

Texas Water Development Board



W **A** **T** **E** **R**
Conditions

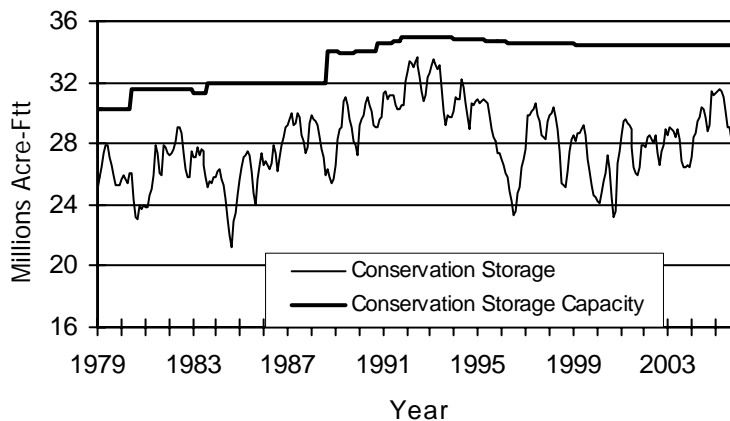
RESERVOIR STORAGE

December 2005

Near the end of December, the 77 reservoirs monitored for this report held 26.77 million acre-feet in conservation storage, or 78 percent of the conservation storage capacity of the state's major reservoirs. Statewide total storage is below median for this time of year. Storage decreased during the month by 0.31 million acre-feet (-0.9% of conservation storage capacity). Compared to last year, storage decreased by 4.33 million acre-feet (-12.6%).

Storage was near capacity in the Upper Coast Region (95%), but lower than one-third of capacity in the High Plains Region (26%). Storage was at 100% in 4 reservoirs, and the Texas share of Amistad remained above its capacity, at 130%. Compared to this time last year, the storage increased in Southern and Trans-Pecos Regions (+4%) and the Low Rolling Plains Region (+3%), and the decreased in six regions with the sharpest decreases in the East and South Central Regions (both -19%).

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.

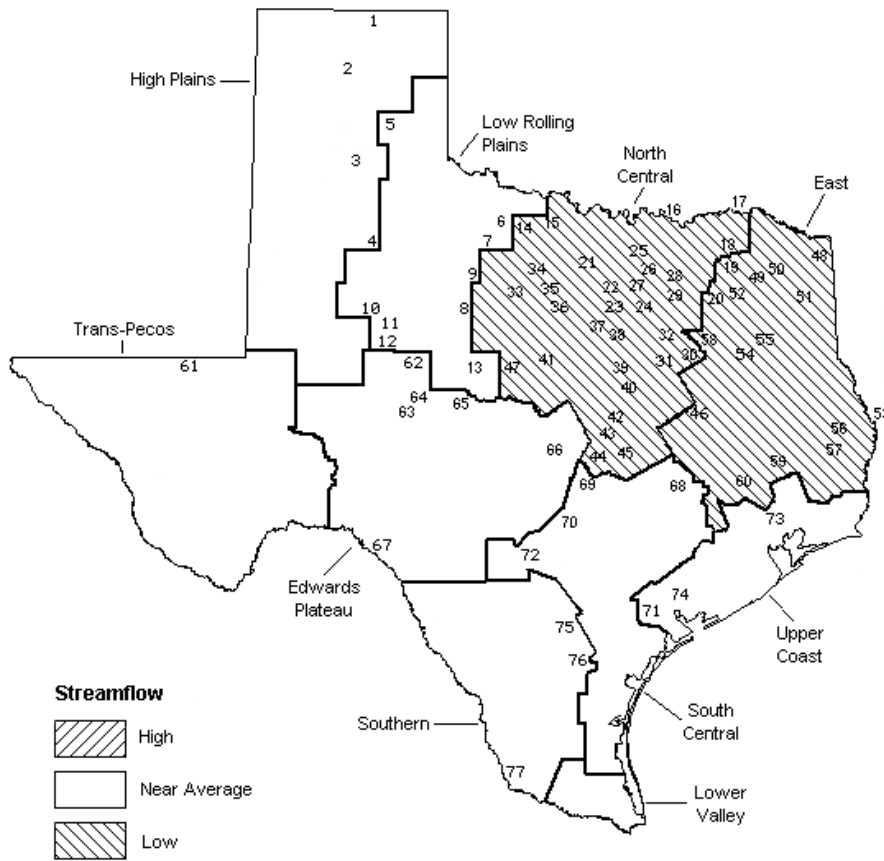
STREAMFLOW

Of 29 reporting index stations in December, computed 30-day mean flows were high (5% - 30%) at 2 stations, low (70% - 95%) at 12 stations, and near normal (30% - 70% exceedance) at the remaining 15 stations. Compared to November, flows have increased at 19 index stations and decreased at 10 stations.

