Texas Water Development Board

WATER Conditions

RESERVOIR STORAGE

May 2011

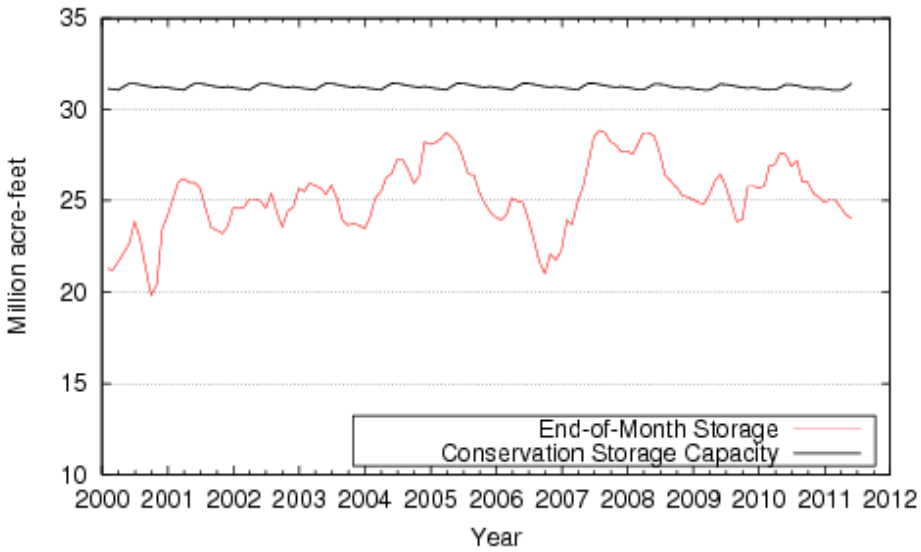
At the end of May, total storage in 109 of the state's major reservoirs was at 24.0 million acre-feet*, or 76% of the total conservation storage capacity. This is 0.21 million acre-feet less than a month ago.

Storage was at 100% in 7 reservoirs, two more than last month. Seven lakes were at or below 10% full: O. C. Fisher Lake Reservoir and Lake Meredith were effectively empty, E.V. Spence Reservoir was at 1%, Hords Creek Lake was at 2%, Lake J. B. Thomas and Lake Electra were at 3% full, and Twin Buttes was at 7%.

None of the regions had combined storage above 90%. The High Plains (3%) and Trans-Pecos regions (18%) remained very low. Over the month, storage declined in all regions except the North Central where the combined storage rose 256,564 acre-feet. Over the 12-month period, storage decreased in 8 regions.

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

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS



Figures are based on the 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. Reservoirs with a conservation storage capacity of 5,000 acre-feet or greater are included.

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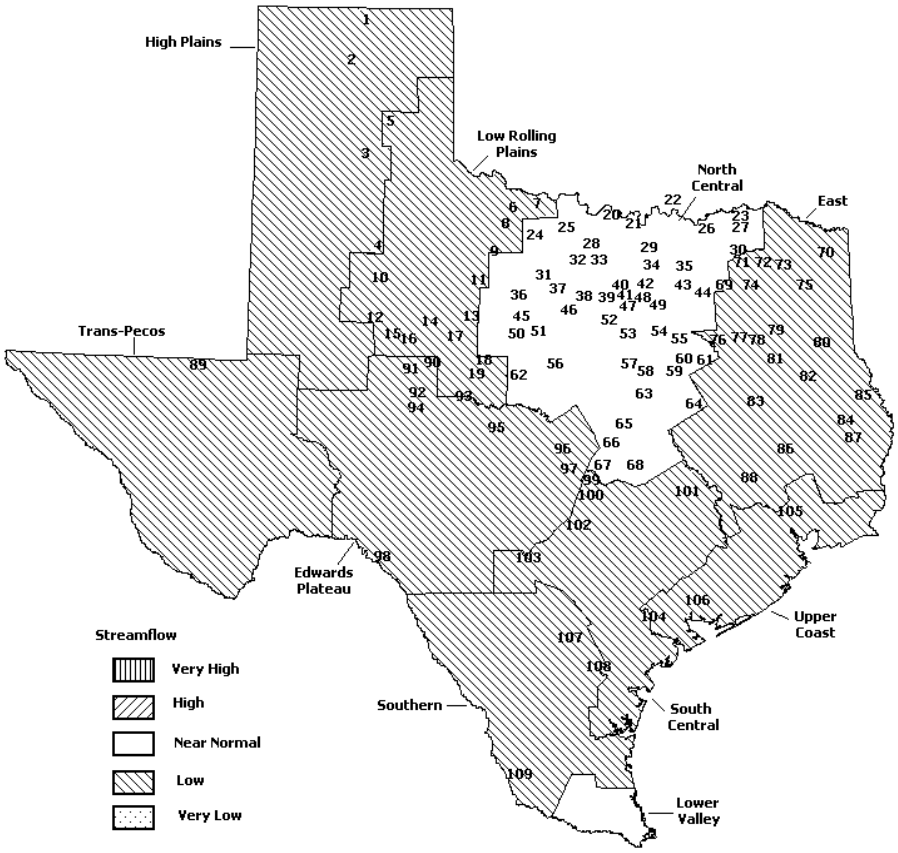
STREAMFLOW

Of 29 reporting index stations in May, computed 30-day mean flows were high (5% - 30%) at 1 station, low (70% - 95%) at 18 stations, very low (>95%) at 2 stations, and near normal (30% - 70%) at the remaining 8 stations. Compared to April, flows have increased at 8 index stations and decreased at 19 stations.

