

# Texas Water Development Board



# WATER Conditions

## RESERVOIR STORAGE

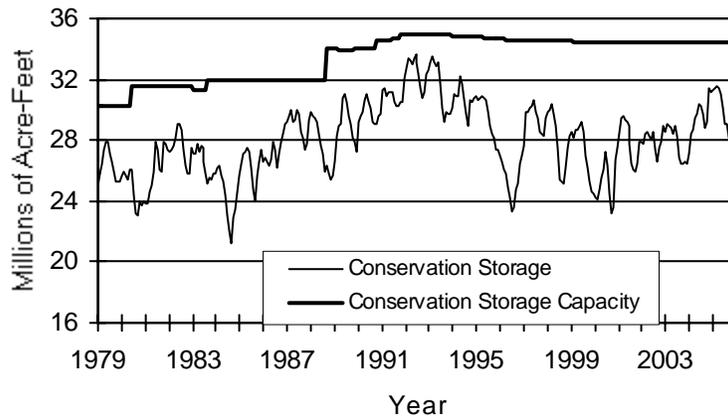
September 2005

Near the end of September, the 77 reservoirs monitored for this report held 28.19 million acre-feet in conservation storage, or 82 percent of the conservation storage capacity of the state's major reservoirs. Storage decreased during the month by 0.86 million acre-feet (-3% of conservation storage capacity). Compared to last year, storage decreased by 0.66 million acre-feet (-2%).

Storage was near capacity in the Upper Coast Region (91%) and Edwards Plateau Region (90%), but lower than one-third of capacity in the High Plains Region (28%) and Trans-Pecos Region (30%). Storage was at 100% in 7 reservoirs, and the Texas share of Amistad remained above its capacity, at 134%. Compared to this time last year, the storage increased in five regions with the greatest increase in the Low Rolling Plains Region (26%), and decreased in four regions with the sharpest decrease in the South Central Region (-11%).

By the end of September, Mexico has paid all of its water debt to the United States.

