

Texas Water Development Board



WATER Conditions

RESERVOIR STORAGE

March 2009

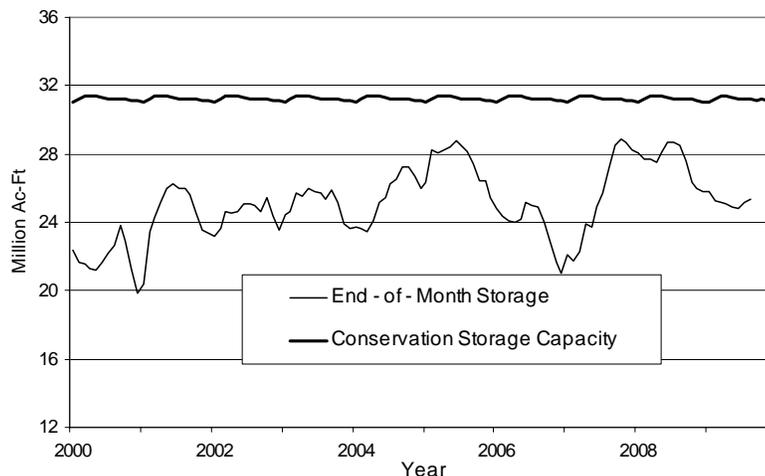
Rainfall in late March increased lake storage in East Texas, but gave little comfort to the rest of the State battling drought. Near the end of March, the 109 reservoirs monitored for this report held 25.3 million acre-feet* in conservation storage, or 82 percent of the conservation storage capacity of the state's 175 major water supply reservoirs. This is 539,569 acre-feet more than last month.

Storage was at 100% in 18 reservoirs, including Falcon and Amistad. Thirteen out of these 18 reservoirs are in the East Region. On the other hand, five lakes were at or below 10% full: O C Fisher Lake was still effectively empty, Palo Duro (1%) was almost empty, Lake Meredith and J B Thomas both at 7%, and E.V. Spence is 9% full.

Only the East Region (94%) has storage at or above 90% of capacity; the High Plains (11%) and Trans-Pecos regions (27%) remained very low. Storage increased in the North Central and East regions but decreased everywhere else over the month. Since last year, storage increased in the Southern and High Plains regions.

* Only the Texas share of storage in border reservoirs is counted.

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS



Figures are based on end of the month data at 109 major reservoirs that represent 95 percent of the total conservation storage capacity of the 175 major water supply reservoirs in Texas. By definition, a major reservoir has a conservation storage capacity of 5,000 acre-feet or greater.

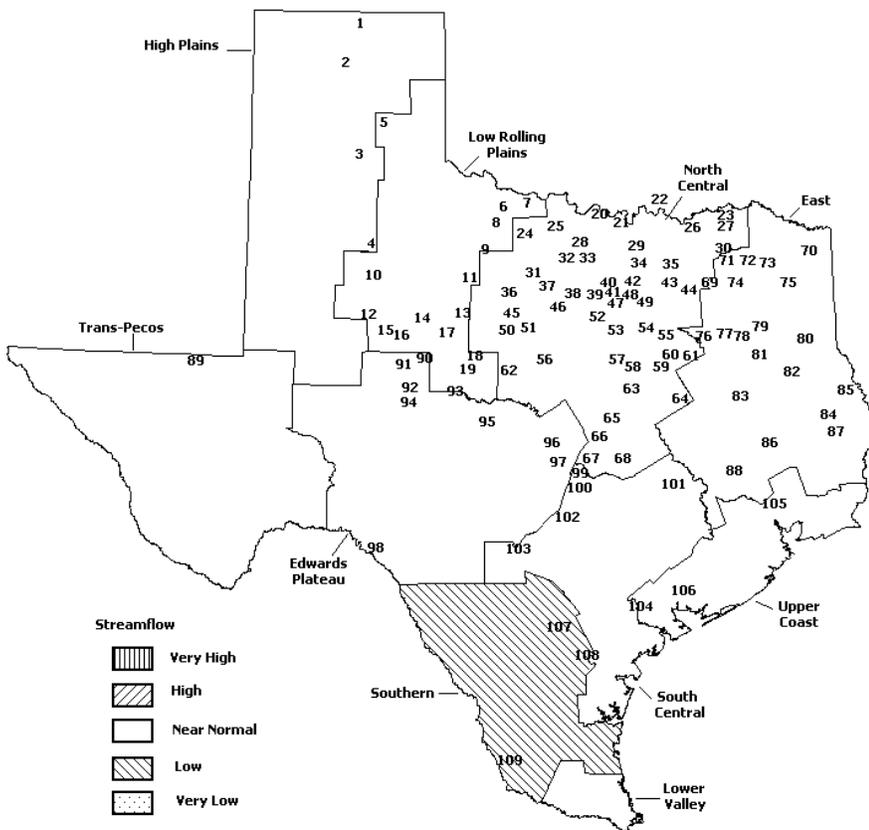
STREAMFLOW

Of 29 reporting index stations in March, computed 30-day mean flows were very high (<5%) at 1 station, high (5% - 30%) at 4 stations, low (70% - 95%) at 11 stations, and near normal (30% - 70%) at the remaining 13 stations. Compared to February, flows have increased at 16 index stations and decreased at 11 stations.

On a regional basis, flows in March were low in the Southern Region, but normal in all other regions. Streamflow in the Lower Valley Region is not monitored.

