

# Texas Water Development Board



# WATER Conditions

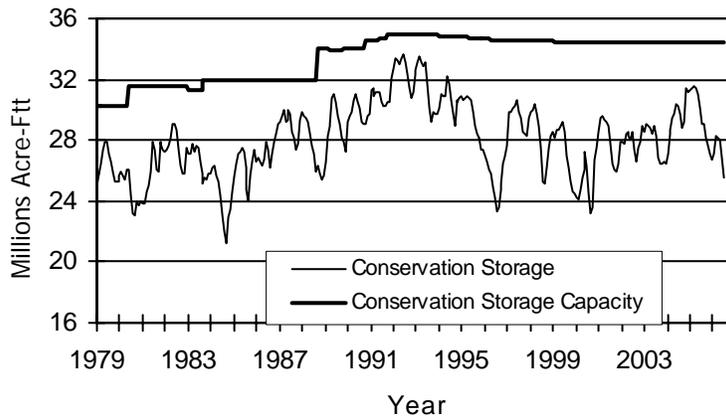
## RESERVOIR STORAGE

July 2006

Near the end of July, the 77 reservoirs monitored for this report held 25.53 million acre-feet in conservation storage, or 74 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 1.27 million acre-feet (-4% of conservation storage capacity). Compared to last year, storage decreased by 3.59 million acre-feet (-10%).

Storage was 99.5% 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 3 reservoirs. During July, storage increased in only 2 reservoirs but decreased in 70 reservoirs. Regionally, storage decreased in 8 out of 9 Regions in the range of 1% - 5%, and increased only in the Upper Coast Region by 2%. 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 (-23%).

### 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.

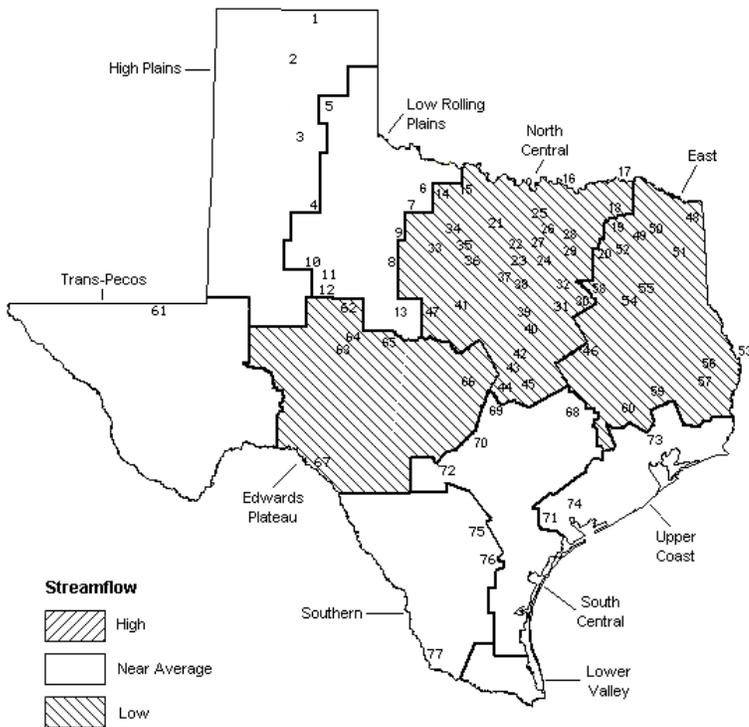
# STREAMFLOW

Of 29 reporting index stations in July, computed 30-day mean flows were high (5% - 30%) at 3 stations, low (70% - 95%) at 14 stations, very low (>95%) at 1 station, and near normal (30% - 70% exceedance) at the remaining 11 stations. Compared to June, flows have increased at 14 index stations and decreased at 15 stations.

On a regional basis, flows in July were low in the North Central, East Texas, and Edwards Plateau, but normal in all other Regions. Streamflow in the Lower Valley Region is not monitored.

