

# Texas Water Development Board



# WATER Conditions

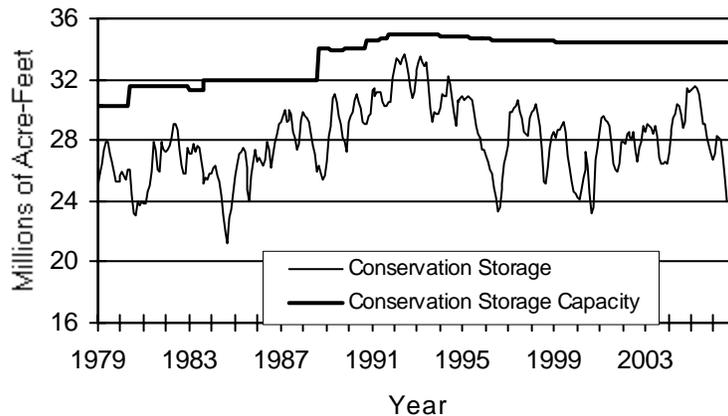
## RESERVOIR STORAGE

August 2006

Near the end of August, the 77 reservoirs monitored for this report held 24.0 million acre-feet in conservation storage, or 70 percent of the conservation storage capacity of the state's major reservoirs. Statewide total storage is below normal for this time of year. Storage decreased during the month by 1.5 million acre-feet (-4% of conservation storage capacity). Compared to last year, storage decreased by 5.05 million acre-feet (-15%).

Storage was 96% of capacity in the Upper Coast Region but below 90% in all other Regions, with the lowest in the High Plains Region (19%). Storage was at 100% in 2 reservoirs and Texas' share of Amistad is at 105%. During August, storage increased minimally or remained unchanged in 6 reservoirs but decreased in 71 reservoirs. Regionally, storage decreased in 7 out of 9 Regions in the range of 2% - 6%, and increased only slightly the High Plains and Trans-Pecos Regions. Compared to this time last year, the storage decreased in all Regions except the Upper Coast where storage increased by 1%. The sharpest decrease was in the South Central Region (-28%).

### CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS



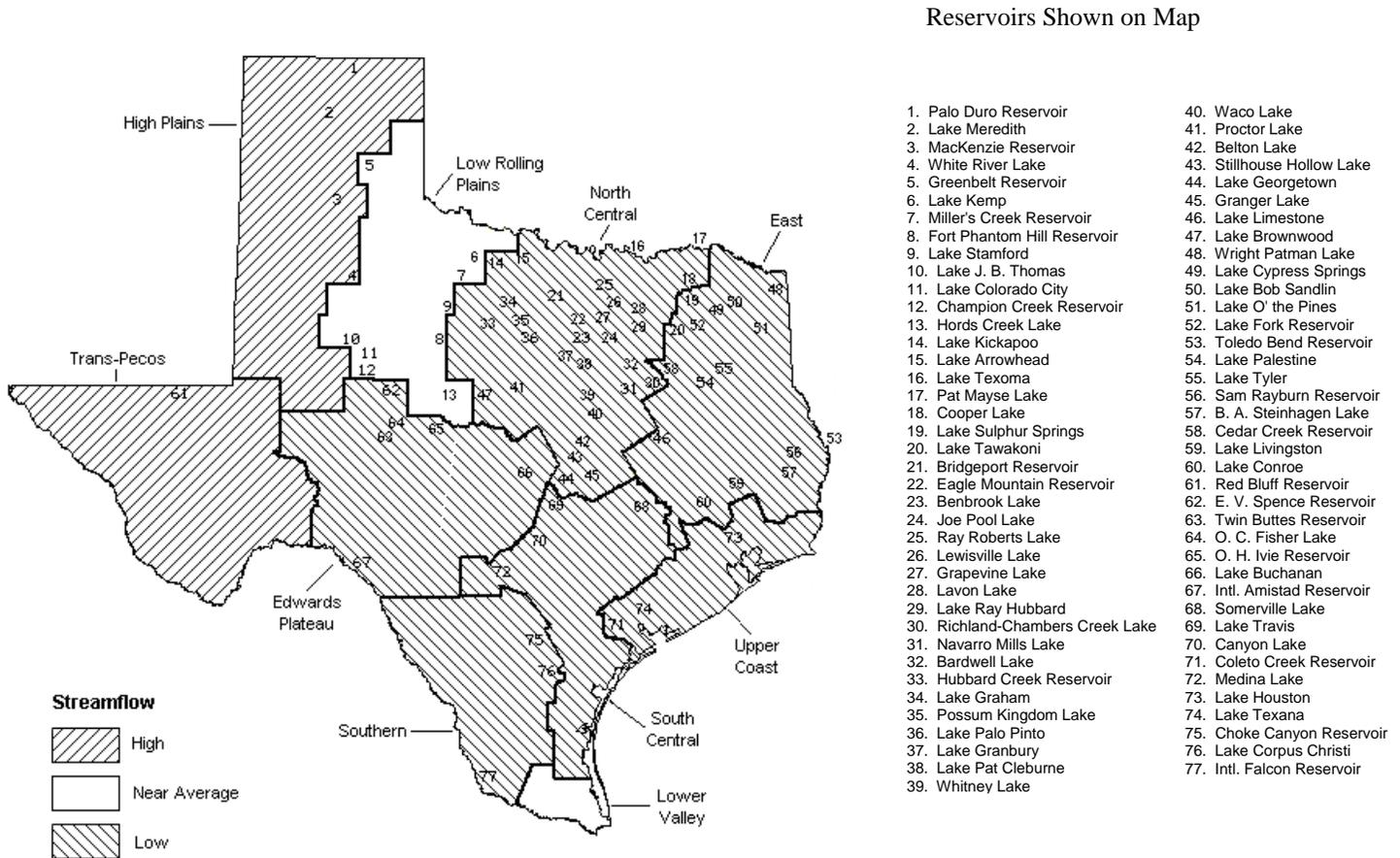
Current data are based on elevation near end of month at 77 reservoirs that represent 98 percent of total conservation storage capacity in Texas reservoirs having a capacity of 5,000 acre-feet or more.