MARCH STREAMFLOW CONDITIONS

Reservoirs Shown on Map



1. Palo Duro Reservoir
2. Meredith, Lake
3. MacKenzie Reservoir
4. White River Lake
5. Greenbelt Lake
6. Electra, Lake
7. N. Fork Buffalo Creek Reservoir
8. Kemp, Lake
9. Miller's Creek Reservoir
10. Alan Henry Reservoir
11. Stamford, Lake
12. Lake J. B. Thomas
13. Fort Phantom Hill, Lake
14. Sweetwater, Lake
15. Colorado City, Lake
16. Champion Creek Reservoir
17. Abilene, Lake
18. Coleman, Lake
19. Hords Creek Lake
20. Farmers Creek Reservoir
21. Hubert H Moss Lake
22. Texoma, Lake
23. Pat Mayse Lake
24. Lake Kickapoo
25. Lake Arrowhead
26. Bonham, Lake
27. Crook, Lake
28. Amon G Carter, Lake
29. Ray Roberts, Lake
30. Jim Chapman Lake
31. Graham, Lake
32. Lost Creek Reservoir
33. Bridgeport Reservoir
34. Lewisville Lake
35. Lavon Lake
36. Hubbard Creek Reservoir
37. Possum Kingdom Lake
38. Mineral Wells, Lake
39. Weatherford, Lake
40. Eagle Mountain Lake
41. Worth, Lake
42. Grapevine Lake
43. Lake Ray Hubbard
44. New Terrell City Lake
45. Daniel, Lake
46. Palo Pinto, Lake
47. Benbrook Lake
48. Arlington, Lake
49. Joe Pool Lake
50. Cisco, Lake
51. Leon, Lake
52. Lake Granbury
53. Pat Cleburne, Lake
54. Waxahacie, Lake
55. Bardwell Lake
56. Proctor Lake
57. Whitney Lake
58. Aquilla Lake
59. Navarro Mills Lake
60. Halbert, Lake
61. Richland-Chambers Reservoir
62. Lake Brownwood
63. Waco Lake
64. Limestone, Lake
65. Belton Lake
66. Stillhouse Hollow Lake
67. Georgetown, Lake
68. Granger Lake
69. Tawakoni, Lake
70. Wright Patman Lake
71. Sulphur Springs, Lake
72. Cypress Springs, Lake
73. Bob Sandlin, Lake
74. Fork Reservoir, Lake
75. O' the Pines, Lake
76. Cedar Creek Reservoir Trinity
77. Athens, Lake
78. Palestine, Lake
79. Tyler, Lake
80. Murvaul, Lake
81. Jacksonville, Lake
82. Nacogdoches, Lake
83. Houston County Lake
84. Sam Rayburn Reservoir
85. Toledo Bend Reservoir
86. Livingston, Lake
87. B. A. Steinhagen Lake
88. Conroe, Lake
89. Red Bluff Reservoir
90. Oak Creek Reservoir
91. E. V. Spence Reservoir
92. O. C. Fisher Lake
93. O. H. Ivie Reservoir
94. Twin Buttes Reservoir
95. Vradly Creek Reservoir
96. Buchanan, Lake
97. Lyndon B Johnson, Lake
98. Amistad Reservoir, Intl.
99. Travis, Lake
100. Austin, Lake
101. Somerville Lake
102. Canyon Lake
103. Medina Lake
104. Coletto Creek Reservoir
105. Lake Houston
106. Texana, Lake
107. Choke Canyon Reservoir
108. Lake Corpus Christi
109. Falcon Reservoir, Intl.

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	No. on Map	Conservation Storage		Conservation Storage		Change since Late February		Change since Late March	
		Capacity (acre-feet)	Late Mar. (acre-feet)	2009 (%)	Late February 2009 (%)	Late March 2008 (acre-feet)	(%)		
HIGH PLAINS									
Palo Duro Reservoir	1	60,897	774	1	-120	0	166	0	
Meredith, Lake (Texas)	2	500,000	58,140	12	-3,008	-1	13,776	3	
Meredith, Lake (Texas & Oklahoma)	(2)	779,556	58,140	7	-3,008	0	13,776	2	
MacKenzie Reservoir	3	46,429	5,589	12	-109	0	-1,560	-3	
White River Lake	4	29,880	6,185	21	-356	-1	5,350	18	
TOTAL		637,206	70,688	11	-3,593	-1	17,732	3	
LOW ROLLING PLAINS									
Greenbelt Lake	5	59,500	18,450	31	91	0	-3,310	-6	
*Electra, Lake	6	5,626	808	14	-74	-1	-859	-15	
N. Fork Buffalo Crk Reservoir	7	15,400	3,671	24	-212	-1	-941	-6	
Kemp, Lake	8	245,308	152,931	62	-7,553	-3	-90,268	-37	
Millers Creek Reservoir	9	27,888	15,164	54	-412	-1	-7,175	-26	
Alan Henry Reservoir	10	94,808	91,544	97	-819	-1	1,654	2	
Stamford, Lake	11	51,570	32,965	64	-1,238	-2	-15,333	-30	
J B Thomas, Lake	12	199,931	14,853	7	-810	0	-5,973	-3	
Fort Phantom Hill, Lake	13	70,030	59,306	85	-1,279	-2	-9,298	-13	
Sweetwater, Lake	14	10,006	7,270	73	-91	-1	-369	-4	
Colorado City, Lake	15	31,793	21,340	67	-90	0	-4,993	-16	
Champion Creek Reservoir	16	41,618	8,913	21	39	0	-522	-1	
Abilene, Lake	17	6,099	3,246	53	-213	-3	-2,707	-44	
Coleman, Lake	18	38,076	27,098	71	-281	-1	-8,688	-23	
Hords Creek Lake	19	5,684	2,576	45	-86	-2	-2,190	-39	
TOTAL		903,337	460,135	51	-13,028	-1	-150,972	-17	
NORTH CENTRAL									
Nocona, Lake (Farmers Crk)	20	21,445	16,309	76	-297	-1	-4,117	-19	
Hubert H Moss Lake	21	24,058	20,968	87	129	1	-3,047	-13	
Texoma, Lake (Texas)	22	1,185,688	1,185,688	100	0	0	0	0	
Texoma, Lake (Texas & Oklahoma)	(22)	2,371,376	2,371,376	100	0	0	0	0	
*Pat Mayse Lake	23	118,100	114,310	97	9,140	8	-3,790	-3	
Kickapoo, Lake	24	85,825	37,143	43	-960	-1	-20,578	-24	
Arrowhead, Lake	25	235,997	148,614	63	-4,921	-2	-57,920	-25	
Bonham, Lake	26	11,026	7,944	72	137	1	-3,082	-28	
Crook, Lake	27	9,195	9,050	98	351	4	-145	-2	
Amon G Carter, Lake	28	19,903	15,557	78	-283	-1	-4,346	-22	
Ray Roberts, Lake	29	798,758	712,363	89	-4,852	-1	-86,395	-11	
Jim Chapman Lake (Cooper)	30	260,332	163,664	63	11,833	5	-96,668	-37	
Graham, Lake	31	45,260	38,974	86	-737	-2	-2,209	-5	
*Lost Creek Reservoir	32	11,950	10,139	85	-80	-1	-1,811	-15	
Bridgeport, Lake	33	366,236	262,456	72	-4,955	-1	-92,199	-25	
Lewisville Lake	34	543,988	434,624	80	10,436	2	-109,364	-20	
Lavon Lake	35	443,844	374,880	84	16,226	4	-68,964	-16	
Hubbard Creek Reservoir	36	318,067	248,940	78	-3,316	-1	-37,585	-12	
Possum Kingdom Lake	37	540,340	485,311	90	-5,946	-1	-39,550	-7	
*Mineral Wells, Lake	38	7,065	5,074	72	9	0	-1,960	-28	
Weatherford, Lake	39	18,645	12,129	65	418	2	-6,435	-35	
Eagle Mountain Lake	40	182,500	144,553	79	152	0	-37,947	-21	
Worth, Lake	41	24,500	16,829	69	-217	-1	-7,401	-30	
Grapevine Lake	42	164,702	117,740	71	1,470	1	-46,962	-29	
Ray Hubbard, Lake	43	452,040	428,190	95	19,508	4	-23,850	-5	
New Terrell City Lake	44	8,583	7,695	90	451	5	-888	-10	
Daniel, Lake	45	9,435	6,091	65	-241	-3	-2,536	-27	
Palo Pinto, Lake	46	27,150	12,929	48	-703	-3	-13,139	-48	
Benbrook Lake	47	85,648	68,177	80	5,434	6	-17,471	-20	
Arlington, Lake	48	38,740	32,562	84	6,807	18	-6,178	-16	

