

# Texas Water Development Board



# Water Conditions

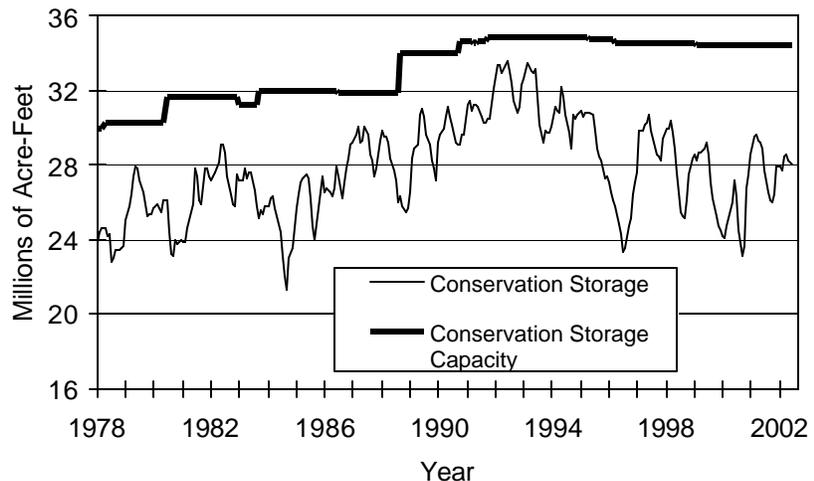
## RESERVOIR STORAGE

June 2002

Near the end of June, the 77 reservoirs monitored for this report held 27.98 million acre-feet in conservation storage, or 81.2 percent of the conservation storage capacity of the State's major reservoirs. Statewide total storage is below normal for this time of year. Storage dropped slightly for the month. Compared to last year at this time, storage is down 0.92 million acre-feet (-2.7%).

Storage in the East (97%) and North Central (95%) remained near capacity, while the High Plains (37%) Low Rolling Plains (40%), Trans-Pecos (13%), Southern (25%) and Edwards Plateau (42%) Regions remained low. Storage is at 100% in 24 reservoirs, four fewer than last month. Compared to this time last year, storage decreased significantly in the High Plains (-19%), South Central (-7%) and Edwards Plateau (-11%) Regions and remained similar everywhere else.

### 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.

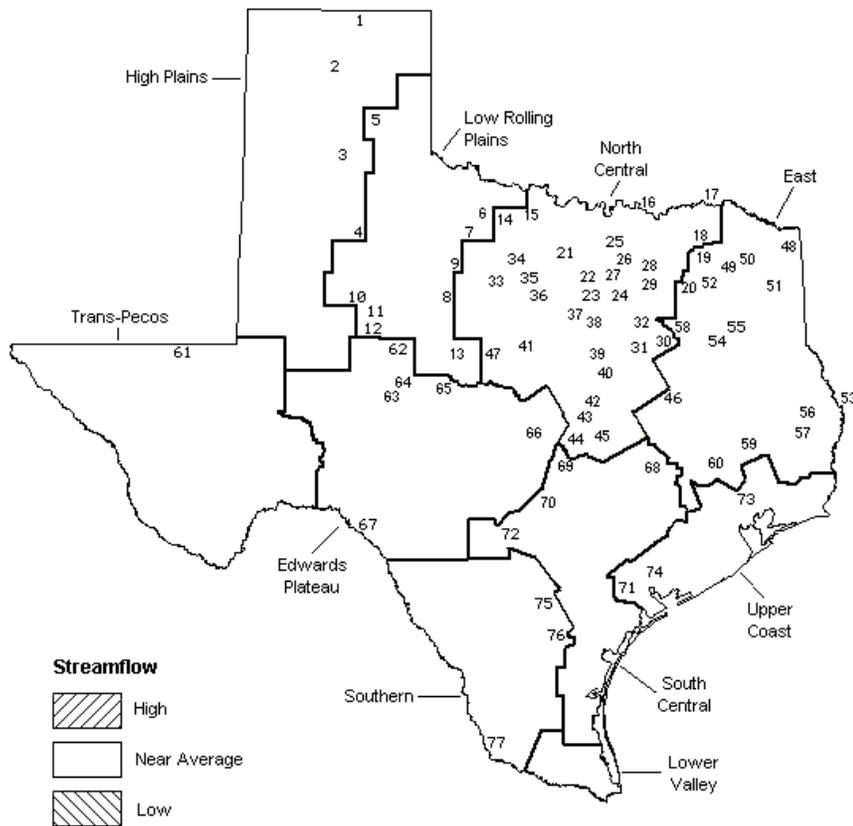
# STREAMFLOW

Of 29 reporting index stations in June, computed 30-day mean flows were high (5% - 30% exceedance) at 6 stations, near normal (30% - 70% exceedance) at 14 stations, and low (70% - 95% exceedance) at 9 stations. In comparison to May, flows increased at 17 index stations and decreased at 12.