# STREAMFLOW

Of 29 reporting index stations in August, computed 30-day mean flows were very high (<5%) at 1 stations, high (5% - 30%) at 2 stations, low (70% - 95%) at 16 stations, very low (>95%) at 4 station, and near normal (30% - 70% exceedance) at the remaining 6 stations. Compared to July, flows have increased at 8 index stations and decreased at 19 stations.

On a regional basis, flows in August were high in High Plains and Trans-Pecos Regions, normal in Low Rolling Plains, but low in all other Regions. Streamflow in the Lower Valley Region is not monitored.

## AUGUST STREAMFLOW CONDITIONS



## CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage Late Aug. 2006 (acre-feet)	(%)	Change since Late July 2006 (acre-feet)	(%)	Change since Late August 2005 (acre-feet)	(%)
<b>HIGH PLAINS</b>								
Palo Duro Reservoir	1	60,900	910	1	-60	0	-1,780	-3
Lake Meredith (Texas)	2	500,000	110,800	22	2,960	1	-56,610	-11
Lake Meredith (Texas and Oklahoma)	(2)	779,560	110,800	14	2,960	0	-56,610	-7
MacKenzie Reservoir	3	46,250	8,680	19	-70	0	-1,750	-4
White River Lake	4	31,850	3,320	10	-220	-1	-4,250	-13
<b>TOTAL</b>		<b>639,000</b>	<b>123,710</b>	<b>19</b>	<b>2,610</b>	<b>0</b>	<b>-64,390</b>	<b>-10</b>
<b>LOW ROLLING PLAINS</b>								
Greenbelt Reservoir	5	58,200	18,640	32	0	0	-5,270	-9
Lake Kemp	6	319,600	169,730	53	-26,600	-8	-83,980	-26
Miller's Creek Reservoir	7	27,890	20,230	73	-1,310	-5	-7,660	-27
Fort Phantom Hill Reservoir	8	70,030	43,650	62	-3,640	-5	-13,750	-20
Lake Stamford	9	52,700	37,550	71	-3,230	-6	-15,150	-29
Lake J. B. Thomas	10	202,300	37,410	18	-1,780	-1	-31,970	-16
Lake Colorado City	11	30,800	24,250	79	-250	-1	-5,960	-19
Champion Creek Reservoir	12	41,600	5,370	13	-220	-1	-590	-1
Hords Creek Lake	13	8,600	5,140	60	-270	-3	-2,490	-29
<b>TOTAL</b>		<b>811,720</b>	<b>361,970</b>	<b>45</b>	<b>-37,300</b>	<b>-5</b>	<b>-166,820</b>	<b>-21</b>
<b>NORTH CENTRAL</b>								
Lake Kickapoo	14	106,000	69,290	65	-4,620	-4	-31,520	-30
Lake Arrowhead	15	262,100	179,300	68	-10,450	-4	-36,150	-14
Lake Texoma	16	2,722,300	2,197,350	81	-137,240	-5	-266,450	-10
Pat Mayse Lake	17	124,500	82,930	67	-3,510	-3	-23,340	-19
Cooper Lake	18	273,000	109,160	40	-18,520	-7	-93,850	-34
Lake Sulphur Springs	19	17,710	14,280	81	-930	-5	-720	-4
Lake Tawakoni	20	936,200	571,200	61	-35,400	-4	-152,800	-16
Bridgeport Reservoir	21	374,830	200,600	54	-19,200	-5	-98,800	-26
Eagle Mountain Reservoir	22	178,380	135,600	76	-4,600	-3	-14,500	-8
Benbrook Lake	23	88,200	50,200	57	-11,670	-13	-10,810	-12
Joe Pool Lake	24	175,800	162,460	92	-5,040	-3	-3,100	-2
Ray Roberts Lake	25	798,760	633,720	79	-35,750	-4	-129,520	-16
Lewisville Lake	26	555,000	383,240	69	-15,670	-3	-161,970	-29
Grapevine Lake	27	187,700	115,380	61	-9,070	-5	-41,380	-22
Lavon Lake	28	443,800	195,340	44	-31,720	-7	-162,690	-37
Lake Ray Hubbard	29	413,420	330,200	80	-21,800	-5	-50,100	-12
Richland-Chambers Creek Lake	30	1,103,820	802,000	73	-43,300	-4	-250,000	-23
Navarro Mills Lake	31	55,810	27,170	49	-3,180	-6	-20,960	-38
Bardwell Lake	32	53,580	38,400	72	-2,540	-5	-4,710	-9
Hubbard Creek Reservoir	33	317,800	164,940	52	-7,870	-2	-36,780	-12
Lake Graham	34	45,000	38,080	85	-2,550	-6	-290	-1
Possum Kingdom Lake	35	551,820	454,480	82	-26,170	-5	-90,120	-16
Lake Palo Pinto	36	27,650	14,560	53	-2,710	-10	-5,670	-21
Lake Granbury	37	135,680	125,120	92	-2,770	-2	-8,080	-6
Lake Pat Cleburne	38	25,300	20,430	81	-1,540	-6	-1,300	-5
Whitney Lake	39	622,800	474,310	76	-36,320	-6	-143,260	-23
