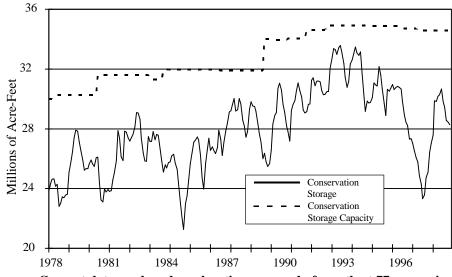
### December 1997

Near the end of November, the 77 reservoirs monitored for this report held 28,272,250 acre-feet in conservation storage. This was 82 percent of the conservation storage capacity of the State's major reservoirs. Compared to last month, storage has decreased 175,690 acre-feet. Compared to this month last year, storage has increased 1,864,840 acre-feet.

Of the monitored reservoirs, 13 held 100 percent or more of their conservation storage capacities near the end of November. Lakes Granbury, Cypress Springs, Tyler, Livingston, Coleto Creek, 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, 18,200; Stillhouse Hollow, 1,940; Granger, 1,360; Wright Patman, 47,810; Lake O' the Pines, 6,000; and Somerville, 8,490.



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.

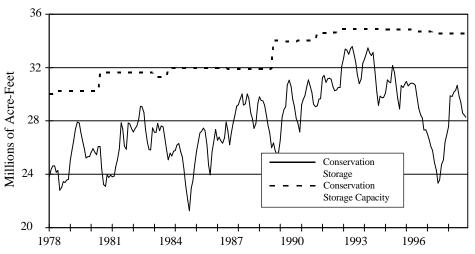
## **Texas Water Development Board**

# RESERVOIR STORAGE

Near the end of November, the 77 reservoirs monitored for this report held 28,272,250 acre-feet in conservation storage. This was 82 percent of the conservation storage capacity of the State's major reservoirs. Compared to last month, storage has decreased 175,690 acre-feet. Compared to this month last year, storage has increased 1,864,840 acre-feet.

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## 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.

P.O. Box 13231 • 1700 N. Congress Avenue • Austin, Texas 78711-3231 Telephone (512) 463-7847 • Telefax (512) 475-2053 • 1-800-RELAYTX (for the hearing impaired)

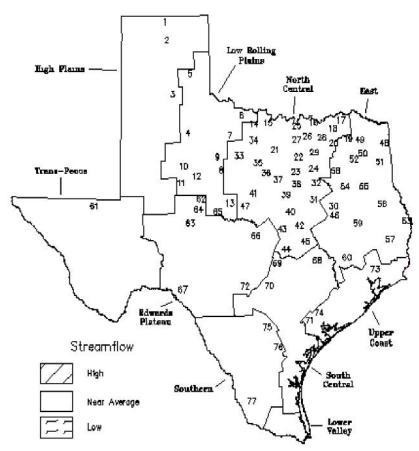
# **STREAMFLOW**

Streamflow conditions across Texas were near-normal during the month of November. There were scattered thunderstorms throughout southeast Texas toward the end of the month, producing one to three inches of rainfall. South Texas received light to moderate rainfall. 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 November was near-normal, averaging 794 cubic feet per second (cfs). The monthly average flow rate, when compared to the 1961-90 reference period, was 121 percent of the reference period median and 605 cfs above the below-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 near-normal, averaging 22.1 cfs, or 89 percent of the monthly reference period median. This was 15.8 cfs below the station's abovenormal 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 0.002 cfs, or 0.7 percent of the monthly reference period median. This was 3.078 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 217 cfs, or 111 percent of the monthly reference period median. This was 102 cfs above the station's below-normal flow level

# STREAMFLOW CONDITIONS FOR NOVEMBER **COMPARED WITH PAST RECORD**



#### **Reservoirs Shown on Map**

Kesel voli s
1. Palo Duro Reservoir
<ol><li>Lake Meredith</li></ol>
<ol><li>MacKenzie Reservoir</li></ol>
<ol><li>White River Lake</li></ol>
<ol><li>Greenbelt Reservoir</li></ol>
6. Lake Kemp
<ol><li>Miller's Creek Reservoir</li></ol>
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 L
31 Navarro Mills Lake