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage		Change since Late February 2009		Change since Late March 2008		
			Late Mar. (acre-feet)	2009 (%)	(acre-feet)	(%)	(acre-feet)	(%)	
NORTH CENTRAL (Continue)									
Joe Pool Lake	49	142,861	131,232	92	7,231	5	-11,629	-8	
*Cisco, Lake	50	26,000	18,742	72	-129	0	-2,713	-10	
Leon, Lake	51	26,421	20,285	77	-178	-1	-6,136	-23	
Granbury, Lake	52	128,046	118,594	93	3,801	3	-5,752	-4	
Pat Cleburne, Lake	53	25,730	20,363	79	1,189	5	-5,367	-21	
Waxahachie, Lake	54	10,779	9,948	92	646	6	-831	-8	
Bardwell Lake	55	46,122	39,811	86	4,320	9	-6,311	-14	
Proctor Lake	56	55,457	34,922	63	-198	0	-20,535	-37	
Whitney, Lake	57	553,349	365,872	66	1,111	0	-143,005	-26	
Aquilla Lake	58	45,092	42,893	95	9,850	22	-2,199	-5	
Navarro Mills Lake	59	55,817	55,083	99	14,828	27	-734	-1	
*Halbert, Lake	60	6,033	3,388	56	219	4	-2,008	-33	
Richland-Chambers Reservoir	61	1,103,816	924,780	84	25,715	2	-179,036	-16	
*Brownwood, Lake	62	131,429	99,350	76	-1,228	-1	-27,322	-21	
Waco, Lake	62	198,943	192,691	97	19,289	10	-6,252	-3	
Limestone, Lake	64	208,015	185,835	89	11,344	5	-22,180	-11	
Belton Lake	65	435,225	409,341	94	11,733	3	-25,884	-6	
Stillhouse Hollow Lake	66	227,771	194,986	86	1,230	1	-32,785	-14	
Georgetown, Lake	67	36,823	18,416	50	558	2	-12,948	-35	
Granger Lake	68	52,525	39,923	76	708	1	-12,602	-24	
Tawakoni, Lake	69	888,126	735,356	83	24,404	3	-152,770	-17	
TOTAL		10,463,400	8,800,714	84	191,436	2	-1,475,536	-14	
EAST									
Wright Patman Lake	70	122,593	122,593	100	0	0	0	0	
*Sulphur Springs, Lake	71	17,838	17,838	100	2,893	16	0	0	
Cypress Springs, Lake	72	67,689	67,689	100	276	0	0	0	
Bob Sandlin, Lake	73	200,579	200,579	100	0	0	0	0	
Fork Reservoir, Lake	74	604,927	601,231	99	18,479	3	-3,696	-1	
O the Pines, Lake	75	238,933	238,933	100	0	0	0	0	
Cedar Creek Reservoir in Trinity	76	644,686	615,108	95	53,694	8	-29,256	-5	
Athens, Lake	77	29,435	29,435	100	592	2	0	0	
Palestine, Lake	78	370,907	370,907	100	0	0	0	0	
Tyler, Lake	79	73,256	73,256	100	0	0	0	0	
Murvaul, Lake	80	38,284	38,284	100	0	0	0	0	
Jacksonville, Lake	81	30,300	30,300	100	68	0	0	0	
Nacogdoches, Lake	82	39,521	39,521	100	4,083	10	407	1	
Houston County Lake	83	17,113	17,113	100	0	0	0	0	
Sam Rayburn Reservoir	84	2,857,077	2,423,432	85	197,831	7	-303,238	-11	
Toledo Bend Reservoir (Texas)	85	2,236,450	2,161,175	97	176,147	8	-75,275	-3	
Toledo Bend Reservoir (TX & LA)	(85)	4,472,900	4,322,351	97	352,295	8	-150,549	-3	
*Livingston, Lake	86	1,741,867	1,741,867	100	0	0	0	0	
B A Steinhagen Lake	87	66,966	51,905	78	-1,660	-2	-8,508	-13	
Conroe, Lake	88	416,188	401,182	96	7,646	2	-14,226	-3	
TOTAL		9,814,609	9,242,348	94	460,049	5	-433,792	-4	
TRANS-PECOS									
Red Bluff Reservoir	89	289,670	78,323	27	-1,654	-1	-24,765	-9	
TOTAL		289,670	78,323	27	-1,654	-1	-24,765	-9	