Waco Lake	40	144,500	136,340	94	-8,160	-6	-8,160	-6
Proctor Lake	41	55,590	29,610	53	-3,420	-6	-15,540	-28
Belton Lake	42	434,500	375,060	86	-16,360	-4	-59,440	-14
Stillhouse Hollow Lake	43	226,060	215,770	95	-6,930	-3	-10,290	-5
Lake Georgetown	44	37,010	18,270	49	-2,840	-8	-14,560	-39
Granger Lake	45	54,280	45,780	84	-4,730	-9	-8,500	-16
Lake Limestone	46	215,750	187,580	87	-10,600	-5	-8,360	-4
Lake Brownwood	47	143,400	101,620	71	-6,340	-4	-30,570	-21
<b>TOTAL</b>		<b>11,908,050</b>	<b>8,699,770</b>	<b>73</b>	<b>-553,520</b>	<b>-5</b>	<b>-1,994,290</b>	<b>-17</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 Aug. 2006 (acre-feet) (%)	Change since Late July 2006 (acre-feet) (%)	Change since Late August 2005 (acre-feet) (%)
<b>EAST</b>					
Wright Patman Lake	48	142,700	142,700 100	0 0	0 0
Lake Cypress Springs	49	66,800	54,320 81	-2,350 -4	-7,430 -11
Lake Bob Sandlin	50	202,300	133,100 66	-8,300 -4	-42,600 -21
Lake O' the Pines	51	252,000	179,420 71	-10,680 -4	-23,340 -9
Lake Fork Reservoir	52	635,200	565,200 89	-14,300 -2	-48,000 -8
Toledo Bend Reservoir	53	4,472,900	2,961,000 66	-366,000 -8	-267,000 -6
Lake Palestine	54	411,300	317,090 77	-20,410 -5	-55,630 -14
Lake Tyler	55	73,700	49,760 68	-4,260 -6	-18,280 -25
Sam Rayburn Reservoir	56	2,876,300	2,504,740 87	-130,830 -5	-5,200 0
B. A. Steinhagen Lake	57	94,200	180* 0	-10,720 -16	-90,830 -96
Cedar Creek Reservoir	58	637,050	488,600 77	-28,800 -5	-87,700 -14
Lake Livingston	59	1,750,000	1,457,000 83	-63,000 -4	-255,000 -15
Lake Conroe	60	429,900	341,600 79	-7,300 -2	-50,700 -12
<b>TOTAL</b>		<b>12,044,350</b>	<b>9,194,710 77</b>	<b>-666,950 -6</b>	<b>-951,710 -8</b>
<b>TRANS-PECOS</b>					
Red Bluff Reservoir	61	307,000	87,380 28	910 0	-8,570 -3
<b>TOTAL</b>		<b>307,000</b>	<b>87,380 28</b>	<b>910 0</b>	<b>-8,570 -3</b>
<b>EDWARDS PLATEAU</b>					
E. V. Spence Reservoir	62	488,760	71,870 15	-3,370 -1	-31,030 -6
Twin Buttes Reservoir	63	177,800	34,580 19	-2,000 -1	-9,260 -5
O.C. Fisher Lake	64	119,200	9,120 8	-820 -1	-7,580 -6
O. H. Ivie Reservoir	65	554,340	242,500 44	-5,100 -1	-66,800 -12
Lake Buchanan	66	896,980	577,900 64	-49,560 -6	-262,090 -29
Amistad Reservoir (Texas)	67	1,771,030	1,851,000 105	-23,000 -1	-503,000 -28
Amistad Reservoir (Texas and Mexico)	(67)	3,151,300	2,367,000 75	-6,000 0	-424,000 -13
<b>TOTAL</b>		<b>4,008,110</b>	<b>2,786,970 70</b>	<b>-83,850 -2</b>	<b>-879,760 -22</b>
<b>SOUTH CENTRAL</b>					
Somerville Lake	68	155,060	125,960 81	-5,020 -3	-16,650 -11
Lake Travis	69	1,144,100	670,520 59	-68,380 -6	-363,280 -32
Canyon Lake	70	385,600	332,060 86	-7,670 -2	-45,550 -12
Coletto Creek Reservoir	71	35,060	25,680 73	-1,060 -3	-3,400 -10
Medina Lake	72	254,000	111,900 44	-13,700 -5	-122,200 -48
<b>TOTAL</b>		<b>1,973,820</b>	<b>1,266,120 64</b>	<b>-95,830 -5</b>	<b>-551,080 -28</b>
<b>UPPER COAST</b>					
Lake Houston	73	128,860	128,860 100	0 0	0 0
Lake Texana	74	157,900	145,350 92	-11,620 -7	3,830 2
<b>TOTAL</b>		<b>286,760</b>	<b>274,210 96</b>	<b>-11,620 -4</b>	<b>3,830 1</b>
<b>SOUTHERN</b>					
Choke Canyon Reservoir	75	695,260	537,000 77	-16,000 -2	-119,000 -17
Lake Corpus Christi	76	241,240	80,690 33	3,580 1	-101,710 -42
Falcon Reservoir (Texas)	77	1,555,120	594,000 38	-57,000 -4	-217,000 -14
Falcon Reservoir (Texas and Mexico)	(77)	2,653,290	910,000 34	-64,000 -2	-416,000 -16
<b>TOTAL</b>		<b>2,491,620</b>	<b>1,211,690 49</b>	<b>-69,420 -3</b>	<b>-437,710 -18</b>
<b>STATE TOTAL</b>		<b>34,470,430</b>	<b>24,006,530 70</b>	<b>-1,514,970 -4</b>	<b>-5,050,500 -15</b>