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

DECEMBER 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. Grapeville 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 Dec. 2005 (acre-feet) (%) | Late November 2005 (acre-feet) (%) | Late December 2004 (acre-feet) (%) | | |
| HIGH PLAINS | | | | | | | |
| Palo Duro Reservoir | 1 | 60,900 | - | - | - | - | - |
| Lake Meredith (Texas) | 2 | 500,000 | 146,500 | 29 | -3,690 | -1 | -19,690 |
| Lake Meredith (Texas and Oklahoma) | (2) | 779,560 | 146,500 | 19 | -3,690 | 0 | -19,690 |
| MacKenzie Reservoir | 3 | 46,250 | 9,750 | 21 | -140 | 0 | -280 |
| White River Lake | 4 | 31,850 | 6,130 | 19 | -280 | -1 | -3,670 |
| TOTAL | | 639,000 | 164,670 | 26 | -4,110 | -1 | -25,780 |
| LOW ROLLING PLAINS | | | | | | | |
| Greenbelt Reservoir | 5 | 58,200 | 21,640 | 37 | -200 | 0 | -1,040 |
| Lake Kemp | 6 | 319,600 | 278,720 | 87 | -2,400 | -1 | 32,340 |
| Miller's Creek Reservoir | 7 | 27,890 | 26,460 | 95 | -540 | -2 | 5,140 |
| Fort Phantom Hill Reservoir | 8 | 70,030 | 47,320 | 68 | -2,150 | -3 | -19,940 |
| Lake Stamford | 9 | 52,700 | 50,090 | 95 | -1,190 | -2 | 13,890 |
| Lake J. B. Thomas | 10 | 202,300 | 59,140 | 29 | -2,430 | -1 | -2,920 |
| Lake Colorado City | 11 | 30,800 | 28,240 | 92 | -400 | -1 | -2,560 |
| Champion Creek Reservoir | 12 | 41,600 | 5,810 | 14 | 1,310 | 3 | 850 |
| Hords Creek Lake | 13 | 8,600 | 6,740 | 78 | -190 | -2 | -1,110 |
| TOTAL | | 811,720 | 524,160 | 65 | -8,190 | -1 | 24,650 |
| NORTH CENTRAL | | | | | | | |
| Lake Kickapoo | 14 | 106,000 | 93,780 | 88 | -1,970 | -2 | 20,190 |
| Lake Arrowhead | 15 | 262,100 | 226,370 | 86 | -4,110 | -2 | 35,840 |
| Lake Texoma | 16 | 2,722,300 | 2,402,140 | 88 | -39,810 | -1 | -215,410 |
| Pat Mayse Lake | 17 | 124,500 | 93,580 | 75 | -2,560 | -2 | -26,220 |
| Cooper Lake | 18 | 273,000 | 141,570 | 52 | -11,040 | -4 | -71,450 |
| Lake Sulphur Springs | 19 | 17,710 | 11,610 | 66 | -180 | -1 | -6,100 |
| Lake Tawakoni | 20 | 936,200 | 620,000 | 66 | -20,500 | -2 | -262,500 |
| Bridgeport Reservoir | 21 | 374,830 | 255,100 | 68 | -2,800 | -1 | -89,900 |
| Eagle Mountain Reservoir | 22 | 178,380 | 137,200 | 77 | -3,000 | -2 | -35,800 |
| Benbrook Lake | 23 | 88,200 | 44,290 | 50 | -1,750 | -2 | -42,330 |
| Joe Pool Lake | 24 | 175,800 | 150,860 | 86 | -2,320 | -1 | -24,940 |
| Ray Roberts Lake | 25 | 798,760 | 702,040 | 88 | -10,780 | -1 | -96,720 |
| Lewisville Lake | 26 | 555,000 | 451,420 | 81 | -11,390 | -2 | -103,580 |
| Grapevine Lake | 27 | 187,700 | 136,260 | 73 | -3,740 | -2 | -47,130 |
| Lavon Lake | 28 | 443,800 | 276,860 | 62 | -7,780 | -2 | -166,940 |
| Lake Ray Hubbard | 29 | 413,420 | 330,800 | 80 | -10,500 | -3 | -70,800 |
| Richland-Chambers Creek Lake | 30 | 1,103,820 | 936,100 | 85 | -21,900 | -2 | -167,720 |
| Navarro Mills Lake | 31 | 55,810 | 39,420 | 71 | -1,510 | -3 | -16,390 |
| Bardwell Lake | 32 | 53,580 | 34,970 | 65 | -1,570 | -3 | -12,260 |
| Hubbard Creek Reservoir | 33 | 317,800 | 184,700 | 58 | -3,020 | -1 | -1,400 |
| Lake Graham | 34 | 45,000 | 42,840 | 95 | -1,000 | -2 | 3,620 |
| Possum Kingdom Lake | 35 | 551,820 | 497,630 | 90 | -7,480 | -1 | -46,170 |
| Lake Palo Pinto | 36 | 27,650 | 14,890 | 54 | -1,110 | -4 | -11,450 |
| Lake Granbury | 37 | 135,680 | 132,640 | 98 | 2,110 | 2 | -1,260 |
| Lake Pat Cleburne | 38 | 25,300 | 18,890 | 75 | -370 | -1 | -6,410 |
| Whitney Lake | 39 | 622,800 | 509,050 | 82 | -31,520 | -5 | -70,440 |
| Waco Lake | 40 | 144,500 | 144,500 | 100 | 0 | 0 | 0 |
| Proctor Lake | 41 | 55,590 | 35,700 | 64 | -1,970 | -4 | -19,890 |
| Belton Lake | 42 | 434,500 | 405,030 | 93 | -6,750 | -2 | -29,470 |
| Stillhouse Hollow Lake | 43 | 226,060 | 221,440 | 98 | -1,070 | 0 | -4,620 |
| Lake Georgetown | 44 | 37,010 | 23,620 | 64 | -1,960 | -5 | -13,390 |
| Granger Lake | 45 | 54,280 | 54,280 | 100 | 400 | 1 | 0 |
| Lake Limestone | 46 | 215,750 | 169,110 | 78 | -4,940 | -2 | -43,740 |
| Lake Brownwood | 47 | 143,400 | 120,290 | 84 | -2,190 | -2 | -13,220 |
| TOTAL | | 11,908,050 | 9,658,980 | 81 | -220,080 | -2 | -1,658,000 |