- 30. 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

:	No.: Storage :		Conservation Storage in Acre-Feet and as Percent of Conservation Storage Capacity							
Name of Lake : or Reservoir :		Capacity :_ (acre-feet) :			Late Oct 1997 :		Late Nov 1996			
HIGH PLAINS										
Palo Duro Reservoir Lake Meredith	1	60,900	8,610	14	8,610	14	13,900	23		
(Texas) Lake Meredith	2	500,000	387,240	77	391,390	78	371,600	74		
(Texas and Oklahoma)	(2)	(779,560)	(387,240)	(50)	(391,390)	(50)	(371,600)	(48)		
MacKenzie Reservoir	3	46,250	8,760	19	9,170	20	7,790	17		
White River Lake	4	31,850	12,870	40	13,160	41	7,900	25		
TOTAL		639,000	417,480	65	422,330	66	401,190	63		
		LOW ROI	LING PLAINS							
Greenbelt Reservoir	5	58,200	27,100	47	27,170	47	12,600	22		
Lake Kemp	б	319,600	238,200	75	240,830	75	202,080	63		
Miller's Creek Reservoir	7	27,890	11,550	41	11,840	42	12,130	43		
Fort Phantom Hill Reservoir	8	70,030	60,290	86	62,800	90	58,880	84		
Lake Stamford	9	52,700	29,500	56	30,100	57	21,290	40		
Lake J. B. Thomas	10	202,300	16,910	8	17,500	9	8,890	4		
Lake Colorado City	11	30,800	19,960	65	20,400	66	19,120	62		
Champion Creek Reservoir Hords Creek Lake	12 13	41,600 8,600	20,000 6,800	48 79	20,200 6,980	49 81	20,840 6,710	50 78		
TOTAL	15	811,720	430,310	53	437,820	54	362,540	45		
		NORT	H CENTRAL							
Lake Kickapoo	14	106,000	57,290	54	58,990	56	66,500	63		
Lake Arrowhead	15	262,100	196,340	75	200,440	76	194,480	74		
Lake Texoma	16	2,722,300	2,722,300	100	2,722,300	100	2,722,300	100		
Pat Mayse Lake	17	124,500	109,100	88	109,800	88	124,500	100		
Cooper Lake	18	273,000	251,190	92	250,820	92	273,000	100		
Lake Sulphur Springs	19	17,710	17,100	97	16,800	95	17,710	100		
Lake Tawakoni	20	936,200	842,500	90	865,400	92	774,700	83		
Bridgeport Reservoir Eagle Mountain Reservoir	21 22	374,830 178,380	333,700 157,260	89 88	338,000 162,760	90 91	326,600 178,380	87 100		
Benbrook Lake	23	88,200	84,630	96	84,710	96	88,200	100		
Joe Pool Lake	24	175,800	163,570	93	164,870	94	165,370	94		
Ray Roberts Lake	25	798,760	741,190	93	748,420	94	798,760	100		
Lewisville Lake	26	555,000	473,540	85	487,680	88	555,000	100		
Grapevine Lake	27	187,700	152,970	81	160,160	85	187,700	100		
Lavon Lake	28	443,800	348,660	79	356,520	80	443,800	100		
Lake Ray Hubbard	29	490,000	441,400	90	442,400	90	477,300	97		
Richland-Chambers Creek Lake	30	1,103,820	1,005,020	91	1,012,320	92	850,690	77		
Navarro Mills Lake	31	55,810	51,150	92	49,840	89	37,450	67		
Bardwell Lake	32	53,580	51,040	95	50,510	94	52,300	98		
Hubbard Creek Reservoir	33	317,800	290,900	92	294,000	93	317,800	100		
Lake Graham	34	45,000	44,400	99	45,000	100	45,000	100		
Possum Kingdom Lake Lake Palo Pinto	35 36	551,820 42,200	470,120	85 84	478,360	87 84	551,820	100 100		
Lake Granbury	36 37	42,200 135,680	35,380 135,680	84 100	35,260 135,680	84 100	42,200 135,680	100		
Lake Pat Cleburne	38	25,300	20,200	80	21,000	83	19,870	79		
Whitney Lake	39	622,800	509,200	82				100		
			509 780	× /	531,820	85	622,800	1, 1, 1, 1, 1		