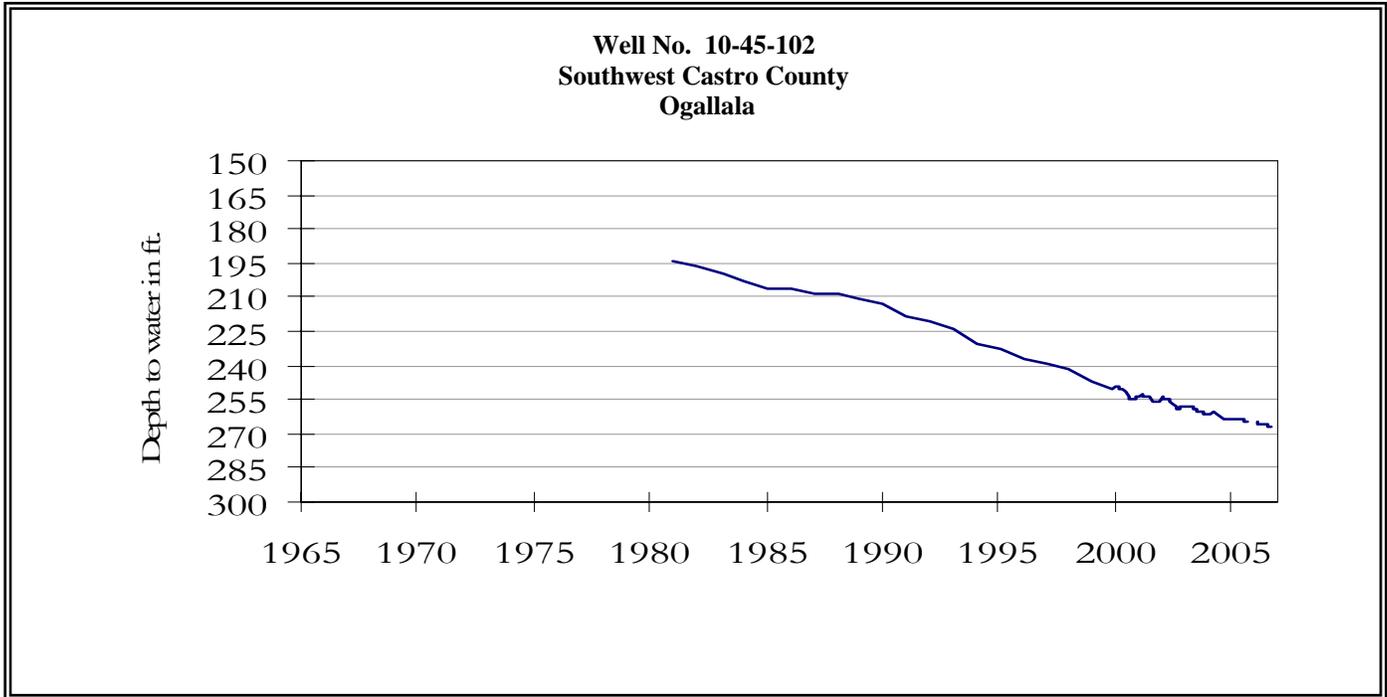
\* Due to lake's maintenance need.