On a regional basis, flows in June were near normal everywhere.

## JUNE 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<br>or Reservoir          | No.<br>on<br>Map | Conservation<br>Storage<br>Capacity<br>(acre-feet) | Conservation<br>Storage<br>Late June 2002<br>(acre-feet) (%) | Change since<br>Late May<br>2002<br>(acre-feet) (%) | Change since<br>Late June<br>2001<br>(acre-feet) (%) |
|---------------------------------------|------------------|--|--|---|--|
| <b>HIGH PLAINS</b>                    |                  |  |  |   |  |
| Palo Duro Reservoir                   | 1                | 60,900   | 5,070 8  | 340 1   | -3,790 -6  |
| Lake Meredith (Texas)                 | 2                | 500,000  | 218,600 44   | -8,400 -2   | -110,200 -22   |
| Lake Meredith<br>(Texas and Oklahoma) | (2)              | 779,560  | 218,600 28   | -8,400 -1   | -110,200 -14   |
| MacKenzie Reservoir                   | 3                | 46,250   | 7,490 16   | -210 0  | -2,100 -5  |
| White River Lake                      | 4                | 31,850   | 6,730 21   | -40 0   | -3,310 -10   |
| <b>TOTAL</b>                          |                  | <b>639,000</b>                                     | <b>237,890 37</b>  | <b>-8,310 -1</b>                                    | <b>-119,400 -19</b>                                  |
| <b>LOW ROLLING PLAINS</b>             |                  |  |  |   |  |
| Greenbelt Reservoir                   | 5                | 58,200   | 23,400 40  | -440 -1   | -2,360 -4  |
| Lake Kemp                             | 6                | 319,600  | 176,000 55   | 6,000 2   | -5,200 -2  |
| Miller's Creek Reservoir              | 7                | 27,890   | 17,970 64  | 2,520 9   | 2,100 8  |
| Fort Phantom Hill Reservoir           | 8                | 70,030   | 28,240 40  | -1,900 -3   | -9,070 -13   |
| Lake Stamford                         | 9                | 52,700   | 36,040 68  | -1,160 -2   | 20,070 38  |
| Lake J. B. Thomas                     | 10               | 202,300  | 19,400 10  | -890 0  | 190 0  |
| Lake Colorado City                    | 11               | 30,800   | 17,920 58  | 50 0  | -820 -3  |
| Champion Creek Reservoir              | 12               | 41,600   | 2,890 7  | -10 0   | 320 1  |
| Hords Creek Lake                      | 13               | 8,600  | 2,590 30   | -110 -1   | -1,480 -17   |
| <b>TOTAL</b>                          |                  | <b>811,720</b>                                     | <b>324,450 40</b>  | <b>4,060 1</b>                                      | <b>3,750 0</b>                                       |
| <b>NORTH CENTRAL</b>                  |                  |  |  |   |  |
| Lake Kickapoo                         | 14               | 106,000  | 92,750 88  | 2,790 3   | -2,160 -2  |
| Lake Arrowhead                        | 15               | 262,100  | 166,900 64   | 2,200 1   | -23,600 -9   |
| Lake Texoma                           | 16               | 2,722,300  | 2,722,300 100  | 54,300 2  | 23,300 1   |
| Pat Mayse Lake                        | 17               | 124,500  | 118,300 95   | -4,300 -3   | -3,900 -3  |
| Cooper Lake                           | 18               | 273,000  | 273,000 100  | 0 0   | 0 0  |
| Lake Sulphur Springs                  | 19               | 17,710   | 17,710 100   | 0 0   | 5,680 32   |
| Lake Tawakoni                         | 20               | 936,200  | 880,200 94   | -15,000 -2  | 26,000 3   |
| Bridgeport Reservoir                  | 21               | 374,830  | 310,500 83   | -1,000 0  | -56,600 -15  |
| Eagle Mountain Reservoir              | 22               | 178,380  | 175,600 98   | -2,500 -1   | 7,400 4  |
| Benbrook Lake                         | 23               | 88,200   | 81,820 93  | -3,760 -4   | 740 1  |
| Joe Pool Lake                         | 24               | 175,800  | 175,800 100  | 0 0   | 0 0  |
| Ray Roberts Lake                      | 25               | 798,760  | 798,760 100  | 0 0   | 0 0  |
| Lewisville Lake                       | 26               | 555,000  | 555,000 100  | 0 0   | 0 0  |
| Grapevine Lake                        | 27               | 187,700  | 183,700 98   | -4,000 -2   | 7,100 4  |
| Lavon Lake                            | 28               | 443,800  | 443,800 100  | 0 0   | 22,100 5   |
| Lake Ray Hubbard                      | 29               | 413,420  | 395,200 96   | -16,800 -4  | -7,100 -2  |
| Richland-Chambers Creek Lake          | 30               | 1,103,820  | 1,103,820 100  | 0 0   | 0 0  |
| Navarro Mills Lake                    | 31               | 55,810   | 55,810 100   | 0 0   | 190 0  |
| Bardwell Lake                         | 32               | 53,580   | 47,420 89  | -470 -1   | 980 2  |
| Hubbard Creek Reservoir               | 33               | 317,800  | 124,400 39   | -4,400 -1   | -21,800 -7   |
| Lake Graham                           | 34               | 45,000   | 34,710 77  | -320 -1   | -6,850 -15   |
| Possum Kingdom Lake                   | 35               | 551,820  | 519,500 94   | 14,200 3  | -1,200 0   |
| Lake Palo Pinto                       | 36               | 27,650   | 22,480 81  | -1,560 -6   | -620 -2  |
| Lake Granbury                         | 37               | 135,680  | 130,900 96   | -2,400 -2   | 5,000 4  |
| Lake Pat Cleburne                     | 38               | 25,300   | 25,300 100   | 0 0   | 1,210 5  |
| Whitney Lake                          | 39               | 622,800  | 622,800 100  | 0 0   | 11,300 2   |
| Waco Lake                             | 40               | 144,500  | 141,000 98   | -3,500 -2   | -3,500 -2  |
| Proctor Lake                          | 41               | 55,590   | 47,280 85  | -1,910 -3   | -5,330 -10   |
| Belton Lake                           | 42               | 434,500  | 433,500 100  | 2,000 0   | -1,000 0   |
| Stillhouse Hollow Lake                | 43               | 226,060  | 226,060 100  | 0 0   | 0 0  |
| Lake Georgetown                       | 44               | 37,010   | 36,380 98  | 3,300 9   | -630 -2  |
| Granger Lake                          | 45               | 54,280   | 54,280 100   | 0 0   | 0 0  |
| Lake Limestone                        | 46               | 215,750  | 215,750 100  | 0 0   | 0 0  |
| Lake Brownwood                        | 47               | 143,400  | 109,600 76   | -3,400 -2   | -13,300 -9   |
| <b>TOTAL</b>                          |                  | <b>11,908,050</b>                                  | <b>11,342,330 95</b>   | <b>13,470 0</b>                                     | <b>-36,590 0</b>                                     |