### 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.

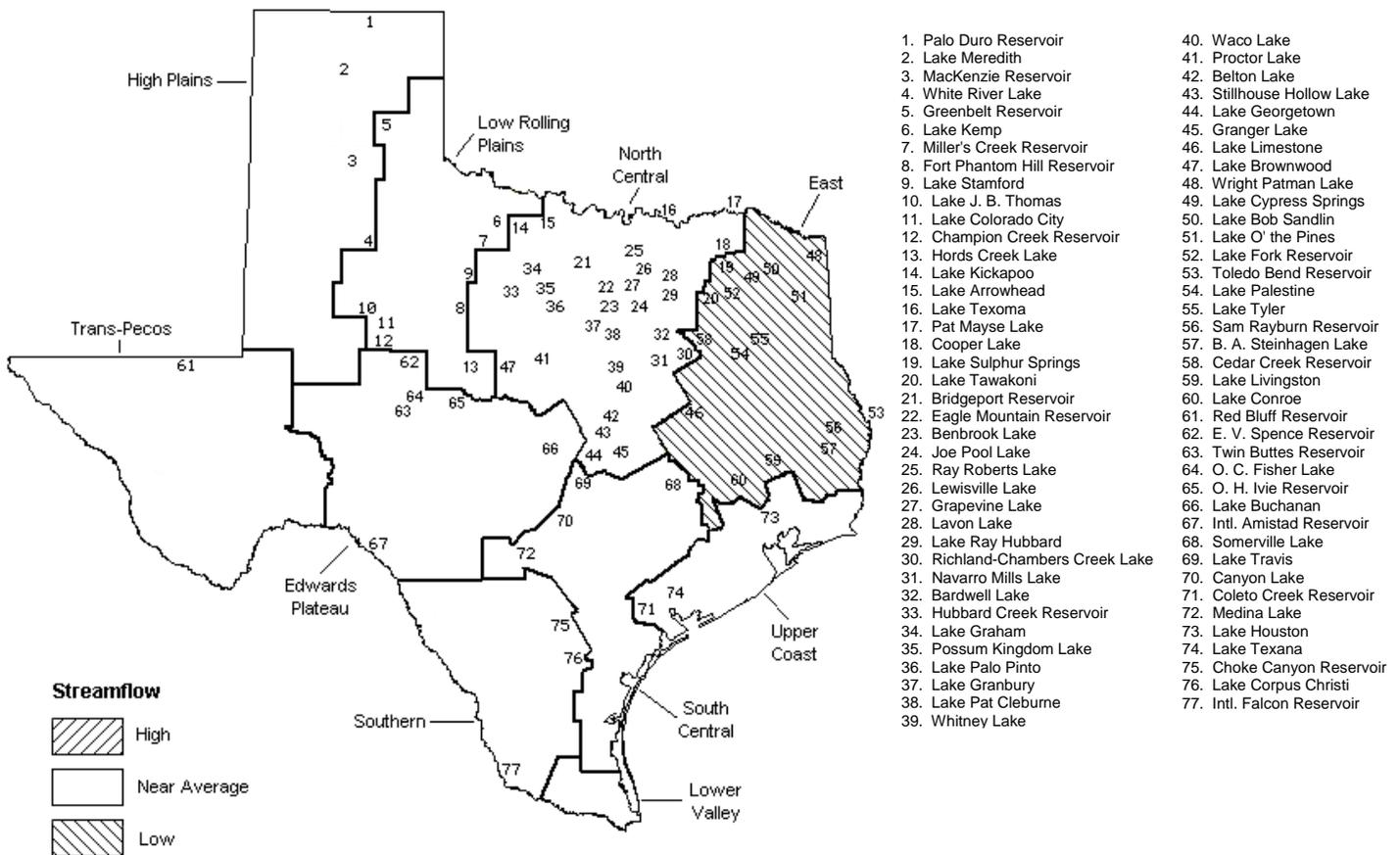
# STREAMFLOW

Of 29 reporting index stations in September, computed 30-day mean flows were high (5% - 30%) at 4 stations, low (70% - 95%) at 11 stations, very low (>5%) at 2 stations and near normal (30% - 70% exceedance) at the remaining 12 stations. Compared to August, flows have increased at 8 index stations and decreased at 21 stations.

On a regional basis, flows in September were low in East Texas Region and normal everywhere else. Streamflow in the Lower Valley Region is not monitored.

## SEPTEMBER STREAMFLOW CONDITIONS

Reservoirs Shown on Map



## CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage Late Sept. 2005 (acre-feet)	(%)	Change since Late August 2005 (acre-feet)	(%)	Change since Late September 2004 (acre-feet)	(%)
<b>HIGH PLAINS</b>								
Palo Duro Reservoir	1	60,900	2,380	4	-310	-1	-2,500	-4
Lake Meredith (Texas)	2	500,000	161,460	32	-5,950	-1	10,260	2
Lake Meredith (Texas and Oklahoma)	(2)	779,560	161,460	21	-5,950	-1	10,260	1
MacKenzie Reservoir	3	46,250	10,190	22	-240	-1	2,970	6
White River Lake	4	31,850	7,080	22	-490	-2	380	1
<b>TOTAL</b>		<b>639,000</b>	<b>181,110</b>	<b>28</b>	<b>-6,990</b>	<b>-1</b>	<b>11,110</b>	<b>2</b>
<b>LOW ROLLING PLAINS</b>								
Greenbelt Reservoir	5	58,200	22,840	39	-1,070	-2	750	1
Lake Kemp	6	319,600	283,200	89	29,490	9	103,460	32
Miller's Creek Reservoir	7	27,890	27,890	100	0	0	13,250	48
Fort Phantom Hill Reservoir	8	70,030	53,420	76	-3,980	-6	15,330	22
Lake Stamford	9	52,700	52,700	100	0	0	23,110	44
Lake J. B. Thomas	10	202,300	65,720	32	-3,660	-2	38,920	19
Lake Colorado City	11	30,800	29,230	95	-980	-3	7,950	26
Champion Creek Reservoir	12	41,600	5,790	14	-170	0	1,490	4
Hords Creek Lake	13	8,600	7,300	85	-330	-4	4,000	47
<b>TOTAL</b>		<b>811,720</b>	<b>548,090</b>	<b>68</b>	<b>19,300</b>	<b>2</b>	<b>208,260</b>	<b>26</b>
<b>NORTH CENTRAL</b>								
Lake Kickapoo	14	106,000	98,330	93	-2,480	-2	32,750	31