Note:

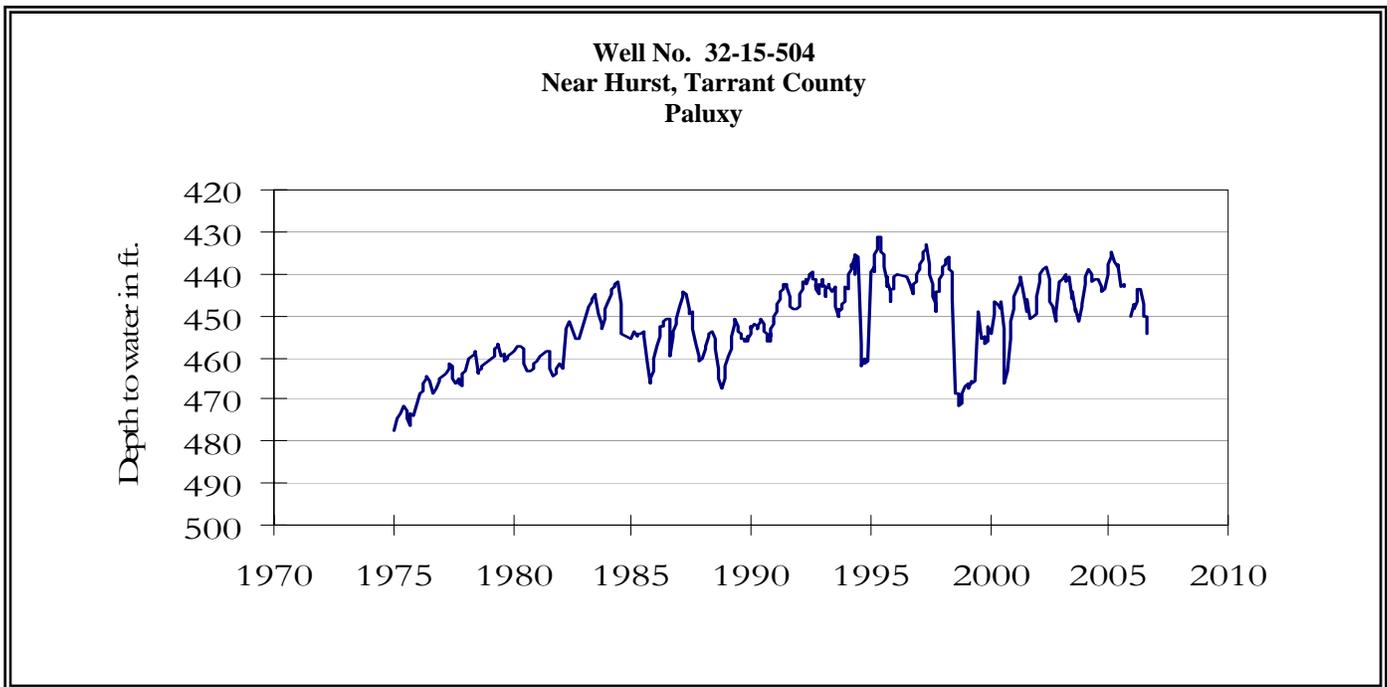
Conservation storage capacity is the space available to store water above the level of invert of lowest outlet works and below the level of top of conservation pool or normal maximum operating level. Conservation storage refers to the volume of water held within the conservation storage space. Not included 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.