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

| Name of Lake<br>or Reservoir            | No.<br>on<br>Map | Conservation<br>Storage<br>Capacity<br>(acre-feet) | Conservation<br>Storage<br>Late June 2002<br>(acre-feet) (%) | Change since<br>Late May<br>2002<br>(acre-feet) (%) | Change since<br>Late June<br>2001<br>(acre-feet) (%) |
|---|------------------|--|--|---|--|
| <b>EAST</b>                             |                  |  |  |   |  |
| Wright Patman Lake                      | 48               | 142,700  | 142,700 100  | 0 0   | 0 0  |
| Lake Cypress Springs                    | 49               | 66,800   | 66,800 100   | 0 0   | 0 0  |
| Lake Bob Sandlin                        | 50               | 202,300  | 202,300 100  | 0 0   | 0 0  |
| Lake O' the Pines                       | 51               | 252,000  | 252,000 100  | 0 0   | 0 0  |
| Lake Fork Reservoir                     | 52               | 635,200  | 635,200 100  | 0 0   | 0 0  |
| Toledo Bend Reservoir                   | 53               | 4,472,900  | 4,356,000 97   | -116,900 -3   | -32,000 -1   |
| Lake Palestine                          | 54               | 411,300  | 405,500 99   | -5,000 -1   | -5,800 -1  |
| Lake Tyler                              | 55               | 73,700   | 73,700 100   | 0 0   | 0 0  |
| Sam Rayburn Reservoir                   | 56               | 2,876,300  | 2,690,000 94   | -121,000 -4   | -186,300 -6  |
| B. A. Steinhagen Lake                   | 57               | 94,200   | 64,190 68  | 1,760 2   | -20,850 -22  |
| Cedar Creek Reservoir                   | 58               | 637,050  | 626,000 98   | -10,600 -2  | -2,500 0   |
| Lake Livingston                         | 59               | 1,750,000  | 1,750,000 100  | 0 0   | 20,000 1   |
| Lake Conroe                             | 60               | 429,900  | 402,600 94   | -400 0  | -15,200 -4   |
| TOTAL                                   |                  | 12,044,350   | 11,666,990 97  | -252,140 -2   | -242,650 -2  |
| <b>TRANS-PECOS</b>                      |                  |  |  |   |  |
| Red Bluff Reservoir                     | 61               | 307,000  | 40,280 13  | 70 0  | -2,790 -1  |
| TOTAL                                   |                  | 307,000  | 40,280 13  | 70 0  | -2,790 -1  |
| <b>EDWARDS PLATEAU</b>                  |                  |  |  |   |  |
| E. V. Spence Reservoir                  | 62               | 488,760  | 54,320 11  | -1,310 0  | -17,470 -4   |
| Twin Buttes Reservoir                   | 63               | 177,800  | 6,210 3  | -390 0  | -470 0   |
| O.C. Fisher Lake                        | 64               | 119,200  | 2,980 3  | -260 0  | -3,160 -3  |
| O. H. Ivie Reservoir                    | 65               | 554,340  | 226,100 41   | -8,600 -2   | -68,900 -12  |
| Lake Buchanan                           | 66               | 896,980  | 779,000 87   | -19,500 -2  | -53,200 -6   |
| Amistad Reservoir (Texas)               | 67               | 1,771,030  | 626,000 35   | -27,000 -2  | -308,000 -17   |
| Amistad Reservoir<br>(Texas and Mexico) | (67)             | 3,151,300  | 812,000 26   | -12,000 0   | -317,000 -10   |
| TOTAL                                   |                  | 4,008,110  | 1,694,610 42   | -57,060 -1  | -451,200 -11   |
| <b>SOUTH CENTRAL</b>                    |                  |  |  |   |  |
| Somerville Lake                         | 68               | 155,060  | 152,700 98   | 1,000 1   | -2,360 -2  |
| Lake Travis                             | 69               | 1,144,100  | 965,300 84   | 3,200 0   | -124,700 -11   |
| Canyon Lake                             | 70               | 385,600  | 385,600 100  | 7,200 2   | 0 0  |
| Coletto Creek Reservoir                 | 71               | 35,060   | 28,720 82  | 590 2   | 100 0  |
| Medina Lake                             | 72               | 254,000  | 237,500 94   | 9,200 4   | -8,300 -3  |
| TOTAL                                   |                  | 1,973,820  | 1,769,820 90   | 21,190 1  | -135,260 -7  |
| <b>UPPER COAST</b>                      |                  |  |  |   |  |
| Lake Houston                            | 73               | 128,860  | 128,860 100  | 0 0   | 0 0  |
| Lake Texana                             | 74               | 157,900  | 138,800 88   | -2,200 -1   | -5,600 -4  |
| TOTAL                                   |                  | 286,760  | 267,660 93   | -2,200 -1   | -5,600 -2  |