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

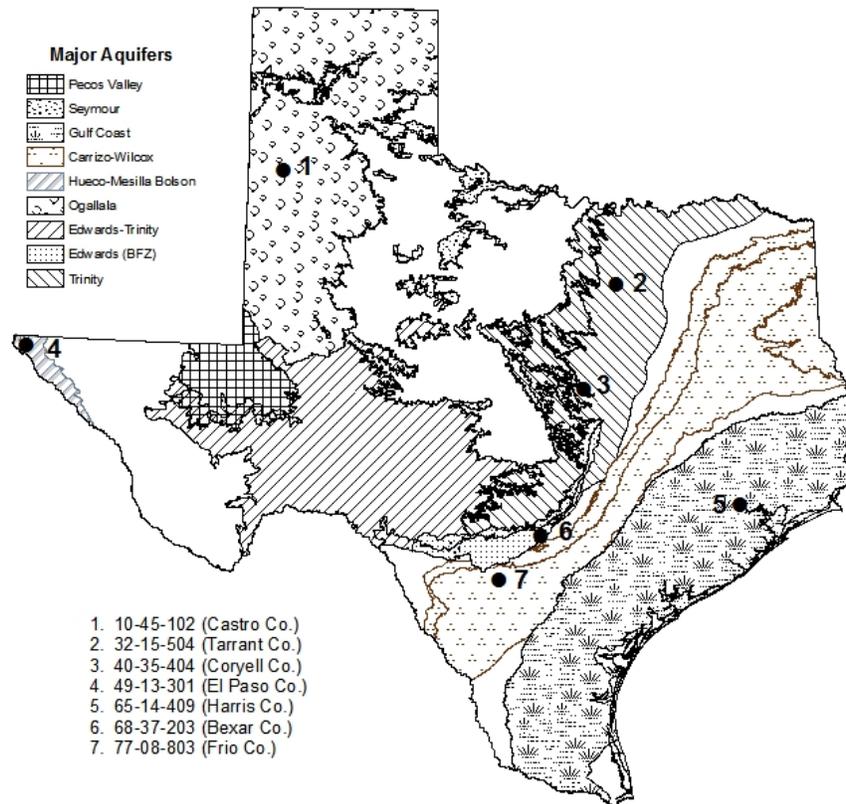
Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage		Change since Late February 2009		Change since Late March 2008		
			Late Mar. (acre-feet)	2009 (%)	(acre-feet)	(%)	(acre-feet)	(%)	
EDWARDS PLATEAU									
Oak Creek Reservoir	90	39,260	28,999	74	-499	-1	-9,138	-23	
E V Spence Reservoir	91	517,272	47,920	9	-2,328	0	-23,520	-5	
O C Fisher Lake	92	79,483	0	0	0	0	0	0	
*O H Ivie Reservoir	93	554,335	293,178	53	-5,276	-1	-86,038	-16	
Twin Buttes Reservoir	94	177,850	45,181	25	-228	0	-28,465	-16	
Brady Creek Reservoir	95	29,110	13,835	48	24	0	-2,027	-7	
Buchanan, Lake	96	875,610	564,553	64	-8,090	-1	-262,783	-30	
Lyndon B Johnson, Lake	97	113,690	110,733	97	-2,121	-2	-1,799	-2	
*Amistad Reservoir (Texas)	98	1,840,849	1,882,000	102	-13,000	-1	-395,000	-21	
*Amistad Reservoir (TX & Mexico)	(98)	3,275,532	3,275,532	100	0	0	418,532	13	
TOTAL		4,227,459	2,986,399	71	-31,518	-1	-808,770	-19	
SOUTH CENTRAL									
Travis, Lake	99	1,113,902	690,283	62	4,627	0	-411,951	-37	
*Austin, Lake	100	21,804	21,047	97	75	0	-318	-1	
Somerville Lake	101	147,104	114,290	78	572	0	-32,814	-22	
Canyon Lake	102	378,781	289,643	76	-830	0	-89,056	-24	
Medina Lake	103	254,823	124,837	49	-5,976	-2	-102,334	-40	
*Coletto Creek Reservoir	104	31,040	23,955	77	604	2	-6,756	-22	
TOTAL		1,947,454	1,264,055	65	-928	0	-643,229	-33	
UPPER COAST									
Houston, Lake	105	128,863	128,863	100	0	0	0	0	
Texana, Lake	106	153,246	92,447	60	-8,653	-6	-52,274	-34	
TOTAL		282,109	221,310	78	-8,653	-3	-52,274	-19	
SOUTHERN									
Choke Canyon Reservoir	107	695,262	543,168	78	-9,506	-1	-126,231	-18	
Corpus Christi, Lake	108	256,961	149,809	58	-12,036	-5	-97,757	-38	
*Falcon Reservoir (Texas)	109	1,551,034	1,532,000	99	-31,000	-2	436,000	28	
*Falcon Reservoir (TX & Mexico)	(109)	2,646,817	2,646,817	100	0	0	1,343,817	51	
TOTAL		2,503,257	2,224,977	89	-52,542	-2	212,012	8	
STATE TOTAL		31,068,501	25,348,949	82	539,569	2	-3,359,594	-11	

* Conservation volume is used as conservation storage capacity because the dead storage is unknown.