Lake Arrowhead	15	262,100	208,840	80	-6,610	-3	61,610	24
Lake Texoma	16	2,722,300	2,498,390	92	34,590	1	50,200	2
Pat Mayse Lake	17	124,500	102,580	82	-3,690	-3	-6,570	-5
Cooper Lake	18	273,000	185,160	68	-17,850	-7	17,580	6
Lake Sulphur Springs	19	17,710	12,750	72	-2,250	-13	-2,840	-16
Lake Tawakoni	20	936,200	696,300	74	-27,700	-3	-151,900	-16
Bridgeport Reservoir	21	374,830	278,500	74	-20,900	-6	-52,600	-14
Eagle Mountain Reservoir	22	178,380	144,100	81	-6,000	-3	-12,200	-7
Benbrook Lake	23	88,200	52,680	60	-8,330	-9	-20,190	-23
Joe Pool Lake	24	175,800	160,420	91	-5,140	-3	-15,080	-9
Ray Roberts Lake	25	798,760	744,210	93	-19,030	-2	-40,970	-5
Lewisville Lake	26	555,000	509,220	92	-35,990	-6	-45,780	-8
Grapevine Lake	27	187,700	151,000	80	-5,760	-3	-24,560	-13
Lavon Lake	28	443,800	323,440	73	-34,590	-8	-77,140	-17
Lake Ray Hubbard	29	413,420	360,800	87	-19,500	-5	-11,100	-3
Richland-Chambers Creek Lake	30	1,103,820	1,018,000	92	-34,000	-3	-85,820	-8
Navarro Mills Lake	31	55,810	45,340	81	-2,790	-5	-8,050	-14
Bardwell Lake	32	53,580	40,580	76	-2,530	-5	-5,300	-10
Hubbard Creek Reservoir	33	317,800	194,820	61	-6,900	-2	73,980	23
Lake Graham	34	45,000	36,530	81	-1,840	-4	6,610	15
Possum Kingdom Lake	35	551,820	523,400	95	-21,200	-4	-2,700	0
Lake Palo Pinto	36	27,650	18,730	68	-1,500	-5	-1,870	-7
Lake Granbury	37	135,680	134,000	99	800	1	1,400	1
Lake Pat Cleburne	38	25,300	20,530	81	-1,200	-5	-3,940	-16
Whitney Lake	39	622,800	592,790	95	-24,780	-4	46,930	8
Waco Lake	40	144,500	144,500	100	0	0	0	0
Proctor Lake	41	55,590	42,220	76	-2,930	-5	-12,970	-23
Belton Lake	42	434,500	429,300	99	-5,200	-1	-5,200	-1
Stillhouse Hollow Lake	43	226,060	225,240	100	-820	0	580	0
Lake Georgetown	44	37,010	29,820	81	-3,010	-8	-1,940	-5
Granger Lake	45	54,280	54,280	100	0	0	0	0
Lake Limestone	46	215,750	187,100	87	-8,840	-4	-15,880	-7
Lake Brownwood	47	143,400	128,140	89	-4,050	-3	-1,740	-1
<b>TOTAL</b>		<b>11,908,050</b>	<b>10,392,040</b>	<b>87</b>	<b>-302,020</b>	<b>-3</b>	<b>-314,700</b>	<b>-3</b>

## CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

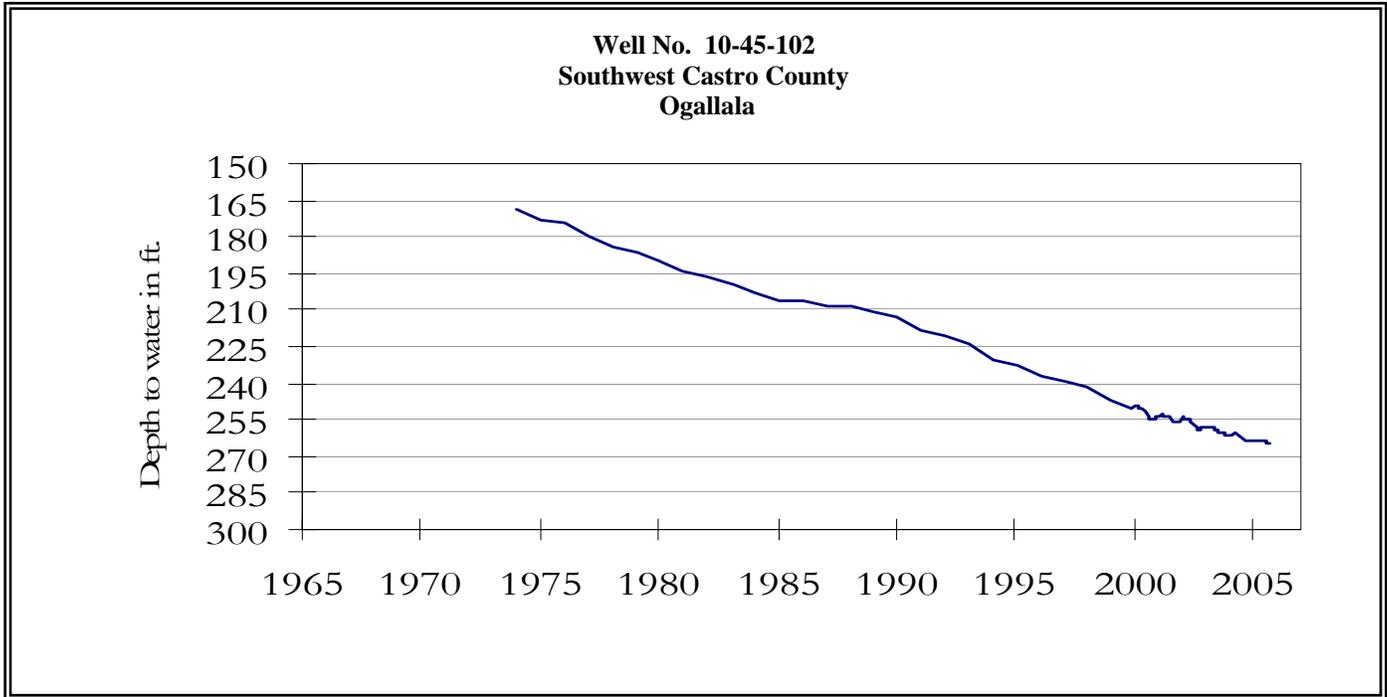
Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage Late Sept. 2005 (acre-feet) (%)	Change since Late August 2005 (acre-feet) (%)	Change since Late September 2004 (acre-feet) (%)
<b>EAST</b>					
Wright Patman Lake	48	142,700	142,700 100	0 0	0 0
Lake Cypress Springs	49	66,800	60,260 90	-1,490 -2	-3,840 -6
Lake Bob Sandlin	50	202,300	170,200 84	-5,500 -3	-21,300 -11
Lake O' the Pines	51	252,000	199,680 79	-3,080 -1	-51,710 -21
Lake Fork Reservoir	52	635,200	598,600 94	-14,600 -2	-35,300 -6
Toledo Bend Reservoir	53	4,472,900	3,154,000 71	-74,000 -2	-657,000 -15
Lake Palestine	54	411,300	359,370 87	-13,350 -3	-28,080 -7
Lake Tyler	55	73,700	65,680 89	-2,360 -3	-6,890 -9
Sam Rayburn Reservoir	56	2,876,300	2,543,710 88	33,770 1	21,290 1
B. A. Steinhagen Lake	57	94,200	53,410 57	-37,600 -40	-39,540 -42
Cedar Creek Reservoir	58	637,050	554,500 87	-21,800 -3	-41,900 -7
Lake Livingston	59	1,750,000	1,438,000 82	-274,000 -16	-292,000 -17
Lake Conroe	60	429,900	367,600 86	-24,700 -6	-25,400 -6
<b>TOTAL</b>		<b>12,044,350</b>	<b>9,707,710 81</b>	<b>-438,710 -4</b>	<b>-1,181,670 -10</b>
<b>TRANS-PECOS</b>					
Red Bluff Reservoir	61	307,000	91,500 30	-4,450 -1	16,440 5
<b>TOTAL</b>		<b>307,000</b>	<b>91,500 30</b>	<b>-4,450 -1</b>	<b>16,440 5</b>
<b>EDWARDS PLATEAU</b>					
E. V. Spence Reservoir	62	488,760	99,780 20	-3,120 -1	57,240 12
Twin Buttes Reservoir	63	177,800	44,240 25	400 0	39,780 22
O.C. Fisher Lake	64	119,200	15,380 13	-1,320 -1	13,820 12
O. H. Ivie Reservoir	65	554,340	298,700 54	-10,600 -2	134,990 24
Lake Buchanan	66	896,980	787,040 88	-52,950 -6	-65,990 -7
Amistad Reservoir (Texas)	67	1,771,030	2,368,000 134	14,000 1	533,000 30
Amistad Reservoir (Texas and Mexico)	(67)	3,151,300	2,768,000 88	-23,000 -1	618,000 20
<b>TOTAL</b>		<b>4,008,110</b>	<b>3,613,140 90</b>	<b>-53,590 -1</b>	<b>712,840 18</b>
<b>SOUTH CENTRAL</b>					
Somerville Lake	68	155,060	135,690 88	-6,920 -4	-15,890 -10
Lake Travis	69	1,144,100	967,600 85	-66,200 -6	-152,000 -13
Canyon Lake	70	385,600	369,290 96	-8,320 -2	-9,480 -2
Coletto Creek Reservoir	71	35,060	27,910 80	-1,170 -3	-2,330 -7
Medina Lake	72	254,000	222,900 88	-11,200 -4	-31,100 -12
<b>TOTAL</b>		<b>1,973,820</b>	<b>1,723,390 87</b>	<b>-93,810 -5</b>	<b>-210,800 -11</b>
<b>UPPER COAST</b>					
Lake Houston	73	128,860	128,800 100	-60 0	-60 0
Lake Texana	74	157,900	132,900 84	-8,620 -5	-6,450 -4
<b>TOTAL</b>		<b>286,760</b>	<b>261,700 91</b>	<b>-8,680 -3</b>	<b>-6,510 -2</b>
<b>SOUTHERN</b>					
Choke Canyon Reservoir	75	695,260	644,000 93	-12,000 -2	-45,000 -6
Lake Corpus Christi	76	241,240	169,800 70	-12,600 -5	-69,500 -29
Falcon Reservoir (Texas)	77	1,555,120	861,000 55	50,000 3	215,000 14
Falcon Reservoir (Texas and Mexico)	(77)	2,653,290	1,362,000 51	36,000 1	-303,000 -11
<b>TOTAL</b>		<b>2,491,620</b>	<b>1,674,800 67</b>	<b>25,400 1</b>	<b>100,500 4</b>
<b>STATE TOTAL</b>		<b>34,470,430</b>	<b>28,193,480 82</b>	<b>-863,550 -3</b>	<b>-664,530 -2</b>