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

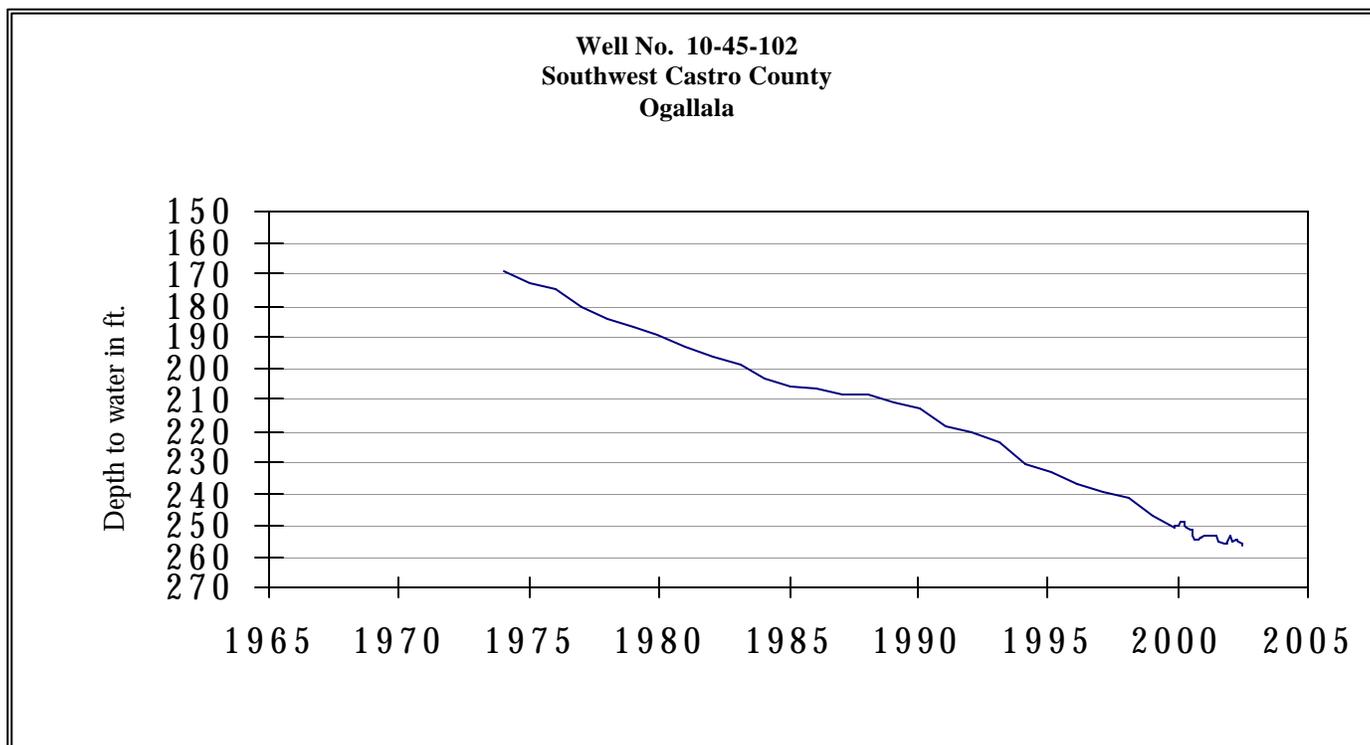
| Name of Lake<br>or Reservoir           | No.<br>on<br>Map | Conservation<br>Storage | Conservation<br>Storage           | Change since<br>Late May | Change since<br>Late June |
|--|------------------|-------------------------|-----------------------------------|--------------------------|---------------------------|
|  |                  | Capacity<br>(acre-feet) | Late June 2002<br>(acre-feet) (%) | 2002<br>(acre-feet) (%)  | 2001<br>(acre-feet) (%)   |
| <b>SOUTHERN</b>                        |                  |                         |                                   |                          |                           |
| Choke Canyon Reservoir                 | 75               | 695,260                 | 271,000 39                        | 20,000 3                 | 23,000 3                  |
| Lake Corpus Christi                    | 76               | 241,240                 | 208,500 86                        | 11,300 5                 | 133,370 55                |
| Falcon Reservoir (Texas)               | 77               | 1,555,120               | 155,000 10                        | -27,000 -2               | -84,000 -5                |
| Falcon Reservoir<br>(Texas and Mexico) | (77)             | 2,653,290               | 226,000 9                         | -37,000 -1               | -54,000 -2                |
| <b>TOTAL</b>                           |                  | <b>2,491,620</b>        | <b>634,500 25</b>                 | <b>4,300 0</b>           | <b>72,370 3</b>           |
| <b>STATE TOTAL</b>                     |                  | <b>34,470,430</b>       | <b>27,978,530 81</b>              | <b>-276,620 -1</b>       | <b>-917,370 -3</b>        |