# AUGUST GROUND WATER LEVELS IN OBSERVATION WELLS

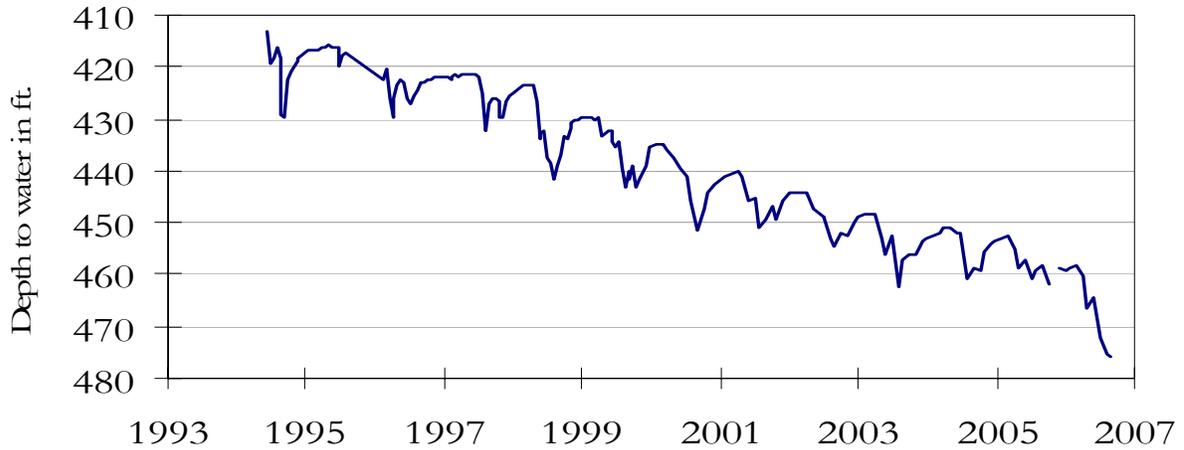


The late August water-level measurement in this Ogallala Aquifer well, elevation 3,816 feet above sea level, was 266.73 feet below land surface. This measurement was 0.21 feet below last month's measurement, 1.92 feet below last year's measurement, and 110.73 feet below the initial measurement recorded in 1968. No water level measurements were recorded for September through December 2005.



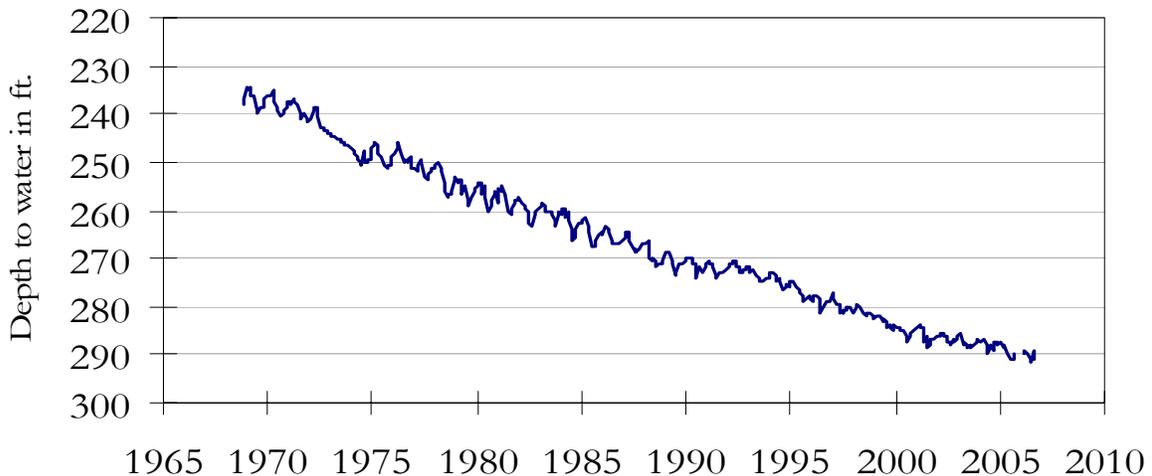
The late August water-level measurement in this Paluxy Formation Trinity Aquifer well, elevation 535 feet above sea level, was 454.66 feet below land surface. This measurement was 4.21 feet below last month's measurement, 11.73 feet below last year's measurement, and 76.66 feet below the initial measurement recorded in 1953. No water level measurements were recorded for September or October 2005.