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake	: : : No.: : on :	Conservation: Storage :	Conservation Storage in Acre-Feet and as Percent of Conservation Storage Capacity							
Name of Lake or Reservoir	: Map:	Capacity :_ (acre-feet) :	Late Nov 19	Late Nov 1996						
NORTH CENTRAL (continued)										
Proctor Lake	41	55,590	46,780	84	47,190	85	55,590	100		
Belton Lake	42	434,500	431,740	99	429,290	99	434,500	100		
Stillhouse Hollow Lake	43	226,060	226,060	100	224,850	99	194,090	86		
Lake Georgetown	44	37,010	32,290	87	32,900	89	20,860	56		
Granger Lake	45	54,280	54,280	100	54,280	100	54,280	100		
Lake Limestone	46	215,750	179,900	83	179,550	83	139,420	65		
Jake Brownwood	47	143,400	125,200	87	128,000	89	142,000	99		
TOTAL		11,999,230	10,937,110	91	11,054,660	92	11,255,200	94		
			EAST							
Vright Patman Lake	48	142,700	142,700	100	142,700	100	142,700	100		
Lake Cypress Springs	49	66,800	66,800	100	66,060	99	66,800	100		
Lake Bob Sandlin	50	202,300	192,800	95	192,520	95	200,450	99		
Lake O' the Pines	51	252,000	252,000	100	252,000	100	252,000	100		
Lake Fork Reservoir	52	635,200	606,340	95	609,290	96	632,200	99		
Toledo Bend Reservoir	53	4,472,900	3,870,000	87	3,960,000	89	3,488,000	78		
Lake Palestine	54	411,300	381,400	93	381,400	93	340,600	83		
lake Tyler	55	73,700	73,700	100	73,700	100	65,470	89		
Sam Rayburn Reservoir	56	2,876,300	2,601,710	90	2,595,250	90	1,768,950	62		
3. A. Steinhagen Lake	57	94,200	89,020	95	82,760	88	94,200	100		
Cedar Creek Reservoir	58	637,050	631,200	99	637,050	100	516,200	81		
Lake Livingston	59	1,750,000	1,750,000	100	1,750,000	100	1,750,000	100		
Lake Conroe	60	429,900	420,970	98	410,970	96	412,270	96		
TOTAL		12,044,350	11,078,640	92	11,153,700	93	9,729,840	81		
		TRA	NS-PECOS							
Red Bluff Reservoir	61	307,000	86,880	28	60,280	20	71,200	23		
TOTAL		307,000	86,880	28	60,280	20	71,200	23		
		EDWAR	DS PLATEAU							
. V. Spence Reservoir	62	484,800	125,600	26	127,000	26	116,000	24		
Win Buttes Reservoir	63	177,800	42,150	24	42,400	24	66,080	37		
D. C. Fisher Lake	64	119,200	16,450	14	16,770	14	17,730	15		
). H. Ivie Reservoir	65	554,340	509,760	92	513,860	93	419,560	76		
ake Buchanan mistad Reservoir	66	896,980	808,080	90	832,500	93	617,850	69		
(Texas) Amistad Reservoir	67	1,771,030	902,320	51	921,780	52	855,300	48		
(Texas and Mexico)	(67)	(3,151,300)	(1,486,840	) (47)	(1,495,760)	(47)	(1,268,760)	(40		
TOTAL		4,004,150	2,404,360	60	2,454,310	61	2,092,520	52		
		SOUT	H CENTRAL							
Somerville Lake	68	155,060	155,060	100	155,060	100	151,750	98		
Jake Travis	69	1,144,100	1,066,870	93	1,053,100	92	968,280	85		
Canyon Lake	70	385,600	382,100	99	381,520	99	379,630	98		
Coleto Creek Reservoir	71	35,060	35,060	100	35,060	100	27,580	79		
Medina Lake	72	254,000	228,300	90	233,400	92	71,890	28		
TOTAL		1,973,820	1,867,390	95	1,858,140	94	1,599,130	81		

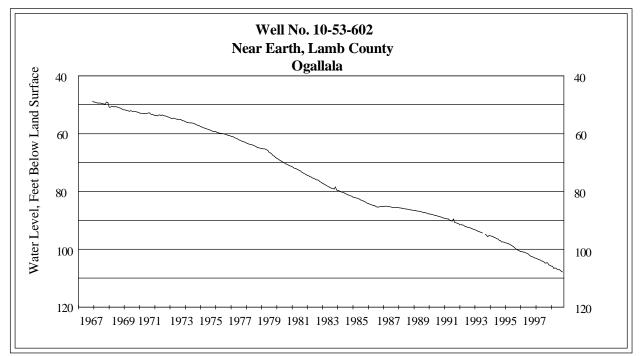
#### CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