## JULY STREAMFLOW CONDITIONS

Reservoirs Shown on Map



- |                                  |                             |
|----------------------------------|-----------------------------|
| 1. Palo Duro Reservoir           | 40. Waco Lake               |
| 2. Lake Meredith                 | 41. Proctor Lake            |
| 3. MacKenzie Reservoir           | 42. Belton Lake             |
| 4. White River Lake              | 43. Stillhouse Hollow Lake  |
| 5. Greenbelt Reservoir           | 44. Lake Georgetown         |
| 6. Lake Kemp                     | 45. Granger Lake            |
| 7. Miller's Creek Reservoir      | 46. Lake Limestone          |
| 8. Fort Phantom Hill Reservoir   | 47. Lake Brownwood          |
| 9. Lake Stamford                 | 48. Wright Patman Lake      |
| 10. Lake J. B. Thomas            | 49. Lake Cypress Springs    |
| 11. Lake Colorado City           | 50. Lake Bob Sandlin        |
| 12. Champion Creek Reservoir     | 51. Lake O' the Pines       |
| 13. Hords Creek Lake             | 52. Lake Fork Reservoir     |
| 14. Lake Kickapoo                | 53. Toledo Bend Reservoir   |
| 15. Lake Arrowhead               | 54. Lake Palestine          |
| 16. Lake Texoma                  | 55. Lake Tyler              |
| 17. Pat Mayse Lake               | 56. Sam Rayburn Reservoir   |
| 18. Cooper Lake                  | 57. B. A. Steinhagen Lake   |
| 19. Lake Sulphur Springs         | 58. Cedar Creek Reservoir   |
| 20. Lake Tawakoni                | 59. Lake Livingston         |
| 21. Bridgeport Reservoir         | 60. Lake Conroe             |
| 22. Eagle Mountain Reservoir     | 61. Red Bluff Reservoir     |
| 23. Benbrook Lake                | 62. E. V. Spence Reservoir  |
| 24. Joe Pool Lake                | 63. Twin Buttes Reservoir   |
| 25. Ray Roberts Lake             | 64. O. C. Fisher Lake       |
| 26. Lewisville Lake              | 65. O. H. Ivie Reservoir    |
| 27. Grapevine Lake               | 66. Lake Buchanan           |
| 28. Lavon Lake                   | 67. Intl. Amistad Reservoir |
| 29. Lake Ray Hubbard             | 68. Somerville Lake         |
| 30. Richland-Chambers Creek Lake | 69. Lake Travis             |
| 31. Navarro Mills Lake           | 70. Canyon Lake             |
| 32. Bardwell Lake                | 71. Coletto Creek Reservoir |
| 33. Hubbard Creek Reservoir      | 72. Medina Lake             |
| 34. Lake Graham                  | 73. Lake Houston            |
| 35. Possum Kingdom Lake          | 74. Lake Texana             |
| 36. Lake Palo Pinto              | 75. Choke Canyon Reservoir  |
| 37. Lake Granbury                | 76. Lake Corpus Christi     |
| 38. Lake Pat Cleburne            | 77. Intl. Falcon Reservoir  |
| 39. Whitney Lake                 |                             |

## CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	No. on Map	Conservation	Conservation	Change since		Change since		
		Storage Capacity (acre-feet)	Storage Late Jul. 2006 (acre-feet) (%)	Late June 2006 (acre-feet) (%)	Late July 2005 (acre-feet) (%)			
<b>HIGH PLAINS</b>								
Palo Duro Reservoir	1	60,900	970	2	-120	0	-2,000	-3
Lake Meredith (Texas)	2	500,000	107,840	22	-4,630	-1	-64,190	-13
Lake Meredith (Texas and Oklahoma)	(2)	779,560	107,840	14	-4,630	-1	-64,190	-8
MacKenzie Reservoir	3	46,250	8,750	19	-260	-1	-1,680	-4
White River Lake	4	31,850	3,540	11	-500	-2	-4,360	-14
<b>TOTAL</b>		<b>639,000</b>	<b>121,100</b>	<b>19</b>	<b>-5,510</b>	<b>-1</b>	<b>-72,230</b>	<b>-11</b>
<b>LOW ROLLING PLAINS</b>								
Greenbelt Reservoir	5	58,200	18,640	32	-990	-2	-6,030	-10
Lake Kemp	6	319,600	196,330	61	-27,600	-9	-11,670	-4
Miller's Creek Reservoir	7	27,890	21,540	77	-1,420	-5	1,560	6
Fort Phantom Hill Reservoir	8	70,030	47,290	68	-4,100	-6	-6,680	-10
Lake Stamford	9	52,700	40,780	77	-3,400	-6	7,520	14
Lake J. B. Thomas	10	202,300	39,190	19	-3,930	-2	-10,450	-5
Lake Colorado City	11	30,800	24,500	80	-1,190	-4	-3,250	-11
Champion Creek Reservoir	12	41,600	5,590	13	-330	-1	880	2
Hords Creek Lake	13	8,600	5,410	63	-360	-4	-2,010	-23
<b>TOTAL</b>		<b>811,720</b>	<b>399,270</b>	<b>49</b>	<b>-43,320</b>	<b>-5</b>	<b>-30,130</b>	<b>-4</b>
<b>NORTH CENTRAL</b>								
Lake Kickapoo	14	106,000	73,910	70	-5,400	-5	13,490	13
Lake Arrowhead	15	262,100	189,750	72	-12,060	-5	15,700	6
Lake Texoma	16	2,722,300	2,334,590	86	-210,430	-8	76,650	3
Pat Mayse Lake	17	124,500	86,440	69	-4,530	-4	-23,450	-19
Cooper Lake	18	273,000	127,680	47	-18,520	-7	-93,860	-34
Lake Sulphur Springs	19	17,710	15,210	86	-1,040	-6	-360	-2
Lake Tawakoni	20	936,200	606,600	65	-36,300	-4	-157,100	-17
Bridgeport Reservoir	21	374,830	219,800	59	-25,300	-7	-90,200	-24
Eagle Mountain Reservoir	22	178,380	140,200	79	-600	0	-17,700	-10
Benbrook Lake	23	88,200	61,870	70	-7,940	-9	-11,300	-13
Joe Pool Lake	24	175,800	167,500	95	-5,490	-3	-2,540	-1
Ray Roberts Lake	25	798,760	669,470	84	-26,810	-3	-95,190	-12
Lewisville Lake	26	555,000	398,910	72	-29,560	-5	-156,090	-28
Grapevine Lake	27	187,700	124,450	66	-9,370	-5	-37,240	-20
Lavon Lake	28	443,800	227,060	51	-29,370	-7	-161,080	-36
Lake Ray Hubbard	29	413,420	352,000	85	-23,100	-6	-35,900	-9
Richland-Chambers Creek Lake	30	1,103,820	845,300	77	-37,200	-3	-231,700	-21
Navarro Mills Lake	31	55,810	30,350	54	-2,940	-5	-19,490	-35
Bardwell Lake	32	53,580	40,940	76	-2,900	-5	-3,860	-7
Hubbard Creek Reservoir	33	317,800	172,810	54	-8,560	-3	-10,430	-3
Lake Graham	34	45,000	40,630	90	-2,570	-6	3,180	7
Possum Kingdom Lake	35	551,820	480,650	87	-32,410	-6	17,250	3
Lake Palo Pinto	36	27,650	17,270	62	-2,180	-8	-4,150	-15
Lake Granbury	37	135,680	127,890	94	-3,210	-2	2,490	2
Lake Pat Cleburne	38	25,300	21,970	87	-1,350	-5	-780	-3
Whitney Lake	39	622,800	510,630	82	-38,510	-6	-33,900	-5
Waco Lake	40	144,500	144,500	100	0	0	0	0
Proctor Lake	41	55,590	33,030	59	-4,920	-9	-13,660	-25
Belton Lake	42	434,500	391,420	90	-11,150	-3	-34,210	-8
Stillhouse Hollow Lake	43	226,060	222,700	99	-3,360	-1	-3,360	-1
Lake Georgetown	44	37,010	21,110	57	-1,760	-5	-11,280	-30
Granger Lake	45	54,280	50,510	93	-2,670	-5	-3,770	-7
Lake Limestone	46	215,750	198,180	92	-9,570	-4	4,230	2
Lake Brownwood	47	143,400	107,960	75	-5,940	-4	-14,830	-10
<b>TOTAL</b>		<b>11,908,050</b>	<b>9,253,290</b>	<b>78</b>	<b>-617,020</b>	<b>-5</b>	<b>-1,134,440</b>	<b>-10</b>

## CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

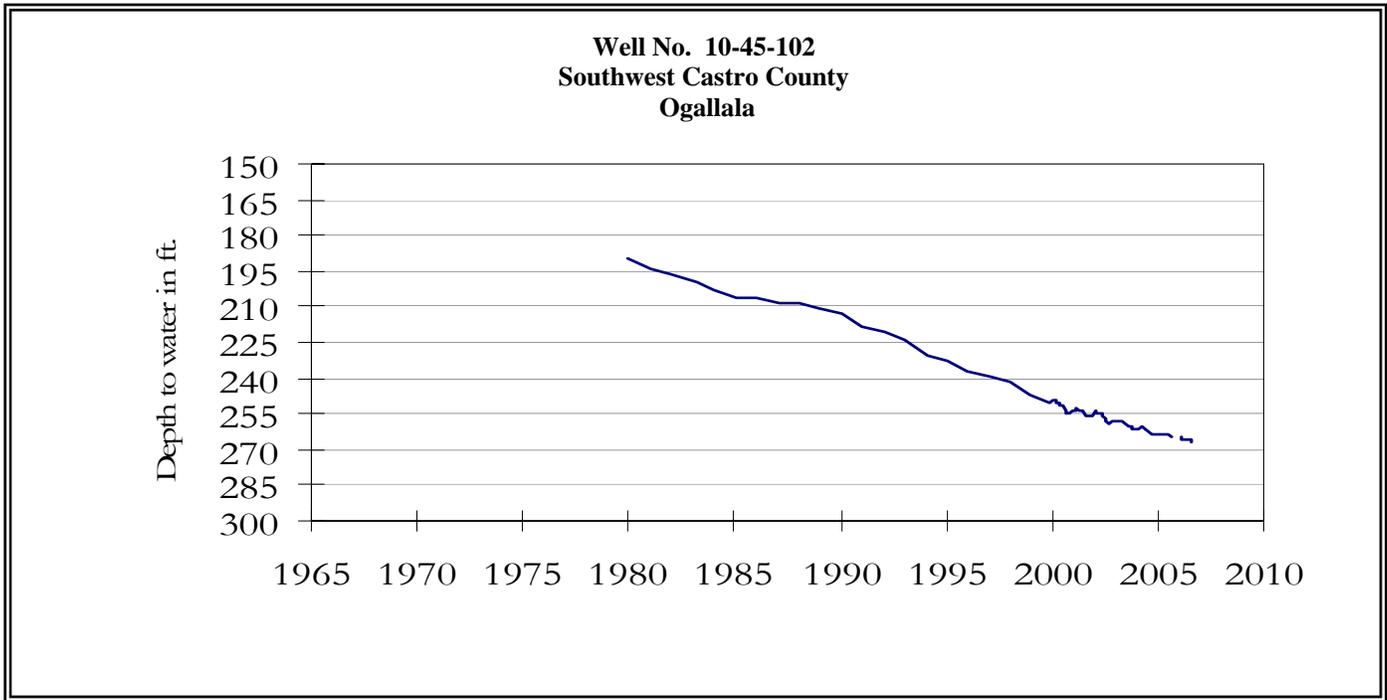
Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage Late Jul. 2006 (acre-feet) (%)	Change since Late June 2006 (acre-feet) (%)	Change since Late July 2005 (acre-feet) (%)
<b>EAST</b>					
Wright Patman Lake	48	142,700	142,700 100	0 0	0 0
Lake Cypress Springs	49	66,800	56,670 85	-1,890 -3	-6,830 -10
Lake Bob Sandlin	50	202,300	141,400 70	-9,700 -5	-40,200 -20
Lake O' the Pines	51	252,000	190,100 75	-6,230 -2	-21,270 -8
Lake Fork Reservoir	52	635,200	579,500 91	-15,300 -2	-51,800 -8
Toledo Bend Reservoir	53	4,472,900	3,327,000 74	-203,000 -5	-251,000 -6
Lake Palestine	54	411,300	337,500 82	-17,250 -4	-53,220 -13
Lake Tyler	55	73,700	54,020 73	-3,300 -4	-16,640 -23
Sam Rayburn Reservoir	56	2,876,300	2,635,570 92	-42,630 -1	-22,960 -1
B. A. Steinhagen Lake	57	94,200	18,750 20	-11,160 -12	-50,820 -54
Cedar Creek Reservoir	58	637,050	517,400 81	-26,200 -4	-81,200 -13
Lake Livingston	59	1,750,000	1,520,000 87	-6,000 0	-197,000 -11
Lake Conroe	60	429,900	348,900 81	1,600 0	-45,400 -11
<b>TOTAL</b>		<b>12,044,350</b>	<b>9,869,510 82</b>	<b>-341,060 -3</b>	<b>-838,340 -7</b>
<b>TRANS-PECOS</b>					
Red Bluff Reservoir	61	307,000	86,470 28	-8,320 -3	-9,240 -3
<b>TOTAL</b>		<b>307,000</b>	<b>86,470 28</b>	<b>-8,320 -3</b>	<b>-9,240 -3</b>
<b>EDWARDS PLATEAU</b>					
E. V. Spence Reservoir	62	488,760	75,240 15	-5,180 -1	8,650 2
Twin Buttes Reservoir	63	177,800	36,910 21	-7,070 -4	-2,810 -2
O.C. Fisher Lake	64	119,200	9,940 8	-860 -1	4,170 3
O. H. Ivie Reservoir	65	554,340	247,600 45	-13,700 -2	-54,100 -10
Lake Buchanan	66	896,980	627,460 70	-44,880 -5	-201,780 -22
Amistad Reservoir (Texas)	67	1,771,030	1,874,000 106	-56,000 -3	-480,000 -27
Amistad Reservoir (Texas and Mexico)	(67)	3,151,300	2,373,000 75	-57,000 -2	-382,000 -12
<b>TOTAL</b>		<b>4,008,110</b>	<b>2,871,150 72</b>	<b>-127,690 -3</b>	<b>-725,870 -18</b>
<b>SOUTH CENTRAL</b>					
Somerville Lake	68	155,060	130,980 84	100 0	-14,640 -9
Lake Travis	69	1,144,100	738,900 65	-56,600 -5	-274,500 -24
Canyon Lake	70	385,600	339,730 88	-4,620 -1	-39,860 -10
Coletto Creek Reservoir	71	35,060	26,740 76	1,430 4	-4,200 -12
Medina Lake	72	254,000	125,600 49	-13,300 -5	-113,500 -45
<b>TOTAL</b>		<b>1,973,820</b>	<b>1,361,950 69</b>	<b>-72,990 -4</b>	<b>-446,700 -23</b>
<b>UPPER COAST</b>					
Lake Houston	73	128,860	128,860 100	0 0	0 0
Lake Texana	74	157,900	156,970 99	6,330 4	2,440 2
<b>TOTAL</b>		<b>286,760</b>	<b>285,830 100</b>	<b>6,330 2</b>	<b>2,440 1</b>
<b>SOUTHERN</b>					
Choke Canyon Reservoir	75	695,260	553,000 80	-10,000 -1	-120,000 -17
Lake Corpus Christi	76	241,240	77,110 32	-2,780 -1	-125,590 -52
Falcon Reservoir (Texas)	77	1,555,120	651,000 42	-48,000 -3	-88,000 -6
Falcon Reservoir (Texas and Mexico)	(77)	2,653,290	974,000 37	-47,000 -2	-212,000 -8
<b>TOTAL</b>		<b>2,491,620</b>	<b>1,281,110 51</b>	<b>-60,780 -2</b>	<b>-333,590 -13</b>
<b>STATE TOTAL</b>		<b>34,470,430</b>	<b>25,529,680 74</b>	<b>-1,270,360 -4</b>	<b>-3,588,100 -10</b>