**Note:**

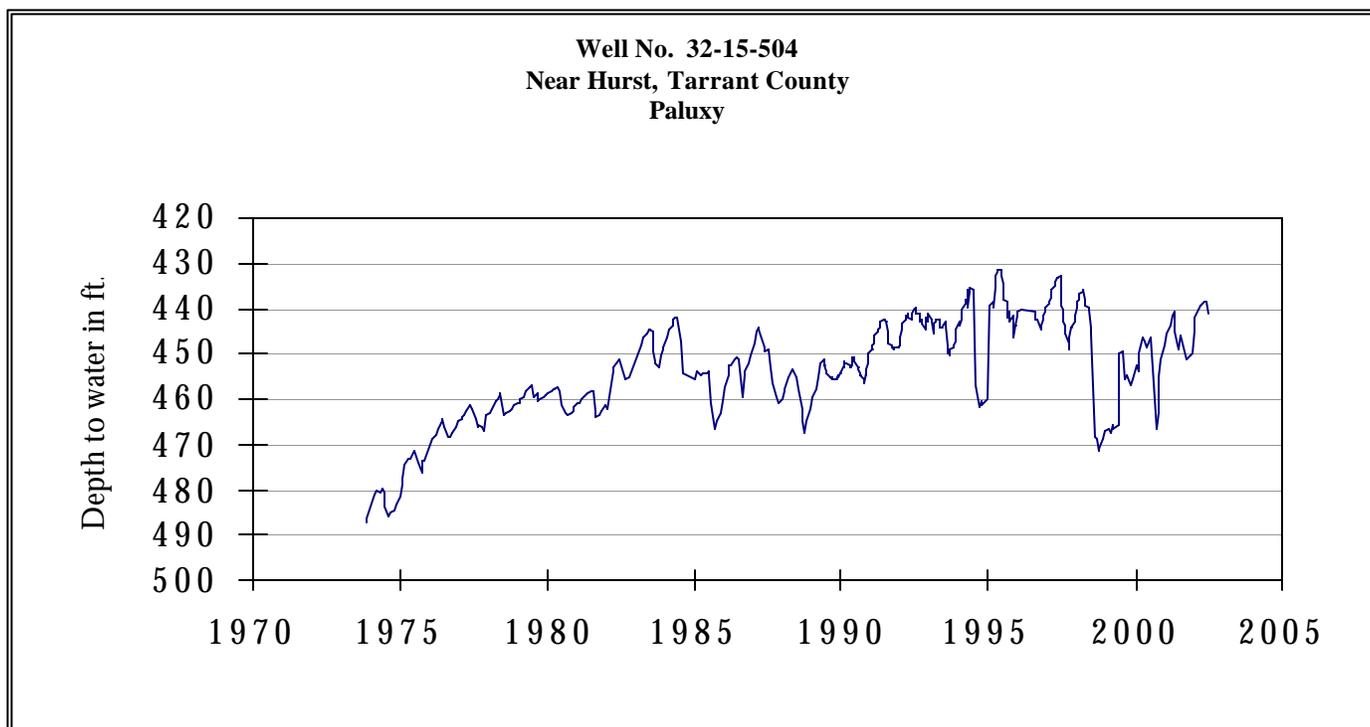
Conservation storage capacity is the space available to store water above the level of invert of lowest outlet works and below the level of top of conservation pool or normal maximum operating level. Conservation storage refers to the volume of water held within the conservation storage space. Not included 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 % Change = 100 \* (current conservation storage - past conservation storage)/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). Figures in parentheses 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.

