was 257.79 feet below land surface. This was 1.75 feet above last month's measurement, 1.97 feet above last year's measurement, and 122.29 feet below the initial measurement recorded in 1947.



The November water-level measurement in this Edwards aquifer well, elevation 731 feet above sea level, was 42.7 feet below land surface. This was 1.4 feet above last month's measurement, 18.2 feet above last year's measurement, and 16.92 feet above the initial measurement recorded in 1962.



The November water-level measurement in this Carrizo aquifer well, elevation 446 feet above sea level, was 92.19 feet below land surface. This was 5.71 feet above last month's measurement, 1.82 feet above last year's measurement, and 11.0 feet below the initial measurement recorded in 1992.

HYDROGRAPH OF THE MONTH