Note:

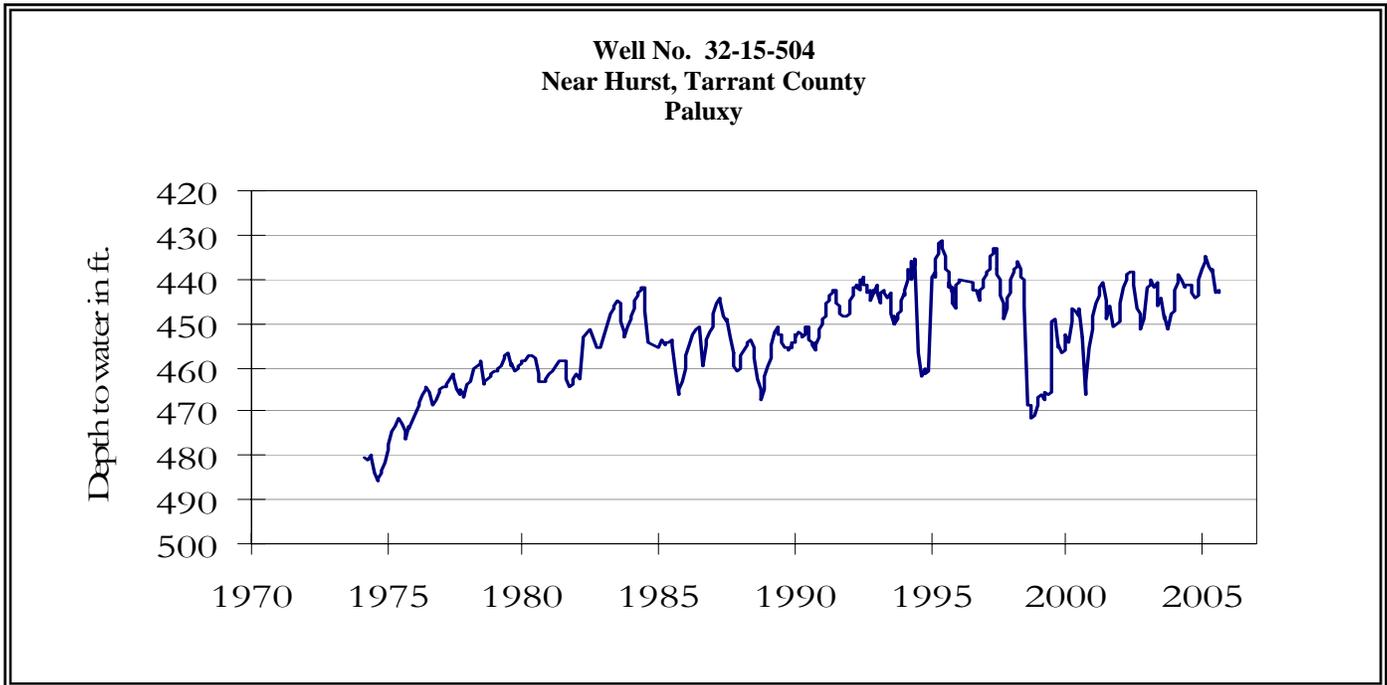
Conservation storage capacity is the space available to store water above the level of invert of lowest outlet works and below the level of top of conservation pool or normal maximum operating level. Conservation storage refers to the volume of water held within the conservation storage space. Not included 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.) Percentage of conservation storage is based on the conservation storage capacity of the reservoir and the conservation storage in the reservoir for date shown. Percent change is given by  $\% \text{ Change} = 100 * (\text{current conservation storage} - \text{past conservation storage}) / \text{conservation storage capacity}$ .

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). Preliminary figures are shown for the Texas' share of conservation storage in all reservoirs.