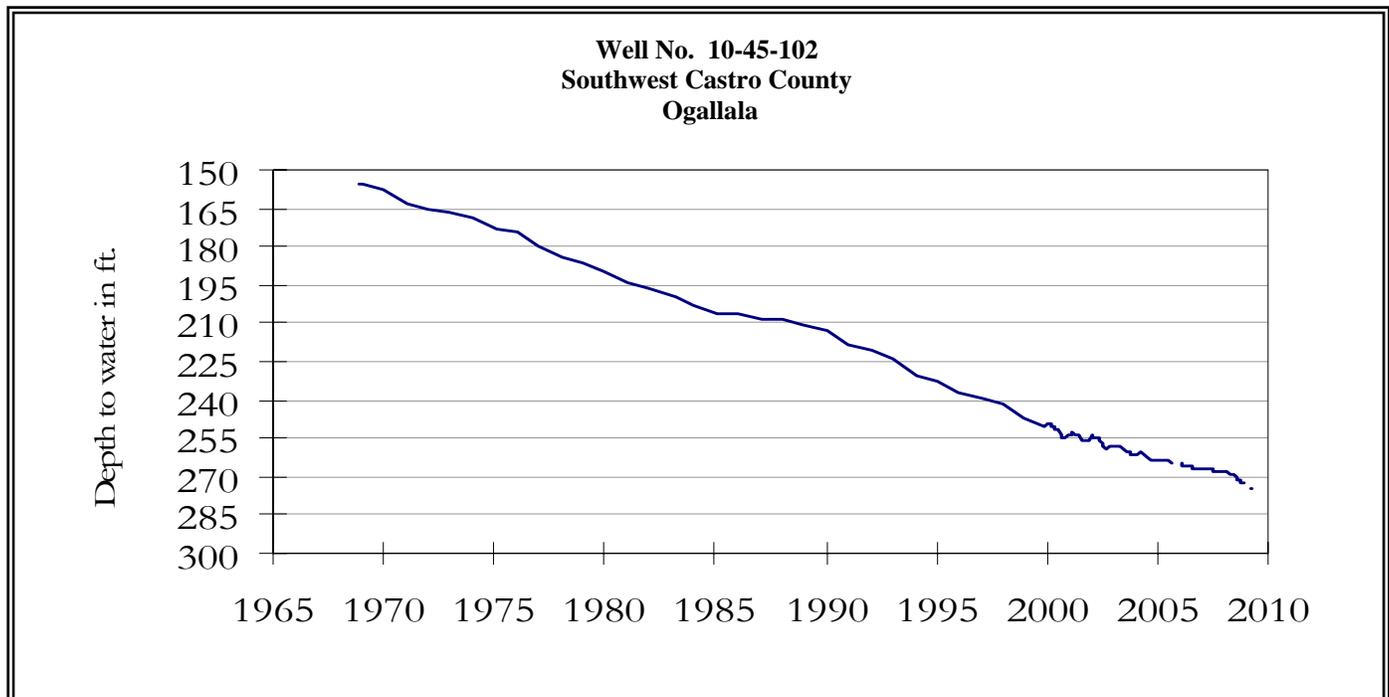
Note

Conservation storage capacity is the space available to store water above the lowest outlet and below the 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 the dead storage. Conservation storage percentage is based on the conservation storage capacity of the reservoir and the conservation storage in the reservoir on date shown. Percent change is given by $100 \times (\text{current conservation storage} - \text{past conservation storage}) / \text{conservation storage capacity}$. Figures shown are for the Texas share of conservation storage in all reservoirs.