Note:

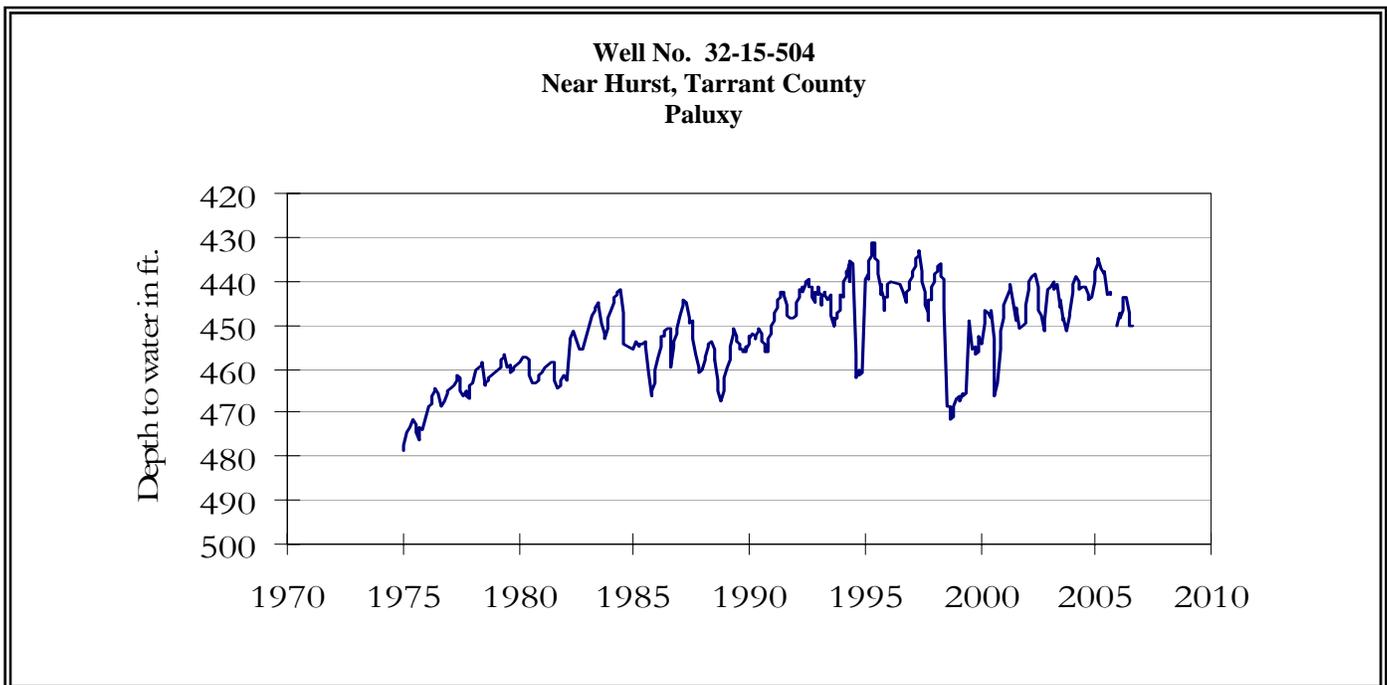
Conservation storage capacity is the space available to store water above the level of invert of lowest outlet works and below the level of top of conservation pool or normal maximum operating level. Conservation storage refers to the volume of water held within the conservation storage space. Not included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