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



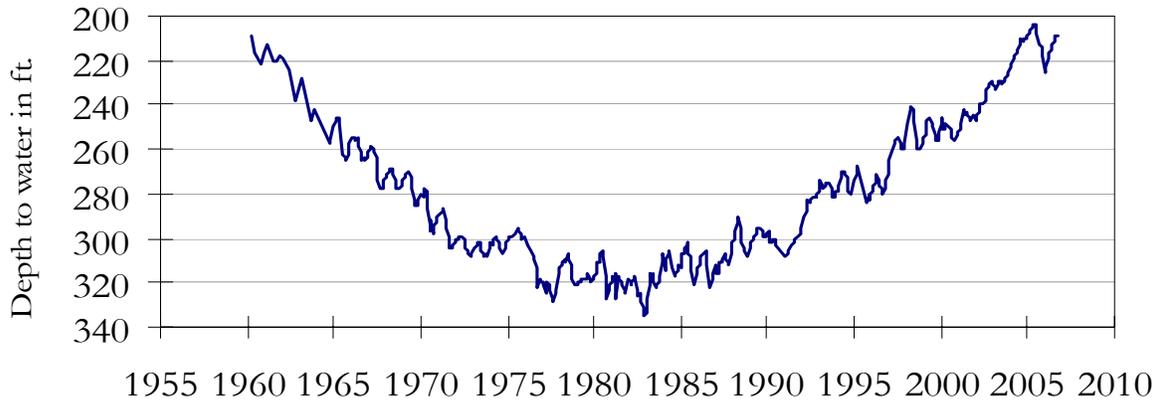
The late August water-level measurement in this Hosston Formation Trinity Aquifer well, elevation 823 feet above sea level, was 475.75 feet below land surface. This water level was 0.19 feet below last month's measurement, 17.29 feet below last year's measurement, and 183.75 feet below the initial measurement recorded in 1955. No water level measurement was recorded for October 2005.

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



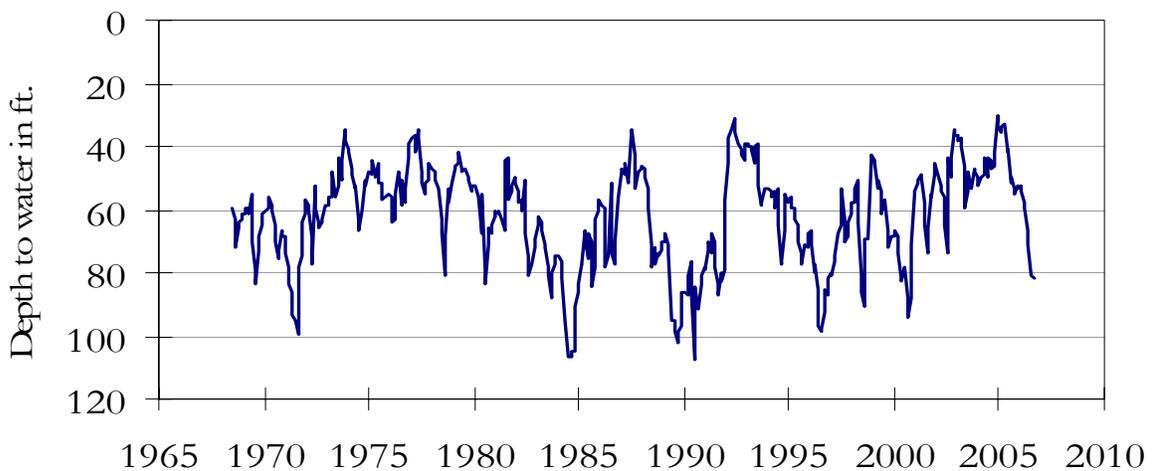
The late August water-level measurement in this Hueco Bolson Aquifer well, elevation 3,882 feet above sea level, was 290.93 feet below land surface. This was 1.53 feet below last month's measurement, 0.04 feet above last year's measurement, and 59.03 feet below the initial measurement in 1964. No water level measurements were recorded for October or December 2005.