## JUNE GROUND WATER LEVELS IN OBSERVATION WELLS

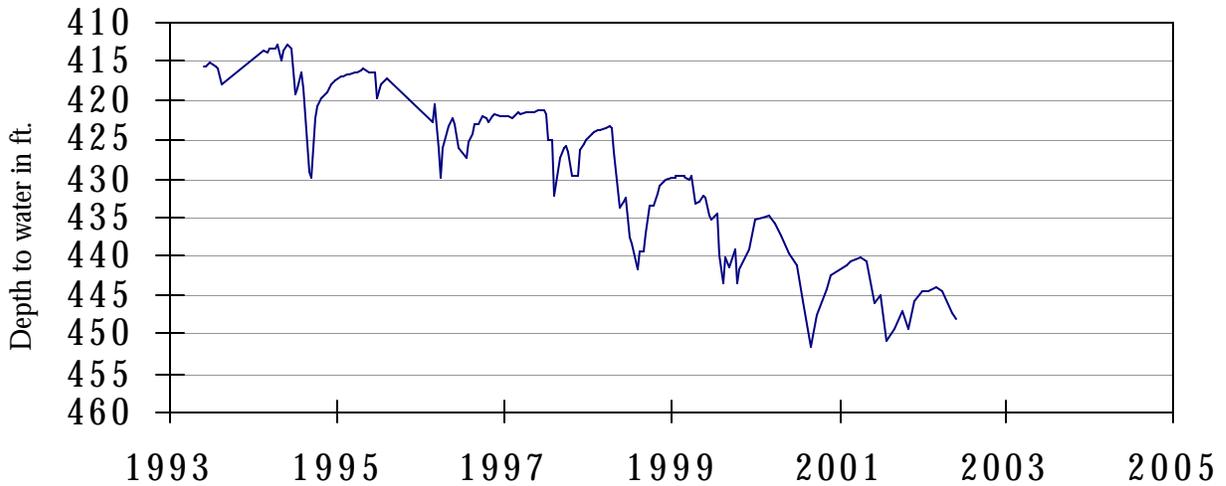


The late June water-level measurement in this Ogallala aquifer well, elevation 3,816 feet above sea level, was 256.98 feet below land surface. This measurement was 1.11 feet below last month's measurement, 2.33 feet below last year's measurement, and 100.98 feet below the initial measurement recorded in 1968.



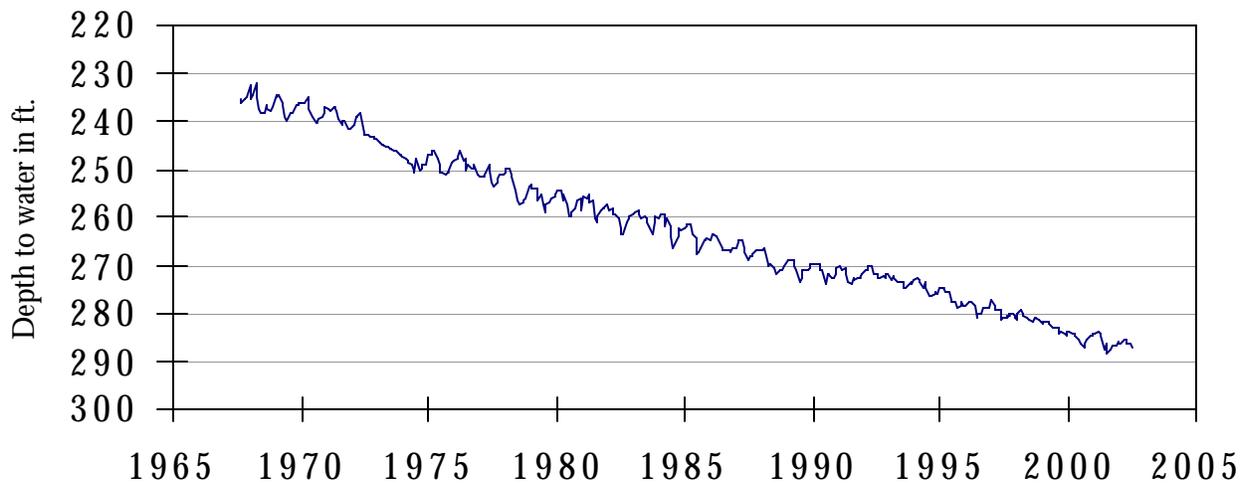
The late June water-level measurement in this Paluxy Formation Trinity aquifer well, elevation 535 feet above sea level, was 441.33 feet below land surface. This measurement was 3.15 feet below last month's measurement, 7.42 feet above last year's measurement, and 47.94 feet below the initial measurement recorded in 1953.