## JULY GROUND WATER LEVELS IN OBSERVATION WELLS

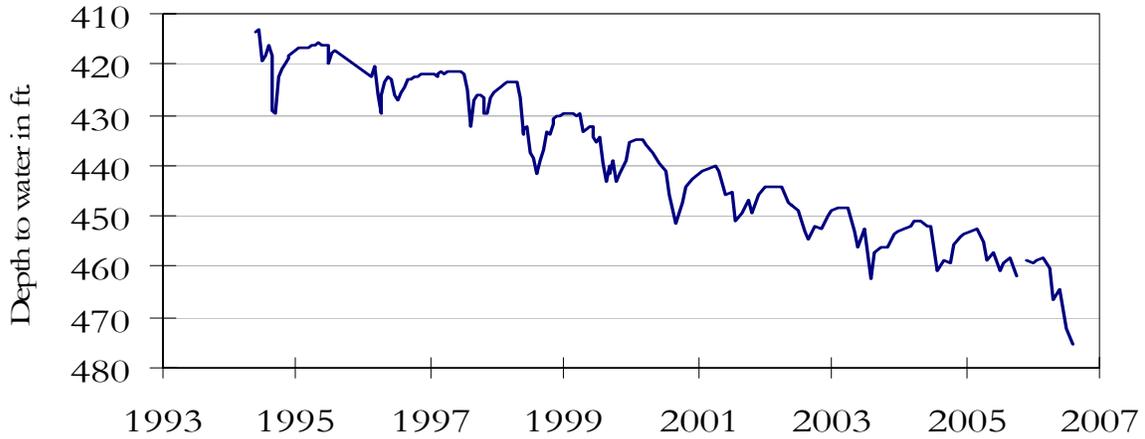


The late July water-level measurement in this Ogallala aquifer well, elevation 3,816 feet above sea level, was 266.52 feet below land surface. This measurement was 0.36 feet below last month's measurement, 2.12 feet below last year's measurement, and 110.52 feet below the initial measurement recorded in 1968. No water level measurements were recorded for September through December 2005.



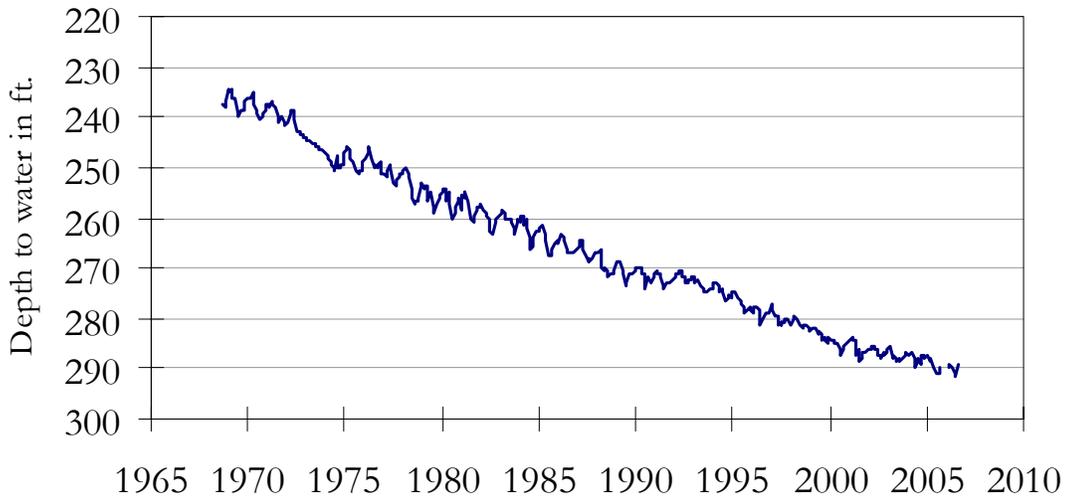
The late July water-level measurement in this Paluxy Formation Trinity aquifer well, elevation 535 feet above sea level, was 450.45 feet below land surface. This measurement was 0.28 feet below last month's measurement, 8.00 feet below last year's measurement, and 72.45 feet below the initial measurement recorded in 1953. No water level measurements were recorded for September or October 2005.