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

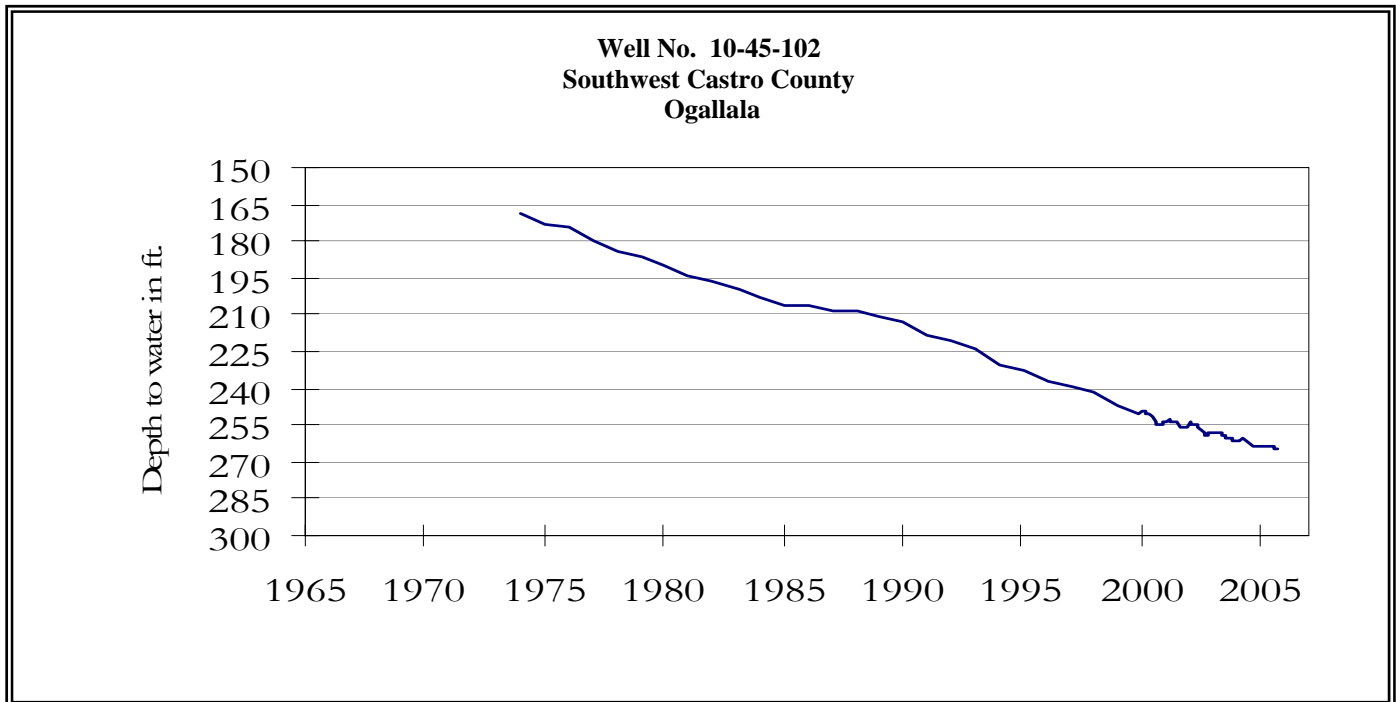
| Name of Lake or Reservoir | No. on Map | Conservation Storage Capacity (acre-feet) | Conservation Storage Late Dec. 2005 (acre-feet) | (%) | Change since Late November 2005 (acre-feet) | (%) | Change since Late December 2004 (acre-feet) | (%) |
|---|------------------|--|--|-----------|--|-----------|--|------------|
| EAST | | | | | | | | |
| Wright Patman Lake | 48 | 142,700 | 142,700 | 100 | 0 | 0 | 0 | 0 |
| Lake Cypress Springs | 49 | 66,800 | 57,300 | 86 | -600 | -1 | -8,130 | -12 |
| Lake Bob Sandlin | 50 | 202,300 | 156,900 | 78 | -2,500 | -1 | -38,300 | -19 |
| Lake O' the Pines | 51 | 252,000 | 177,080 | 70 | -4,530 | -2 | -71,760 | -28 |
| Lake Fork Reservoir | 52 | 635,200 | 567,200 | 89 | -7,400 | -1 | -68,000 | -11 |
| Toledo Bend Reservoir | 53 | 4,472,900 | 3,020,000 | 68 | 1,000 | 0 | -895,000 | -20 |
| Lake Palestine | 54 | 411,300 | 335,950 | 82 | -5,630 | -1 | -75,350 | -18 |
| Lake Tyler | 55 | 73,700 | 59,350 | 81 | -1,390 | -2 | -14,350 | -19 |
| Sam Rayburn Reservoir | 56 | 2,876,300 | 2,356,740 | 82 | -11,140 | 0 | -519,560 | -18 |
| B. A. Steinhagen Lake | 57 | 94,200 | 52,680 | 56 | -2,950 | -3 | -30,540 | -32 |
| Cedar Creek Reservoir | 58 | 637,050 | 506,400 | 79 | -16,500 | -3 | -128,900 | -20 |
| Lake Livingston | 59 | 1,750,000 | 1,406,000 | 80 | -12,000 | -1 | -338,000 | -19 |
| Lake Conroe | 60 | 429,900 | 338,900 | 79 | -2,500 | -1 | -77,700 | -18 |
| TOTAL | | 12,044,350 | 9,177,200 | 76 | -66,140 | -1 | -2,265,590 | -19 |
| TRANS-PECOS | | | | | | | | |
| Red Bluff Reservoir | 61 | 307,000 | 128,480 | 42 | 23,010 | 7 | 11,130 | 4 |
| TOTAL | | 307,000 | 128,480 | 42 | 23,010 | 7 | 11,130 | 4 |
| EDWARDS PLATEAU | | | | | | | | |
| E. V. Spence Reservoir | 62 | 488,760 | 94,710 | 19 | -1,710 | 0 | 15,770 | 3 |