	:	: No.:	Conservation: Storage :	Conservation Storage in Acre-Feet and as Percent of Conservation Storage Capacity						
Name of Lake or Reservoir	:	on : Map:	Capacity :_ (acre-feet) :	Late Nov 1997 :		Late Oct 19	97 :	Late Nov 1996		
			UPF	PER 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	156,990	99	
TOTAL			286,760	286,760	100	286,760	100	285,850	99	
			S	OUTHERN						
Choke Canyon Reservoir		75	695,260	280,710	40	286,630	41	177,810	26	
Lake Corpus Christi Falcon Reservoir		76	241,240	179,400	74	182,800	76	119,200	49	
(Texas) Falcon Reservoir		77	1,555,120	303,210	19	250,510	16	312,930	20	
(Texas and Mexico)		(77)	(2,653,290)	(545,610)	(21)	(489,670)	(18)	(570,740)	(21)	
TOTAL		. ,	2,491,620	763,320	31	719,940	29	609,940	24	
STATE TOTAL			34,557,650	28,272,250	82	28,447,940	82	26,407,410	76	

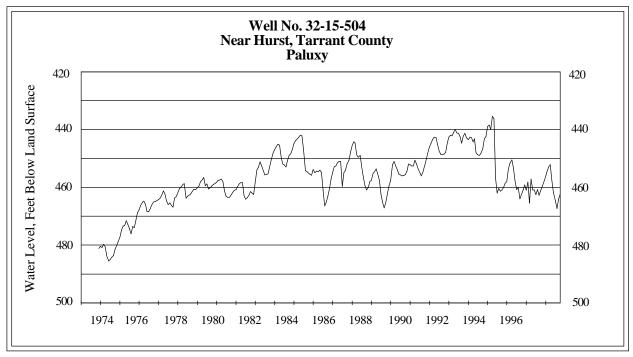
CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

**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 in parentheses 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.

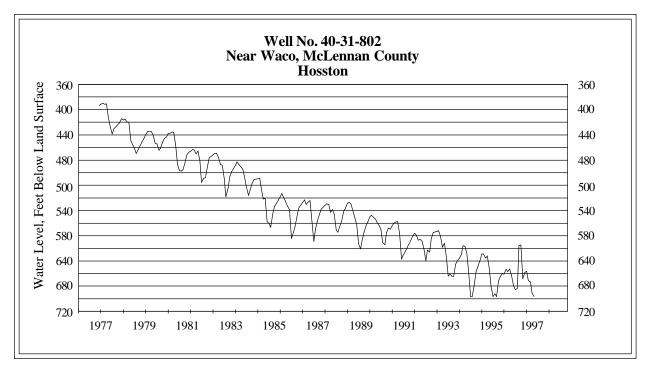
## **GROUND WATER LEVELS IN OBSERVATION WELLS**



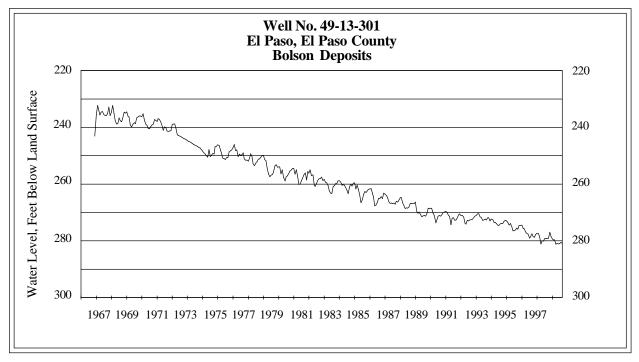
The November water-level measurement in this Ogallala aquifer well, elevation 3667 feet above sea level, was 107.85 feet below land surface. This was 0.25 feet below last month's measurement, 3.19 feet below last year's measurement, and 79.70 feet below the initial measurement recorded in 1950.