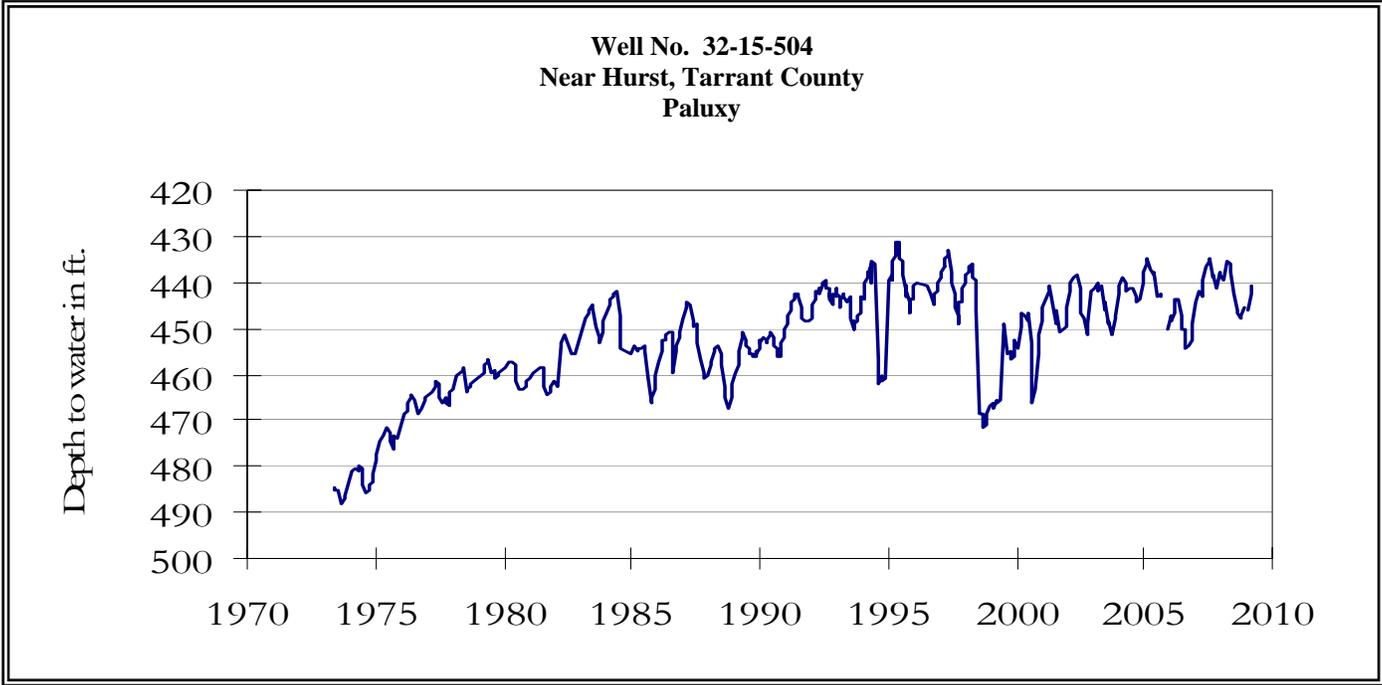
GROUND WATER LEVELS IN OBSERVATION WELLS



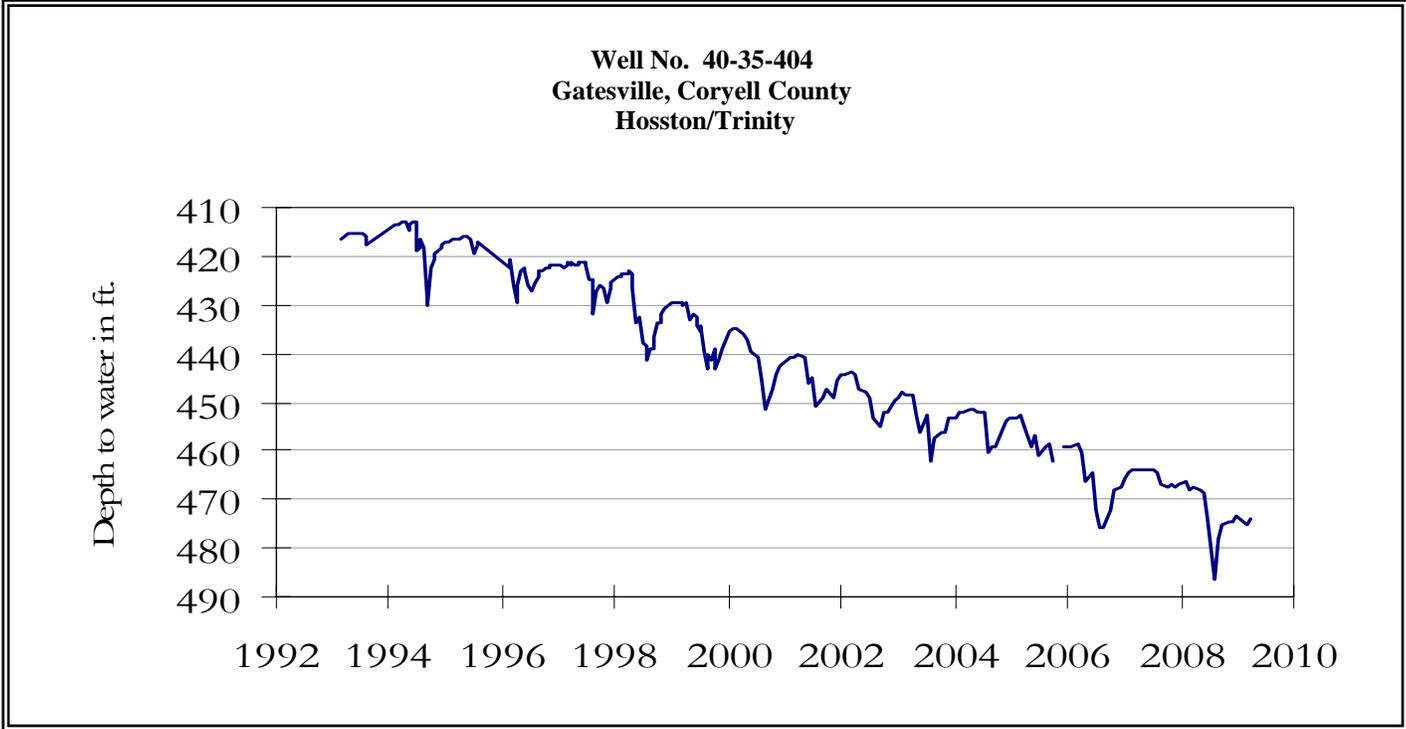
MARCH GROUNDWATER LEVELS IN OBSERVATION WELLS



The late March water level measurement in this Ogallala Aquifer well, elevation 3,816 feet above sea level, was 274.52 feet below land surface. This measurement was 0.20 feet above last month's measurement, 5.90 feet below last year's measurement, and 118.52 feet below the initial measurement recorded in 1968. No water level measurements were recorded for September through December 2005, December 2008, and January 2009.