# SEPTEMBER GROUND WATER LEVELS IN OBSERVATION WELLS

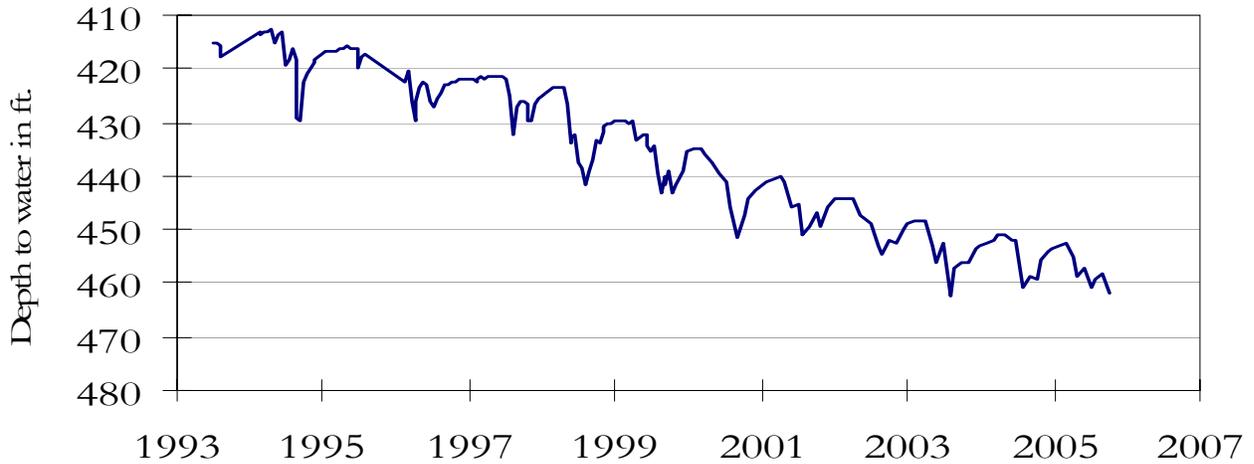


The water-level measurement is not available this month for this Ogallala aquifer well. The graph presented is from last month's report.



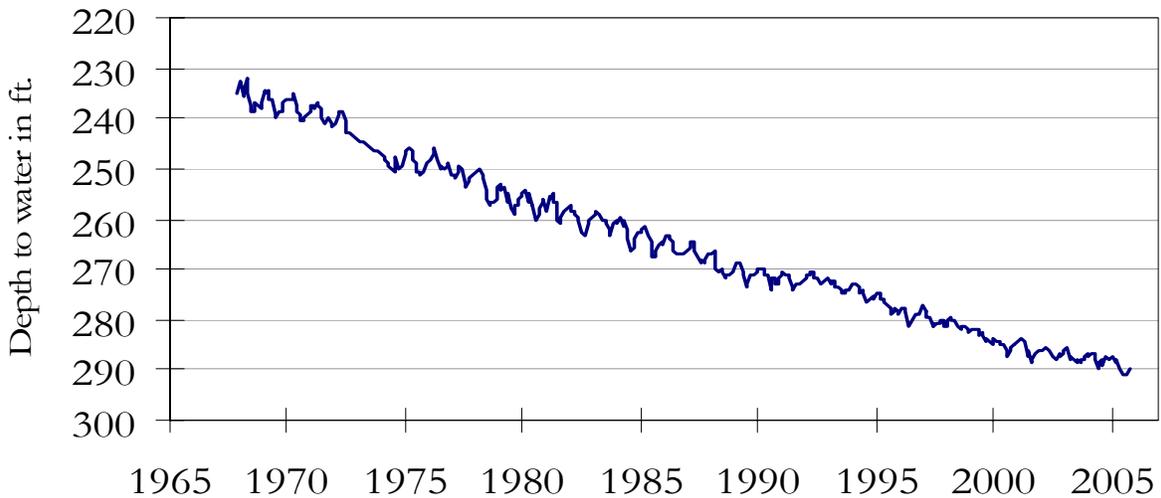
The water-level measurement is not available this month for this Paluxy Formation Trinity aquifer well. The graph presented is from last month's report.