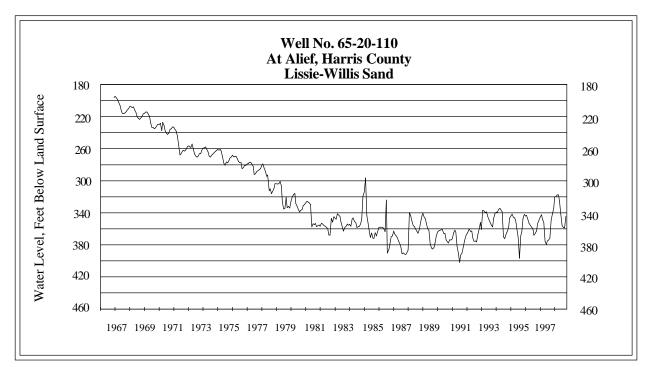
The November water-level measurement in this Paluxy aquifer well, elevation 535 feet above sea level, was 462.34 feet below land surface. This measurement was 1.60 feet above last month's measurement, 1.16 feet below last year's measurement, and 68.95 feet below the initial measurement recorded in 1953.



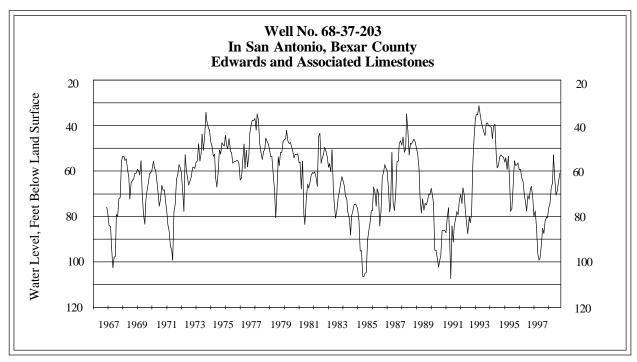
The November water-level measurement in this Hosston Formation aquifer well, elevation 593 feet above sea level, was not available for this month.



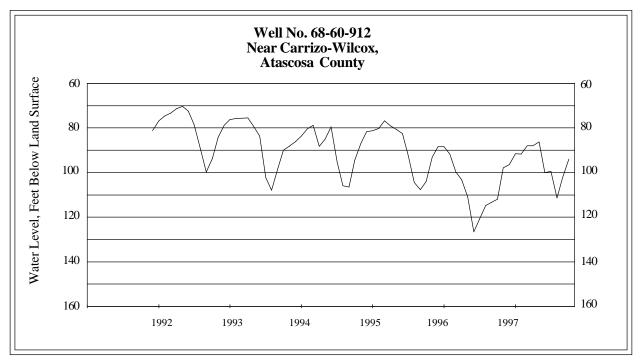
The November water-level measurement in this Bolson Deposits aquifer well, elevation 3882 feet above sea level, was 280.98 feet below land surface. This was .42 feet below last month's measurement, 1.58 feet below last year's measurement, and 49.08 feet below the initial measurement recorded in 1964.



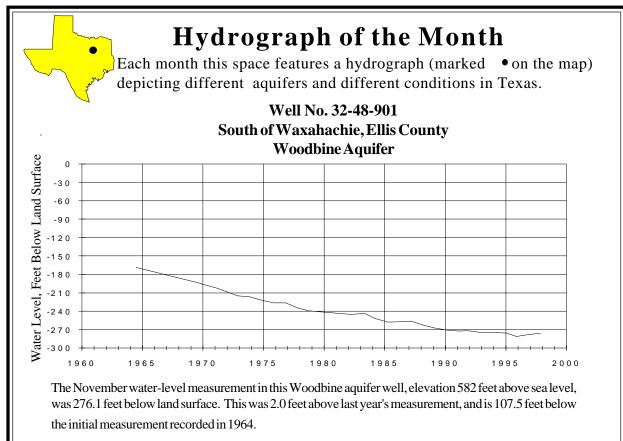
The November water-level measurement in this Lissie Willis Sand aquifer well, elevation 83 feet above sea level, was 344.32 feet below land surface. This was 14.40 feet above last month's measurement, 5.04 feet above last year's measurement, and 308.32 feet below the initial measurement recorded in 1939.



The November water-level measurement in this Edwards aquifer well, elevation 731 feet above sea level, was 60.9 feet below land surface. This was 3.40 feet above last month's measurement, 21.10 feet above last year's measurement, and 1.28 feet below the initial measurement recorded in 1962.



The November water-level measurement in this Carrizo aquifer well, elevation 446 feet above sea level, was 94.01 feet below land surface. This was 8.01 feet above last month's measurement, 17.93 feet above last year's measurement, and 12.76 feet below the initial measurement recorded in 1992.



### **TEXAS WATER CONDITIONS**



Texas Water Development Board P.O. Box 13231 Capitol Station Austin, Texas 78711-3231