| Twin Buttes Reservoir | 63 | 177,800 | 48,730 | 27 | 1,900 | 1 | 21,710 | 12 |
| O.C. Fisher Lake | 64 | 119,200 | 13,850 | 12 | -420 | 0 | 6,490 | 5 |
| O. H. Ivie Reservoir | 65 | 554,340 | 289,400 | 52 | -2,800 | -1 | 55,300 | 10 |
| Lake Buchanan | 66 | 896,980 | 766,450 | 85 | -8,190 | -1 | -130,530 | -15 |
| Amistad Reservoir (Texas) | 67 | 1,771,030 | 2,311,000 | 130 | -25,000 | -1 | -96,000 | -5 |
| Amistad Reservoir (Texas and Mexico) | (67) | 3,151,300 | 2,763,000 | 88 | -15,000 | 0 | -172,000 | -5 |
| TOTAL | | 4,008,110 | 3,524,140 | 88 | -36,220 | -1 | -127,260 | -3 |
| SOUTH CENTRAL | | | | | | | | |
| Somerville Lake | 68 | 155,060 | 121,630 | 78 | 190 | 0 | -33,430 | -22 |
| Lake Travis | 69 | 1,144,100 | 881,700 | 77 | -13,640 | -1 | -262,400 | -23 |
| Canyon Lake | 70 | 385,600 | 360,770 | 94 | -2,480 | -1 | -21,800 | -6 |
| Coletto Creek Reservoir | 71 | 35,060 | 25,700 | 73 | -550 | -2 | -6,180 | -18 |
| Medina Lake | 72 | 254,000 | 197,100 | 78 | -6,500 | -3 | -56,900 | -22 |
| TOTAL | | 1,973,820 | 1,586,900 | 80 | -22,980 | -1 | -380,710 | -19 |
| UPPER COAST | | | | | | | | |
| Lake Houston | 73 | 128,860 | 128,860 | 100 | 0 | 0 | 0 | 0 |
| Lake Texana | 74 | 157,900 | 143,430 | 91 | -8,000 | -5 | -12,520 | -8 |
| TOTAL | | 286,760 | 272,290 | 95 | -8,000 | -3 | -12,520 | -4 |
| SOUTHERN | | | | | | | | |
| Choke Canyon Reservoir | 75 | 695,260 | 617,000 | 89 | -6,000 | -1 | -75,000 | -11 |
| Lake Corpus Christi | 76 | 241,240 | 142,500 | 59 | -8,500 | -4 | -98,740 | -41 |
| Falcon Reservoir (Texas) | 77 | 1,555,120 | 972,000 | 63 | 47,000 | 3 | 279,000 | 18 |
| Falcon Reservoir (Texas and Mexico) | (77) | 2,653,290 | 1,621,000 | 61 | 75,000 | 3 | -171,000 | -6 |
| TOTAL | | 2,491,620 | 1,731,500 | 69 | 32,500 | 1 | 105,260 | 4 |
| STATE TOTAL | | 34,470,430 | 26,768,320 | 78 | -310,210 | -1 | -4,328,820 | -13 |

Note:

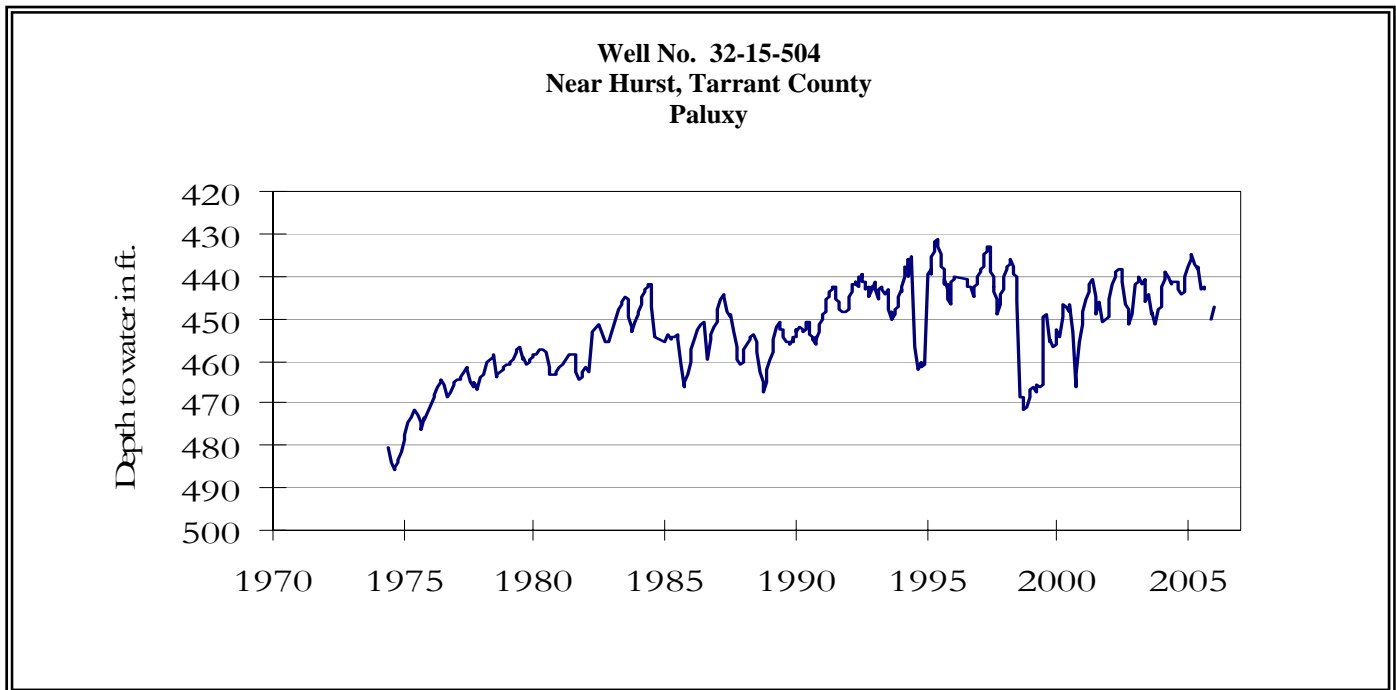
Conservation storage capacity is the space available to store water above the level of invert of lowest outlet works and below the level of top of conservation pool or normal maximum operating level. Conservation storage refers to the volume of water held within the conservation storage space. Not included 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). This month the storage of Palo Duro Reservoir was unavailable. Preliminary figures are shown for the Texas' share of conservation storage in all reservoirs.