**Well No. 40-35-404  
Gatesville, Coryell County  
Hosston/Trinity**



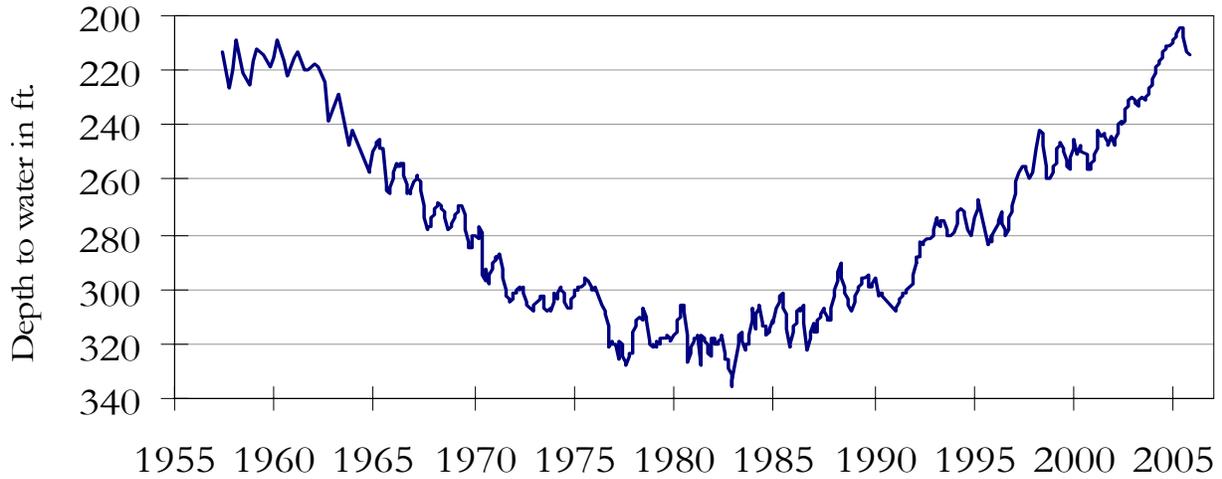
The late September water-level measurement in this Hosston Formation Trinity aquifer well, elevation 823 feet above sea level, was 462.05 feet below land surface. This water level was 3.59 feet below last month's measurement, 2.65 feet below last year's measurement, and 170.05 feet below the initial measurement recorded in 1955.

**Well No. 49-13-301  
El Paso, El Paso County  
Bolson Deposits**



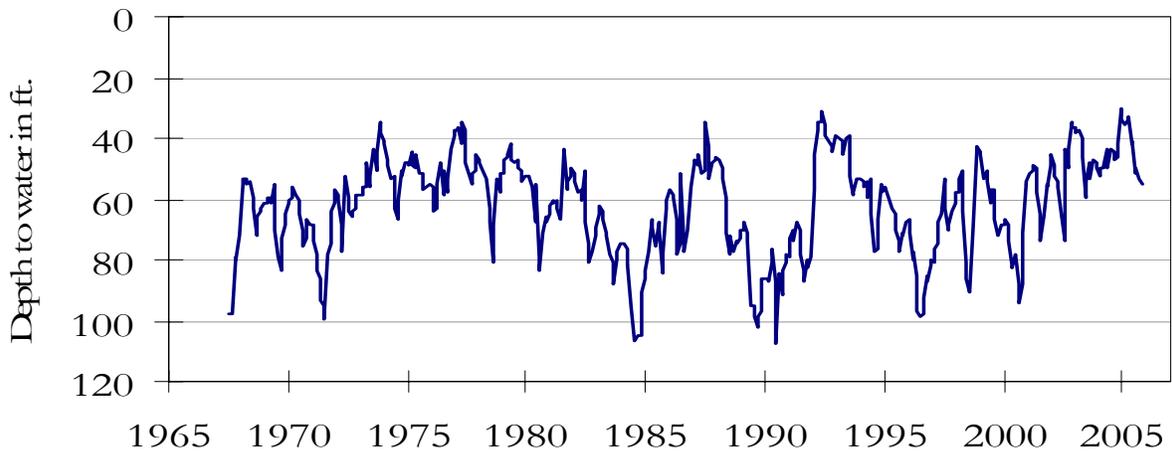
The late September water-level measurement in this Hueco Bolson aquifer well, elevation 3,882 feet above sea level, was 289.77 feet below land surface. This was 1.2 feet above last month's measurement, 2.17 feet below last year's measurement, and 57.87 feet below the initial measurement recorded in 1964.

**Well No. 65-14-409  
Alief, Harris County  
Evangeline**



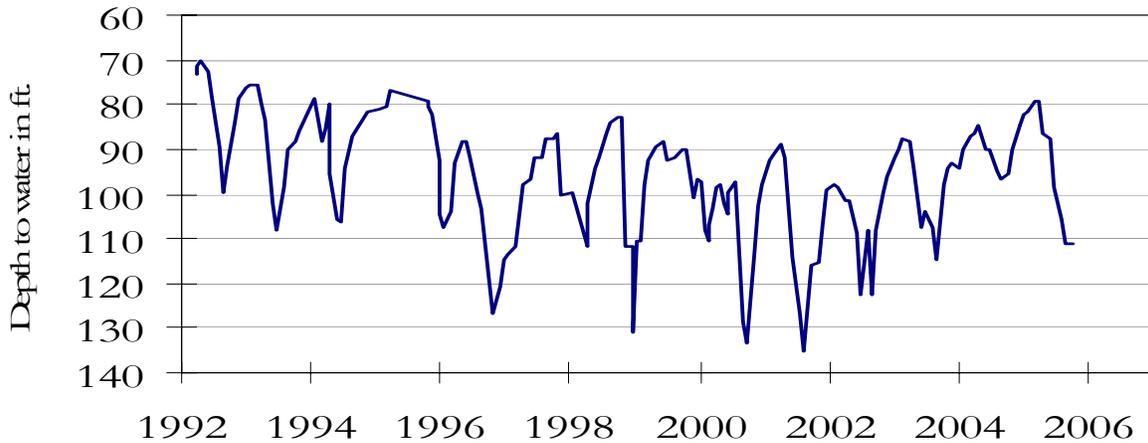
The late September water-level measurement in this Evangeline Formation Gulf Coast aquifer well, elevation 66 feet above sea level, was 214.10 feet below land surface. This was 1.09 feet below last month's measurement, 3.20 feet below last year's measurement, and 78.60 feet below the initial measurement recorded in 1947.