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



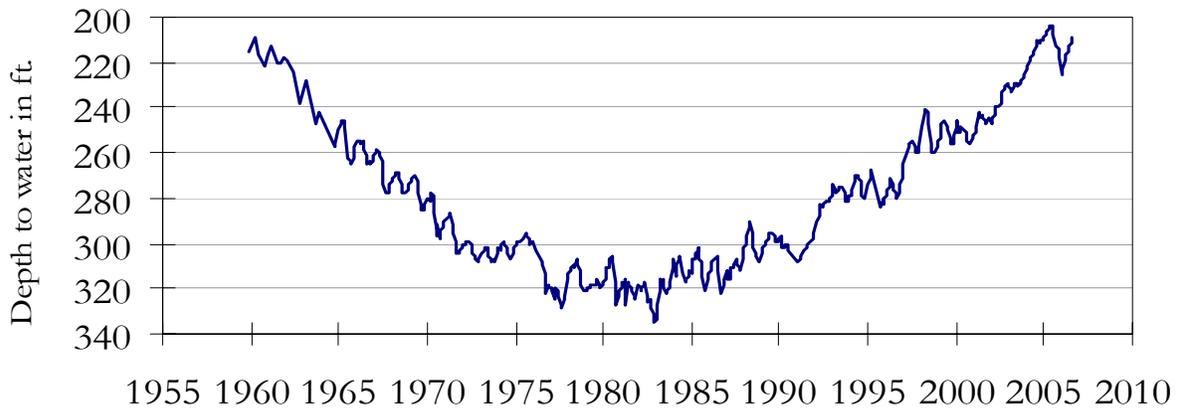
The late July water-level measurement in this Hosston Formation Trinity aquifer well, elevation 823 feet above sea level, was 475.56 feet below land surface. This water level was 3.16 feet below last month's measurement, 16.29 feet below last year's measurement, and 183.56 feet below the initial measurement recorded in 1955. No water level measurement was recorded for October 2005.

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



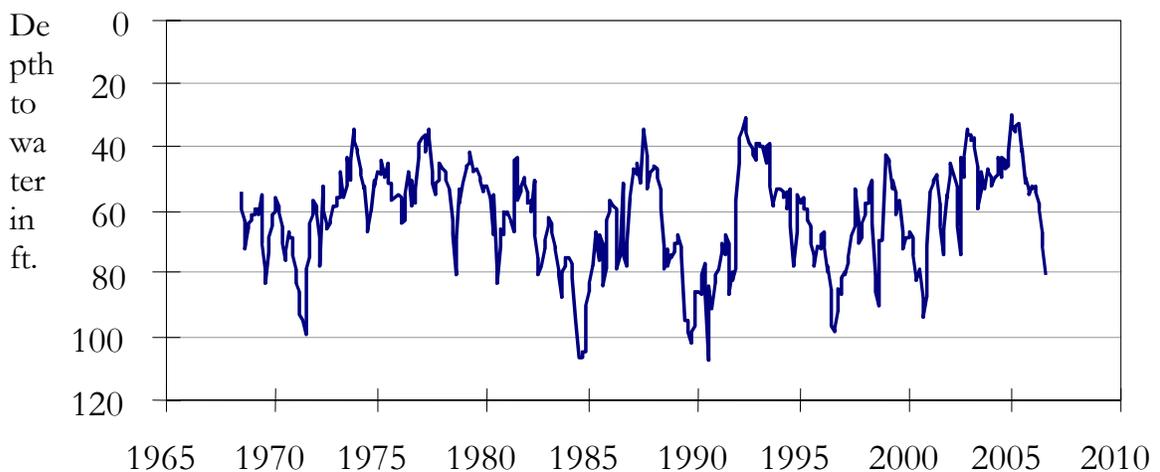
The late July water-level measurement in this Hueco Bolson aquifer well, elevation 3,882 feet above sea level, was 289.40 feet below land surface. This was 2.00 feet above last month's measurement, 1.44 feet above last year's measurement, and 57.50 feet below the initial measurement in 1964. No water level measurements were recorded for October or December 2005.