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



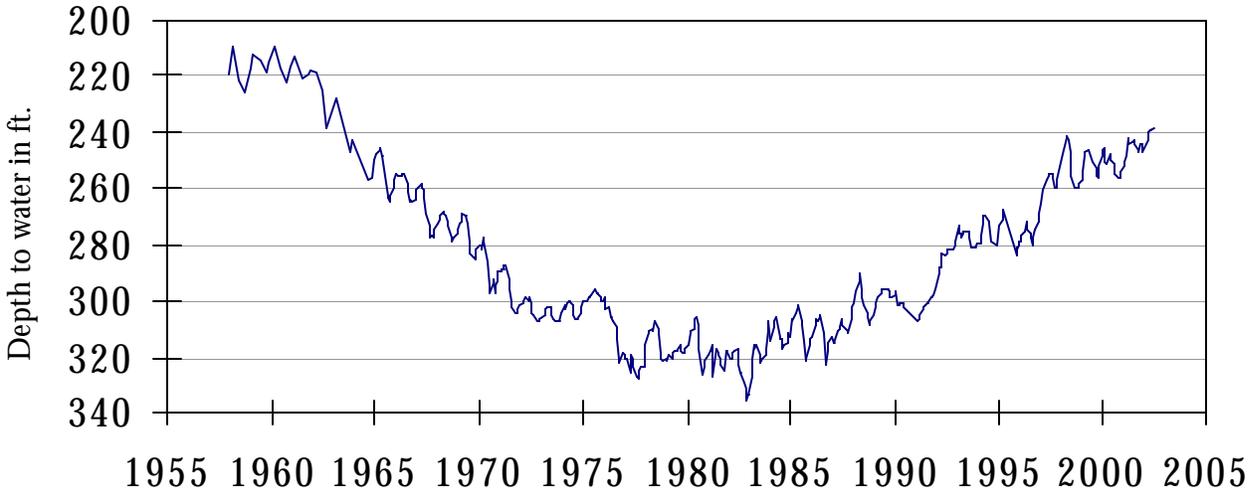
The late June water-level measurement in this Hosston Formation Trinity aquifer well, elevation 823 feet above sea level, was 449.09 feet below land surface. This measurement was 1.30 feet below last month's measurement, 4.04 feet below last year's measurement, and 155.79 feet below the initial measurement recorded in 1955.

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



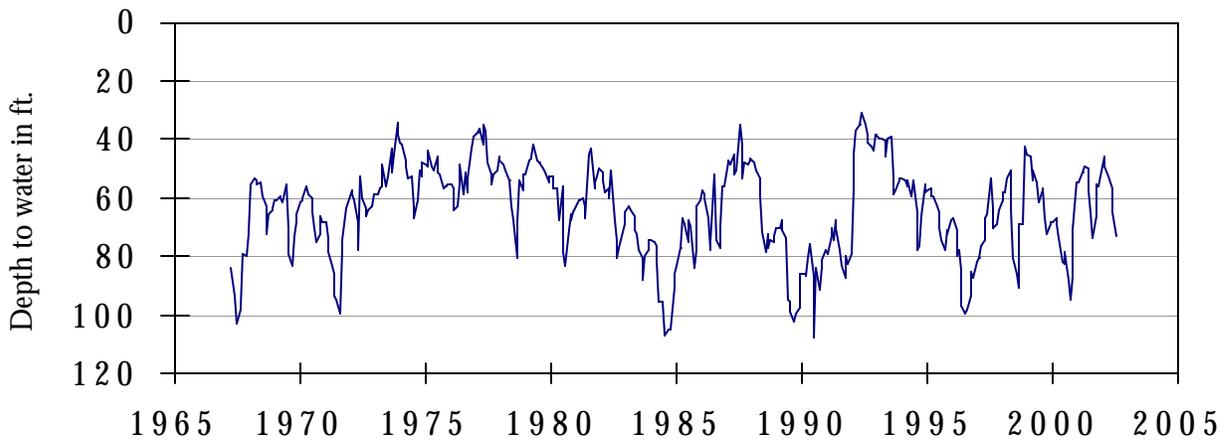
The late June water-level measurement in this Hueco Bolson aquifer well, elevation 3,882 feet above sea level, was 287.29 feet below land surface. This was 1.13 feet below last month's measurement, 0.95 feet below last year's measurement, and 55.39 feet below the initial measurement recorded in 1964.