**Well No. 68-37-203 (J-17)  
In San Antonio, Bexar County  
Edwards and Associated Limestones**



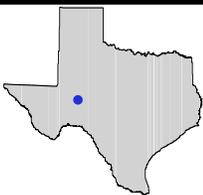
The late September water-level measurement in this Edwards (BFZ) aquifer well, elevation 731 feet above sea level, was 54.90 feet below land surface. This was 1.64 feet below last month's measurement, 8.40 feet below last year's measurement, and 8.26 feet below the initial measurement recorded in 1962.

**Well No. 68-60-912**  
**Between Poteet and Pleasanton, Atascosa County**  
**Carrizo**



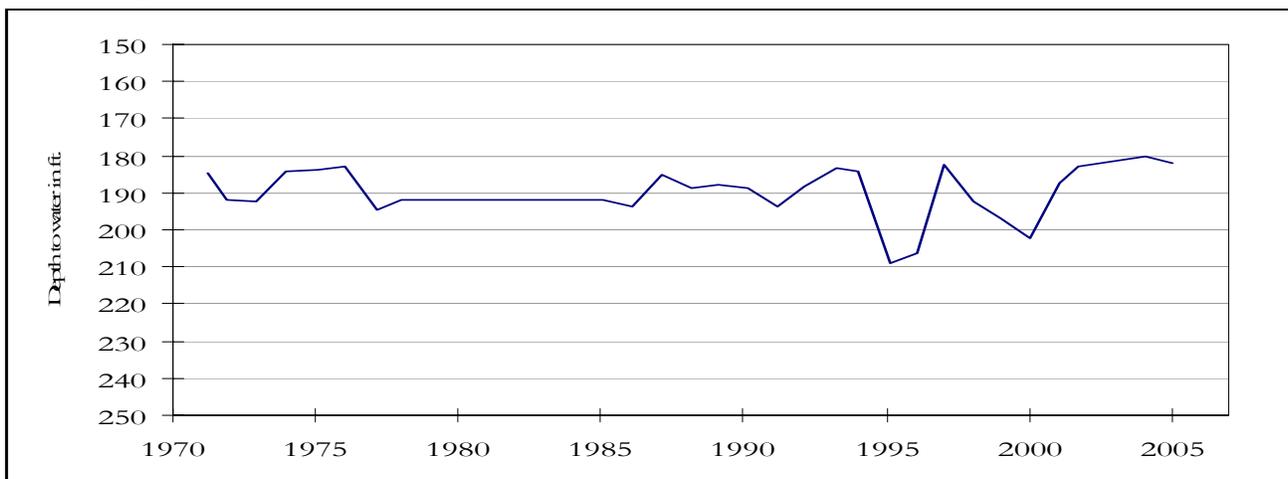
The late September water-level measurement in this Carrizo aquifer well, elevation 446 feet above sea level, was 110.93 feet below land surface. This measurement was 0.16 feet above last month's measurement, 15.18 feet below last year's measurement, and 75.57 feet below the initial measurement recorded in 1965.

***HYDROGRAPH OF THE MONTH***



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

**Well No. 51-48-603**  
**Presidio County**



This water level observation well, located in Marfa, at an elevation of 4700 feet ASL, was completed in the Igneous aquifer. Recharge to the aquifer is from precipitation on the outcrop area and runoff from the adjacent mountains, particularly through permeable alluvial fans overlying the aquifer at the base of the mountains.

September, 2005

Water levels declined in three of the seven key monitoring wells since the beginning of September, ranging from 1.09 feet in the Harris Co. (Evangeline) well to 3.59 feet in the Gatesville (Hosston/Trinity) well. Water levels rose 0.16 feet in the Atascosa Co. (Carrizo) well and 1.2 feet in the El Paso Co. (Bolson Deposits) well. The J-17 well recorded a water level of 54.9 feet below the land surface, a decline of 1.64 feet from the August 2005 measurement. Water level data was not available for the Castro Co. (Ogallala) and Tarrant Co. (Paluxy) wells.

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