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



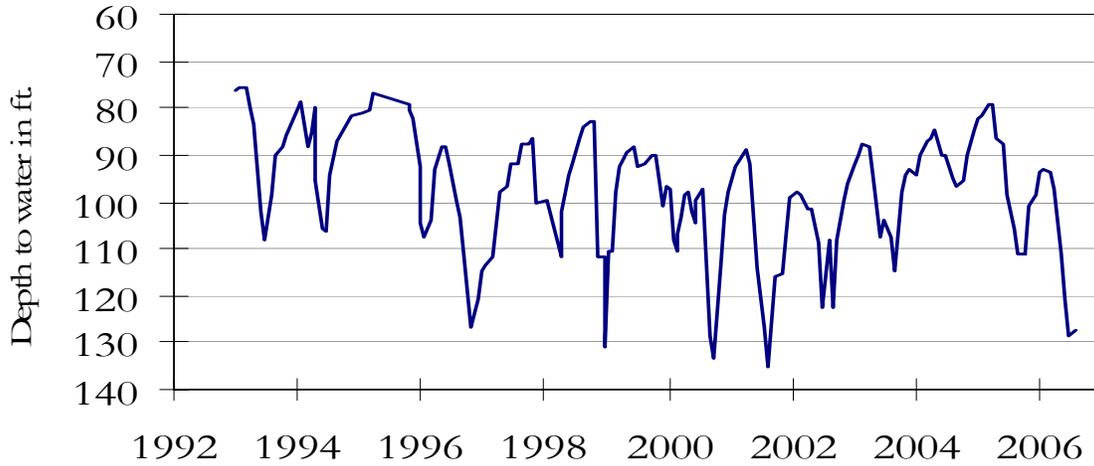
The late July water-level measurement in this Evangeline Formation Gulf Coast aquifer well, elevation 66 feet above sea level, was 209.17 feet below land surface. This was 2.82 feet above last month's measurement, 3.68 feet above last year's measurement, and 73.67 feet below the initial measurement recorded in 1947.

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



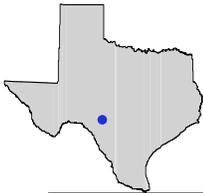
The late July water-level measurement in this Edwards (BFZ) aquifer well, elevation 731 feet above sea level, was 80.48 feet below land surface. This was 0.63 feet above last month's measurement, 31.10 feet below last year's measurement, and 33.84 feet below the initial measurement recorded in 1962.

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



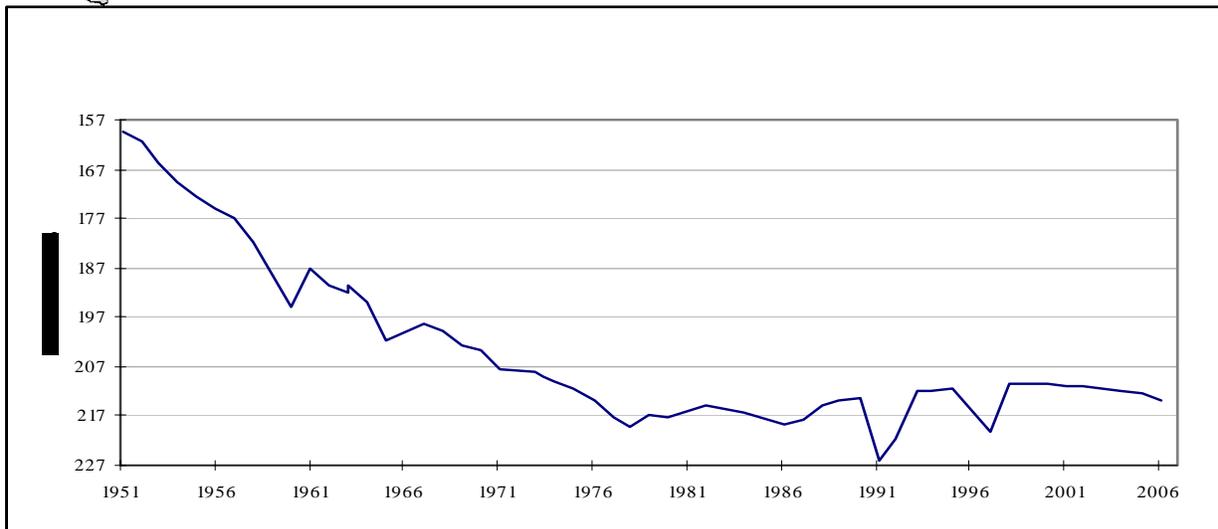
The late July water-level measurement in this Carrizo aquifer well, elevation 446 feet above sea level, was 127.38 feet below land surface. This measurement was 0.90 feet above last month's measurement, 21.92 feet below last year's measurement, and 92.02 feet below the initial measurement recorded in 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. 51-19-203  
Jeff Davis County**



This water level observation well, located 30 miles west of Fort Davis, at an elevation of 4102 feet ASL, was completed in the West Texas Bolson aquifer. Recharge is minimal in this region due to low annual rainfall and high evaporation rate.

July, 2006

Water level measurements were available for all seven key monitoring wells. Water levels rose in four of the monitoring wells since the beginning of July, ranging from 0.63 feet in the Bexar Co. J-17 well to 2.82 feet in the Harris Co. Evangeline well. Water levels declined in the remaining three monitoring wells, ranging from 0.28 feet in the Tarrant Co. Paluxy well to 3.16 feet in the Coryell Co. Hosston/Trinity well. The J-17 well recorded a water level of 80.48 ft. below land surface. This water level is 0.48 feet below the Stage 1 critical management level.

*TEXAS WATER DEVELOPMENT BOARD*

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