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



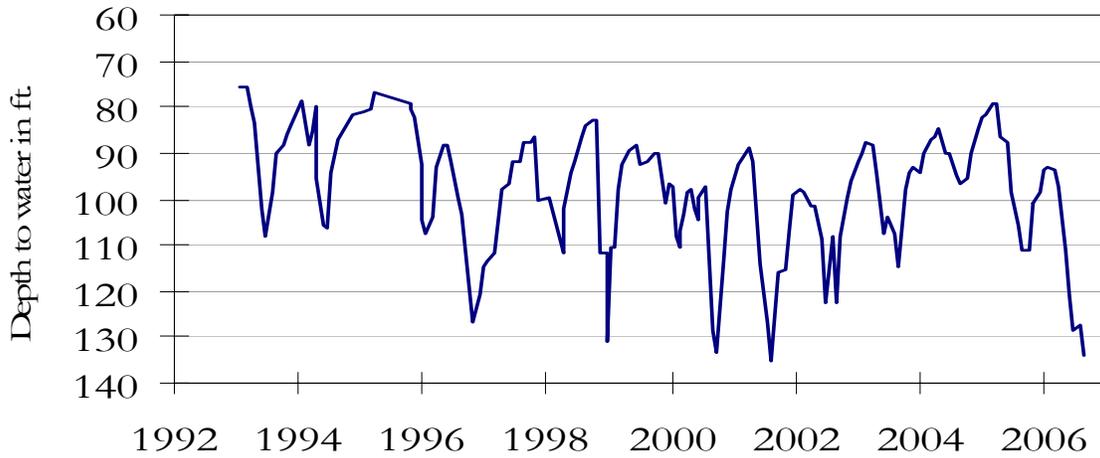
The late August water-level measurement in this Evangeline Formation Gulf Coast Aquifer well, elevation 66 feet above sea level, was 208.61 feet below land surface. This was 0.56 feet above last month's measurement, 4.40 feet above last year's measurement, and 73.11 feet below the initial measurement recorded in 1947.

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



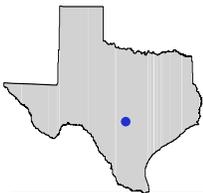
The late August water-level measurement in this Edwards (BFZ) Aquifer well, elevation 731 feet above sea level, was 81.65 feet below land surface. This was 1.17 feet below last month's measurement, 28.39 feet below last year's measurement, and 35.01 feet below the initial measurement recorded in 1962.

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



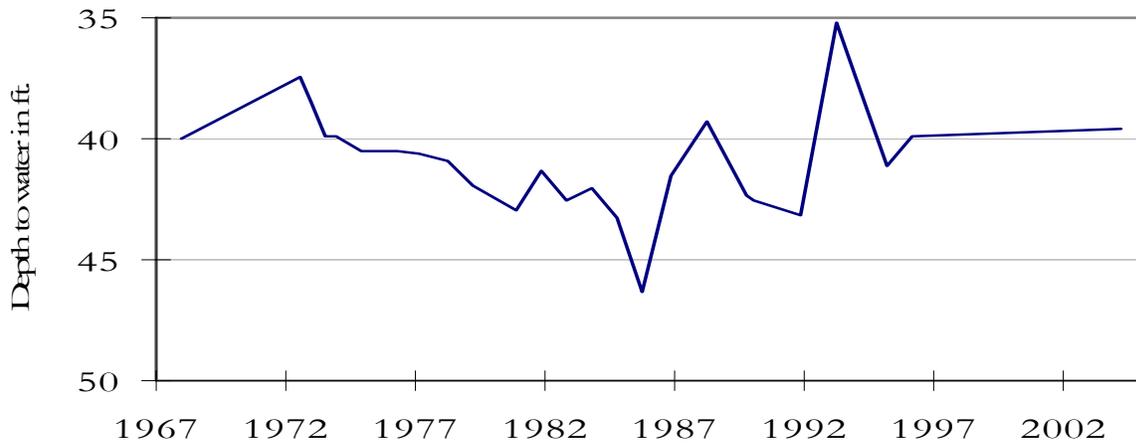
The late August water-level measurement in this Carrizo Aquifer well, elevation 446 feet above sea level, was 134.27 feet below land surface. This measurement was 6.89 feet below last month's measurement, 23.18 feet below last year's measurement, and 98.91 feet below the initial measurement recorded 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. 57-01-602  
San Saba County**



This water level observation well, located 10 miles west of Cherokee, at an elevation of 1610 feet ASL, was completed in the Hickory Aquifer. Water levels have remained stable in the aquifer due to the relatively small amount of pumpage compared to the annual effective recharge and recoverable storage.

August, 2006

Water level measurements were available for all seven key monitoring wells. Water levels declined in six of the monitoring wells since the beginning of August, ranging from 0.19 feet in the Coryell Co. Trinity well to 6.89 feet in the Atascosa Co. Carrizo well. Water levels rose 0.56 feet in the Harris Co. Evangeline well. The J-17 well recorded a water level of 81.65 ft. below land surface. This water level is 1.65 feet below the Stage 1 critical management level.