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



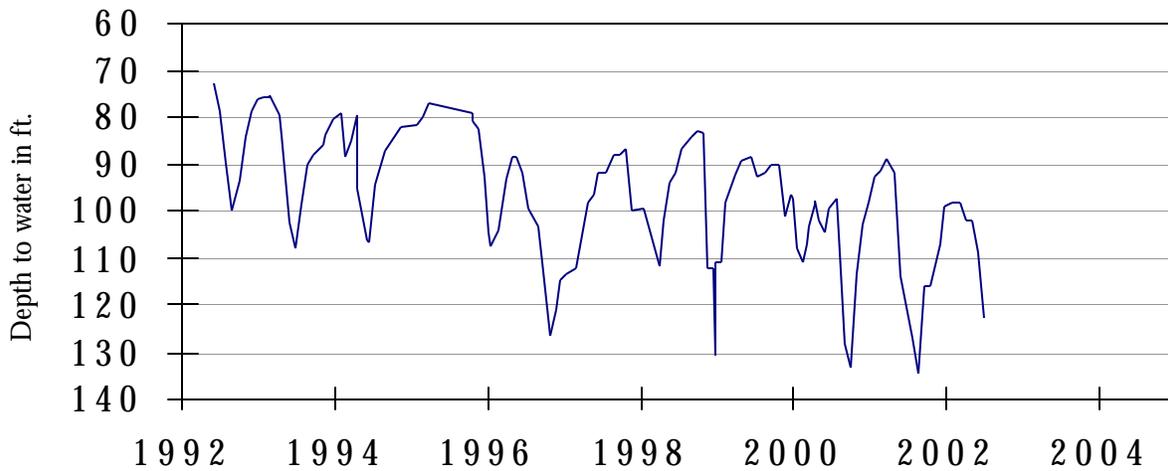
The late June water-level measurement in this Evangeline Formation Gulf Coast aquifer well, elevation 66 feet above sea level, was 238.31 feet below land surface. This was 0.89 feet above last month's measurement, 4.69 feet above last year's measurement, and 135.08 feet below the initial measurement recorded in 1947.

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



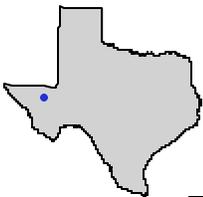
The late June water-level measurement in this Edwards (BFZ) aquifer well, elevation 731 feet above sea level, was 73.38 feet below land surface. This was 8.28 feet below last month's measurement, 8.30 feet below last year's measurement, and 13.76 feet below the initial measurement recorded in 1962.

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



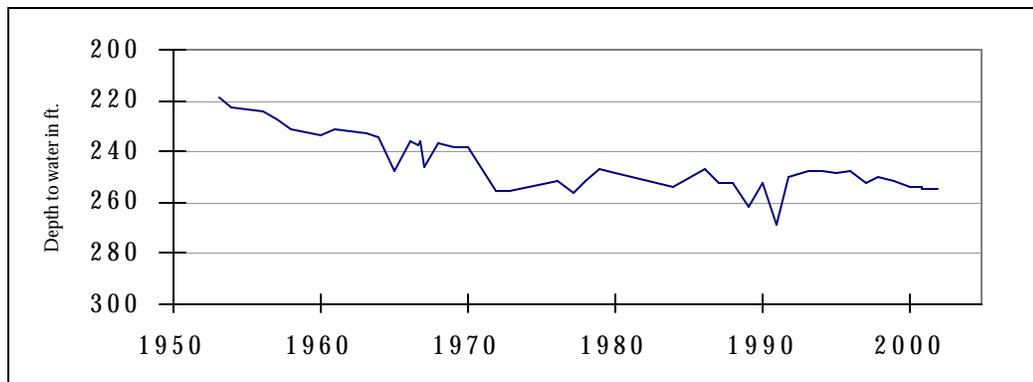
The late June water-level measurement in this Carrizo aquifer well, elevation 446 feet above sea level, was 122.80 feet below land surface. This measurement was 14.03 feet below last month's measurement, 8.83 feet below last year's measurement, and 41.51 feet below the initial measurement recorded in 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. 4759203  
Culberson County**



This 550 ft. deep observation well, located approximately 5 miles east of Van Horn, at an elevation of 3,776 feet above sea level, was completed in the West Texas Bolsons aquifer. The bolsons, or "filled basins" aquifer provides water mainly for irrigation purposes. The graph illustrates periods of drought for west Texas during the 1970s, early 1980s and the beginning of 1990s.

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