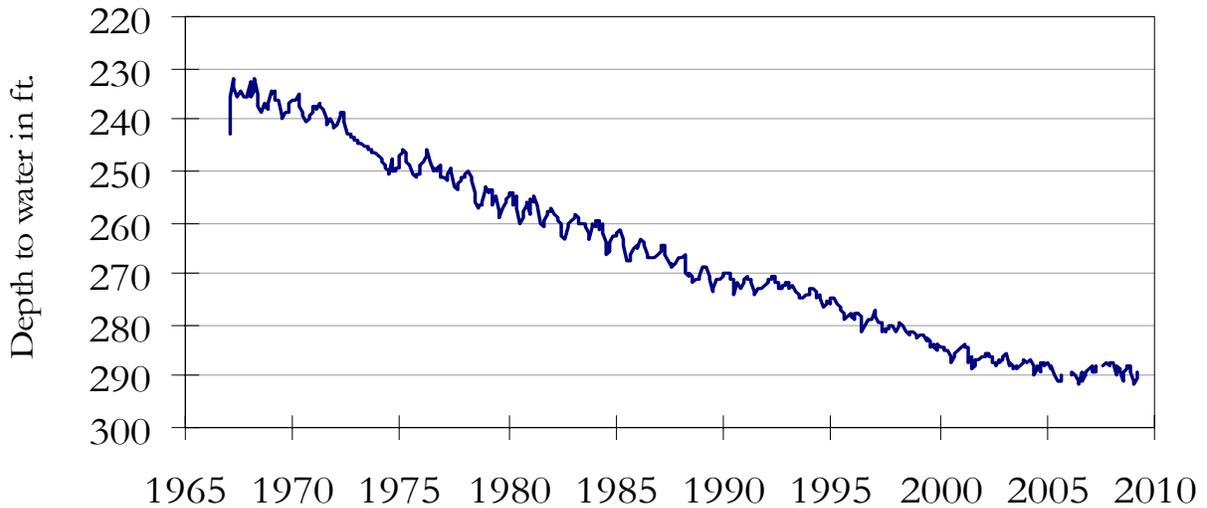


The late March water level measurement in this Paluxy Formation Trinity Aquifer well, elevation 535 feet above sea level, was 440.56 feet below land surface. This measurement was 2.10 feet above last month's measurement, 5.21 feet below last year's measurement, and 62.56 feet below the initial measurement recorded in 1953. No water level measurements were recorded for September or October 2005 and December 2008.



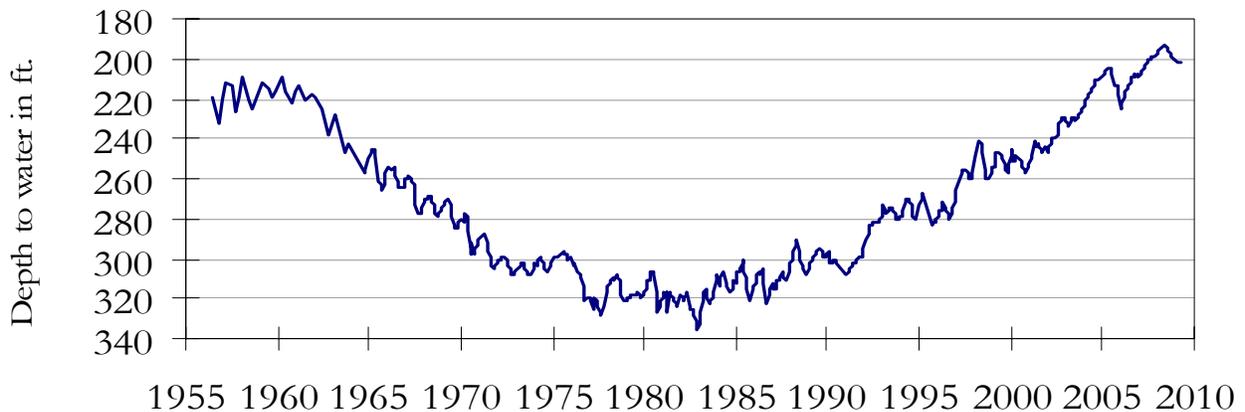
The late March water level measurement in this Hosston Formation Trinity Aquifer well, elevation 823 feet above sea level, was 473.95 feet below land surface. This water level was 1.29 feet above last month's measurement, 6.55 feet below last year's measurement, and 181.95 feet below the initial measurement recorded in 1955. No water level measurement was recorded for October 2005.

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



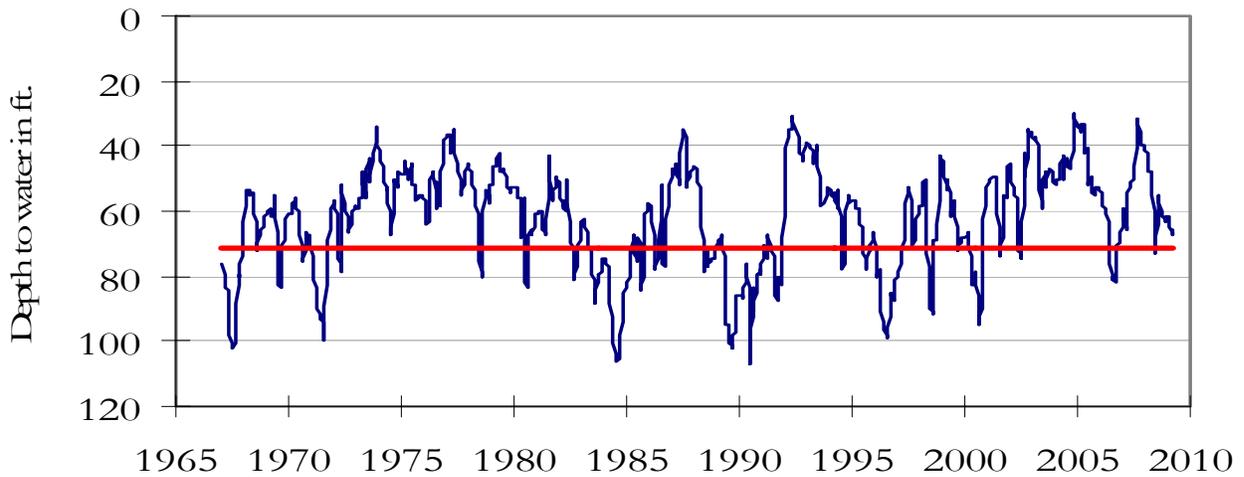
The late March water level measurement in this Hueco Bolson Aquifer well, elevation 3,882 feet above sea level, was 289.45 feet below land surface. This water level was 1.07 feet above last month's measurement, 1.18 feet below last year's measurement, and 57.55 feet below the initial measurement in 1964. No water level measurements were recorded for May through July 2007, and October or December 2005.

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



The late March water level measurement in this Evangeline Formation Gulf Coast Aquifer well, elevation 66 feet above sea level, was 202.54 feet below land surface. This was 0.85 feet below last month's measurement, 8.55 feet below last year's measurement, and 67.04 feet below the initial measurement recorded in 1947.