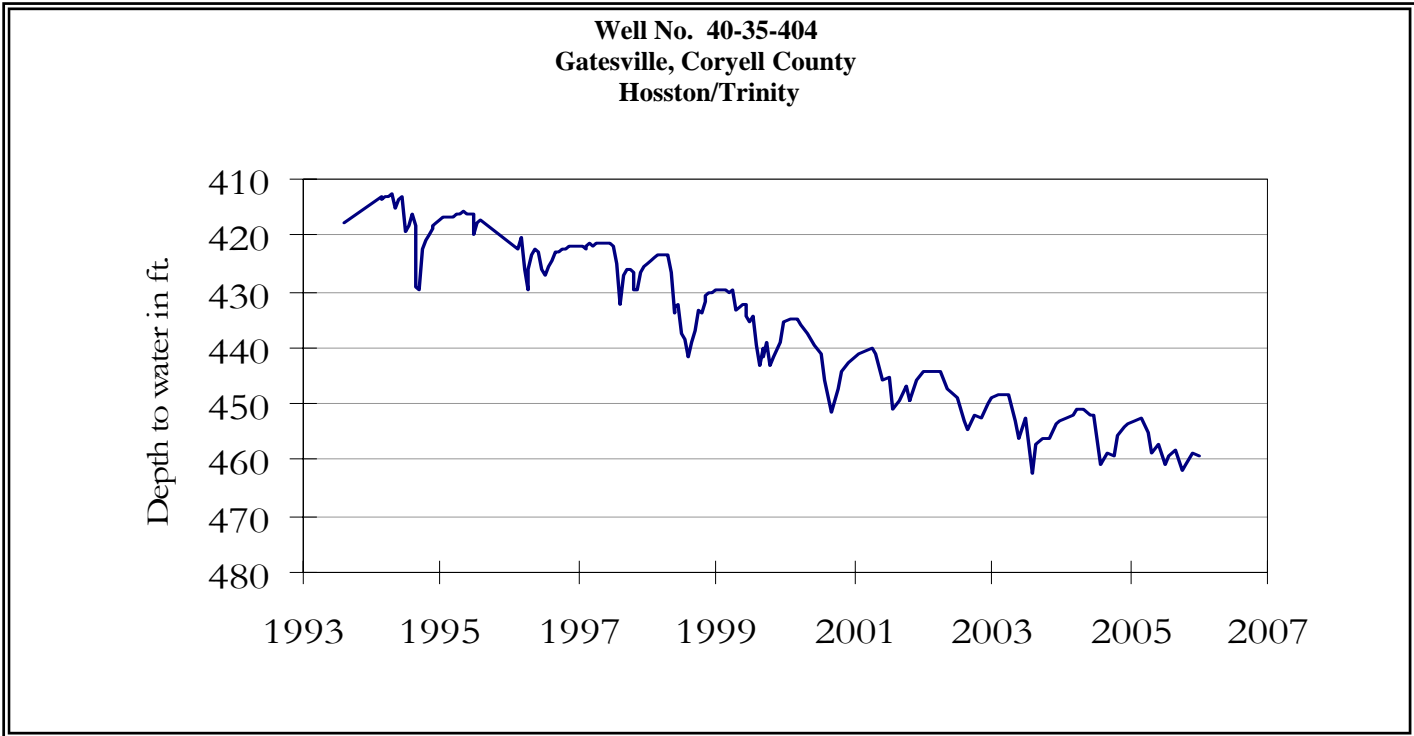
DECEMBER GROUND WATER LEVELS IN OBSERVATION WELLS



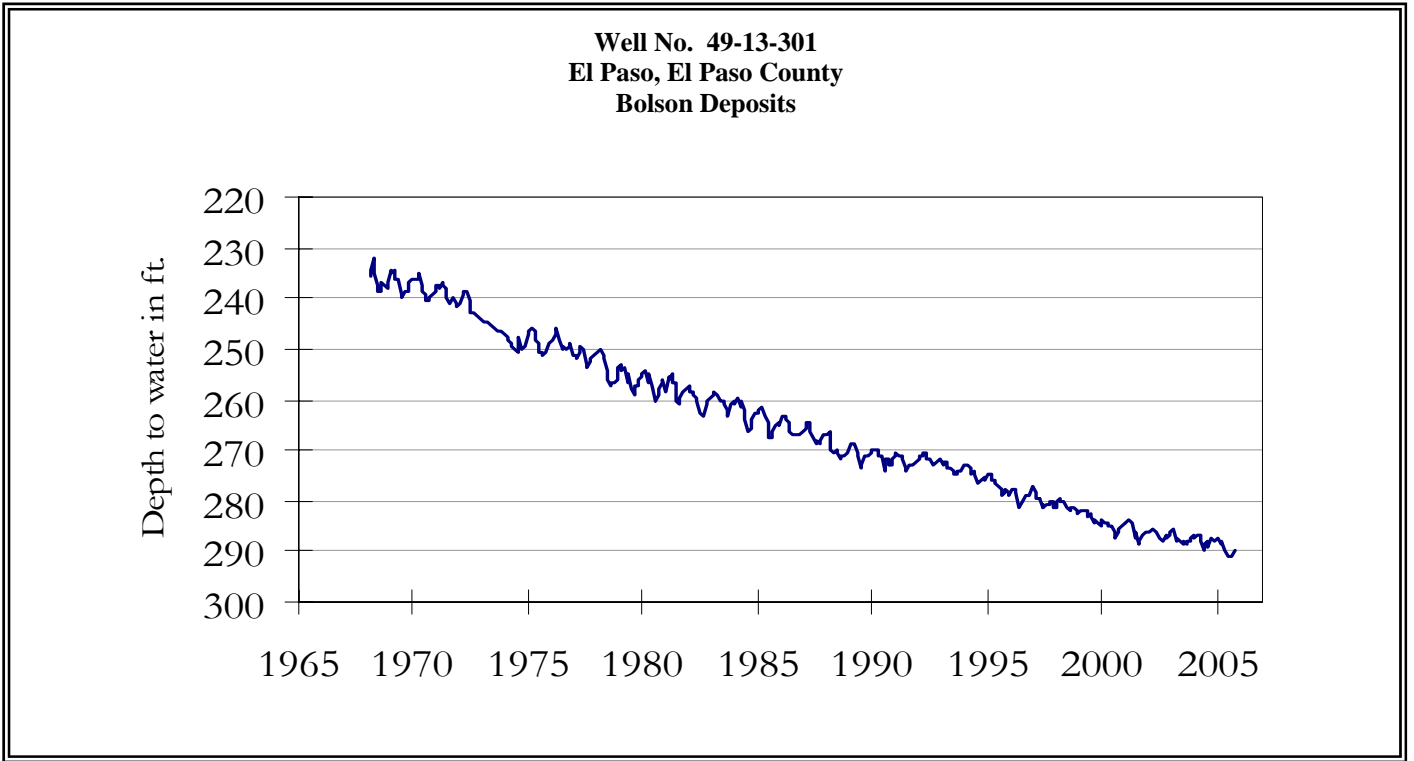
The water-level measurement is not available this month for this Ogallala aquifer well (recorder under repair). The graph presented is from last month's report.