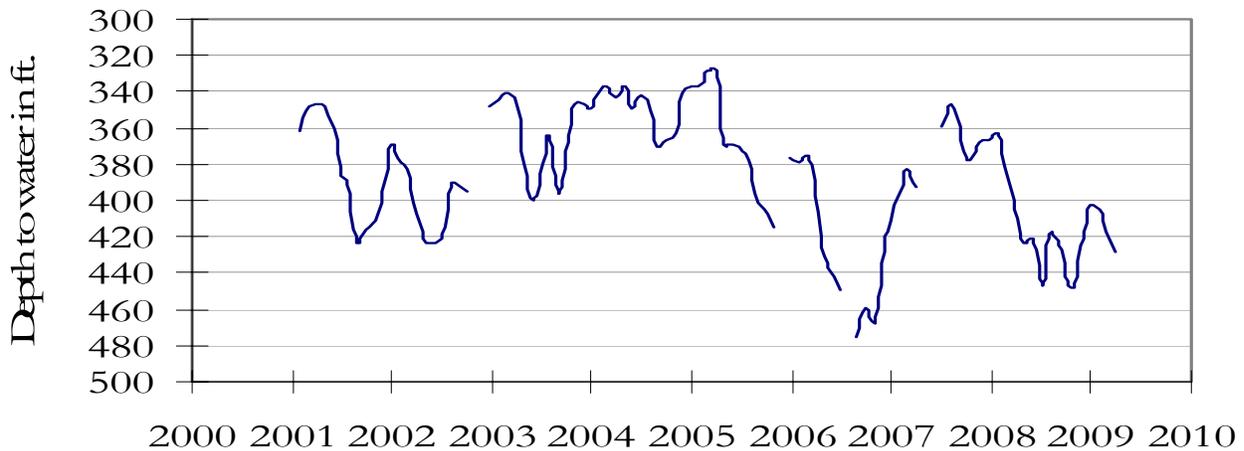
Well No. 68-37-203 (J-17)
In San Antonio, Bexar County
Edwards and Associated Limestones



The late March water level measurement in this Edwards (BFZ) Aquifer well, elevation 731 feet above sea level, was 65.45 feet below land surface. This was 1.89 feet above last month's measurement, 17.55 feet below last year's measurement, and 18.81 feet below the initial measurement recorded in 1962.

***** Water levels below the red line indicate Edwards Aquifer Authority Stage 1 drought restrictions. *****

Well No. 77-08-803
Pearsall, Frio County
Carrizo



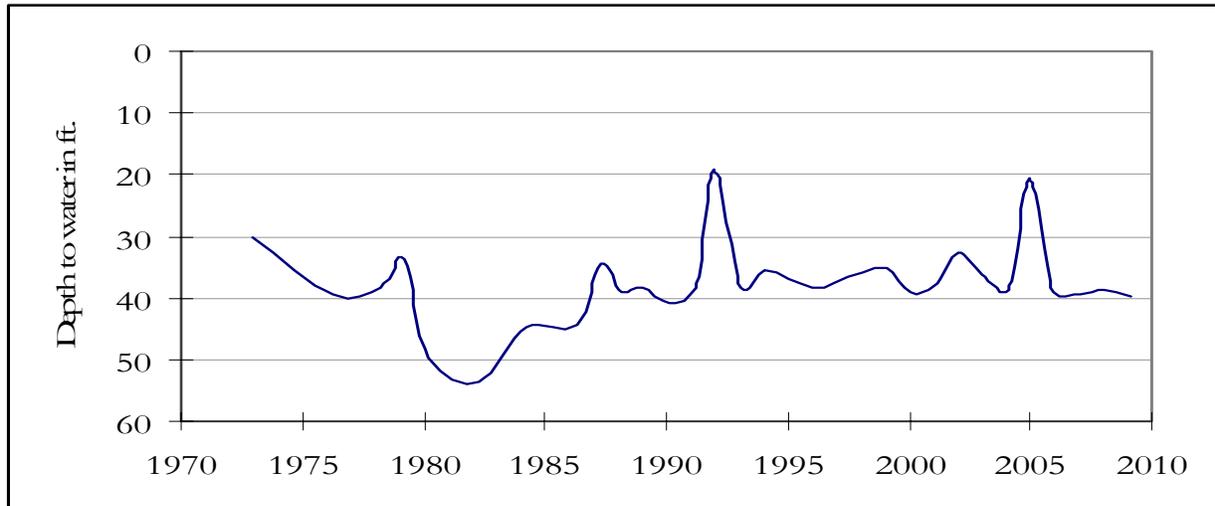
The late March water level measurement in this Carrizo-Wilcox Aquifer well, elevation 652 feet above sea level, was 428.22 feet below land surface. This was 11.50 feet below last month's measurement, 18.90 feet below last year's measurement, and 148.22 feet below the initial measurement recorded in 1963. No water level measurements were recorded for April and May 2007, July 2006, November 2005, and October through November 2002.

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 57-31-402 Burnet County



This water level observation well, located 2 miles east of Marble Falls, at an elevation of 840 feet ASL, was completed in the Marble Falls aquifer. Numerous large springs issue from the aquifer and provide a significant part of the base flow to the San Saba and Colorado rivers in McCulloch, San Saba, and Lampasas Counties.

March, 2009

Water level measurements were available for all seven key monitoring wells. Water levels rose in five of the seven monitoring wells since the beginning of March, ranging from 0.20 feet in the Castro Co. Ogallala well to 2.10 feet in the Tarrant Co. Trinity well. Water levels declined in the remaining monitoring wells, ranging from 0.85 feet in the Harris Co. Gulf Coast well to 11.50 feet in the Frio Co. Carrizo well. The J-17 well in San Antonio recorded a water level of 65.45 feet below land surface, 1.89 feet above last month's measurement. This water level is 5.55 feet above the Stage 1 critical management level.

*TEXAS WATER DEVELOPMENT BOARD
1700 N. CONGRESS AVE.
P.O. BOX 13231
AUSTIN TX 78711-3231*