The late December water-level measurement in this Paluxy Formation Trinity aquifer well, elevation 535 feet above sea level, was 447.24 feet below land surface. This measurement was 2.88 feet above last month's measurement, 9.74 feet below last year's measurement, and 69.24 feet below the initial measurement recorded in 1953. No water level measurements were recorded for September and October.

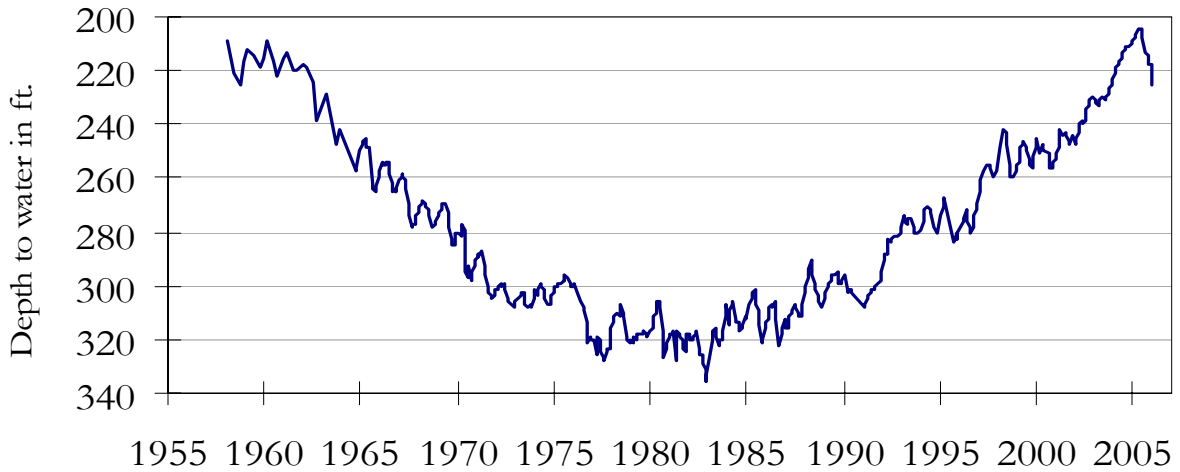


The late December water-level measurement in this Hosston Formation Trinity aquifer well, elevation 823 feet above sea level, was 459.01 feet below land surface. This water level was 0.12 feet below last month's measurement, 5.57 feet below last year's measurement, and 167.01 feet below the initial measurement recorded in 1955.



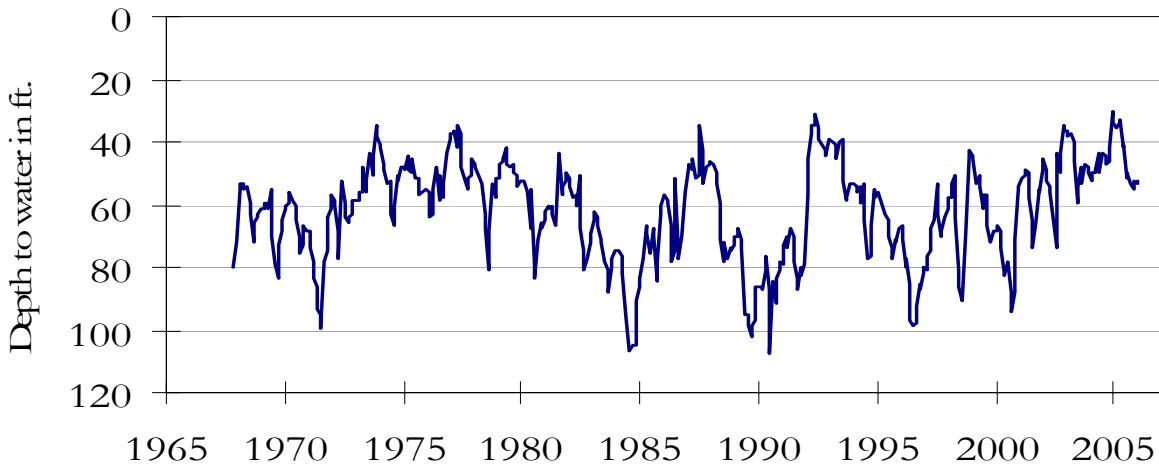
The water-level measurement is not available this month for this Hueco Bolson aquifer well (recorder under repair). The graph presented is from last month's report.

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



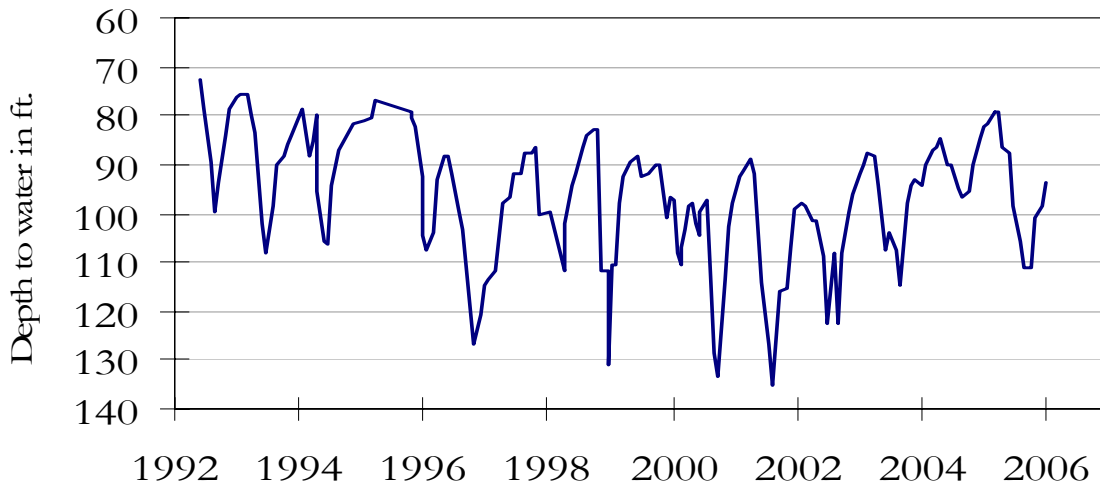
The late December water-level measurement in this Evangeline Formation Gulf Coast aquifer well, elevation 66 feet above sea level, was 225.56 feet below land surface. This was 7.56 feet below last month's measurement, 16.79 feet below last year's measurement, and 90.06 feet below the initial measurement recorded in 1947.

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



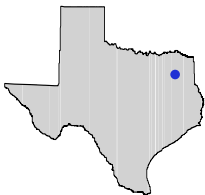
The late December water-level measurement in this Edwards (BFZ) aquifer well, elevation 731 feet above sea level, was 52.58 feet below land surface. This was 0.31 feet above last month's measurement, 18.65 feet below last year's measurement, and 5.94 feet below the initial measurement recorded in 1962.

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



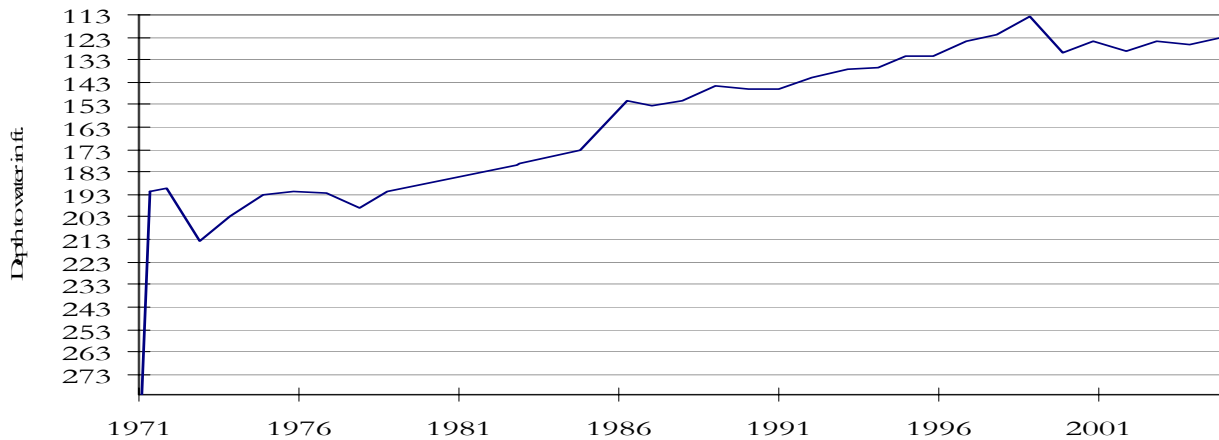
The late December water-level measurement in this Carrizo aquifer well, elevation 446 feet above sea level, was 93.88 feet below land surface. This measurement was 4.36 feet above last month's measurement, 11.85 feet below last year's measurement, and 58.52 feet below the initial measurement recorded 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. 17-42-803
Delta County**



This unused water level observation well, located 5 miles east of Commerce, at an elevation of 481 feet ASL, was completed in the Nacatoch aquifer. Long term municipal pumpage from the aquifer in 1960's and early 1970's resulted in water level declines around Commerce. Fortunately, these declines have been stabilized with conjunctive use of available surface water supplies.

December, 2005

Water level measurements were available for five of the seven key monitoring wells. Water levels rose in three of the monitoring wells since the beginning of December, ranging from 0.31 feet in the Bexar Co. J-17 well to 4.36 feet in the Atascosa Co. Carrizo well. Water levels declined in the remaining two monitoring wells, ranging from 0.12 feet in the Coryell Co. Hosston/Trinity well to 7.56 feet in the Harris Co. Evangeline well. The J-17 well recorded a water level of 52.58 feet below land surface. This water level is approximately twenty-seven (27) feet above the Stage 1 critical management criteria.

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