On a regional basis, flows in May were near normal in the North Central region but low everywhere else. Streamflow in the Lower Valley region is not monitored.

MAY 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. Waxahachie, 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. Brady 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. Coleto 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 Capacity (acre-feet)	Conservation Storage Late May 2011 (acre-feet)	(%)	Change since Late April 2011 (acre-feet)	(%)	Change since Late May 2010 (acre-feet)	(%)
HIGH PLAINS								
Palo Duro Reservoir	1	60,897	7,948	13	-1,173	-2	7,688	13
Meredith, Lake (Texas)	2	500,000	0	0	-1,792	0	-29,316	-6
Meredith, Lake (Texas & Oklahoma)	(2)	779,556	0	0	-1,792	0	-29,316	-4
MacKenzie Reservoir	3	46,429	5,385	12	-252	-1	-1,674	-4
White River Lake	4	29,880	8,233	28	-762	-3	3,844	13
TOTAL		637,206	21,566	3	-3,979	-1	-19,458	-3
LOW ROLLING PLAINS								
Greenbelt Lake	5	59,500	14,758	25	-777	-1	-2,877	-5
*Electra, Lake	6	5,626	179	3	-62	-1	-480	-9
N. Fork Buffalo Crk Reservoir	7	15,400	4,507	29	-532	-3	-2,372	-15
Kemp, Lake	8	245,308	184,780	75	-15,589	-6	-60,528	-25
Millers Creek Reservoir	9	27,888	15,823	57	-999	-4	-4,840	-17
Alan Henry Reservoir	10	94,808	84,328	89	-1,639	-2	-10,426	-11
Stamford, Lake	11	51,570	41,378	80	-3,232	-6	-10,192	-20
J B Thomas, Lake	12	199,931	6,837	3	-1,202	-1	-8,715	-4
Fort Phantom Hill, Lake	13	70,030	50,992	73	-3,049	-4	-5,572	-8
Sweetwater, Lake	14	10,006	4,818	48	-313	-3	-1,892	-19
Colorado City, Lake	15	31,793	12,825	40	-602	-2	-4,596	-14
Champion Creek Reservoir	16	41,618	5,969	14	-304	-1	-1,740	-4
Abilene, Lake	17	6,099	3,699	61	-426	-7	-2,371	-39
Coleman, Lake	18	38,076	19,128	50	-525	-1	-6,459	-17
Hords Creek Lake	19	5,684	98	2	68	1	-1,145	-20
TOTAL		903,337	450,119	50	-29,183	-3	-124,205	-14
NORTH CENTRAL								
Nocona, Lake (Farmers Crk)	20	21,445	16,999	79	-357	-2	-4,446	-21
Hubert H Moss Lake	21	24,058	23,972	100	43	0	43	0
Texoma, Lake (Texas)	22	1,334,294	1,218,783	91	67,422	5	-114,742	-9
Texoma, Lake (Texas & Oklahoma)	(22)	2,668,589	2,437,566	91	134,844	5	-229,485	-9
*Pat Mayse Lake	23	117,844	117,844	100	9,723	8	0	0
Kickapoo, Lake	24	85,825	60,794	71	-2,755	-3	-21,907	-26
Arrowhead, Lake	25	235,997	171,747	73	-5,505	-2	-55,994	-24
Bonham, Lake	26	11,026	11,026	100	597	5	628	6
Crook, Lake	27	9,195	9,050	98	-145	-2	393	4
Amon G Carter, Lake	28	19,903	16,178	81	-284	-1	-3,725	-19
Ray Roberts, Lake	29	798,758	770,514	96	22,575	3	-24,748	-3
Jim Chapman Lake (Cooper)	30	260,332	176,734	68	42,741	16	-70,400	-27
Graham, Lake	31	45,260	38,651	85	-1,451	-3	-6,609	-15
*Lost Creek Reservoir	32	11,950	10,571	88	-103	-1	-1,369	-11
Bridgeport, Lake	33	366,236	307,637	84	-1,845	-1	-58,599	-16
Lewisville Lake	34	563,228	562,428	100	40,974	7	1,600	0
Lavon Lake	35	443,844	402,711	91	64,674	15	-33,989	-8
Hubbard Creek Reservoir	36	318,067	174,453	55	-6,667	-2	-43,567	-14
Possum Kingdom Lake	37	540,340	487,815	90	-11,084	-2	-33,140	-6
*Mineral Wells, Lake	38	7,065	5,790	82	-177	-3	-1,220	-17
Weatherford, Lake	39	17,789	12,981	73	-389	-2	-4,679	-26
Eagle Mountain Lake	40	179,880	157,096	87	1,062	1	-22,784	-13
Worth, Lake	41	24,500	17,884	73	-812	-3	-6,481	-26
Grapevine Lake	42	164,702	164,702	100	7,045	4	0	0
Ray Hubbard, Lake	43	452,040	427,371	95	28,364	6	-10,240	-2
New Terrell City Lake	44	8,583	7,502	87	105	1	-1,021	-12
Daniel, Lake	45	9,435	3,467	37	-291	-3	-3,232	-34
Palo Pinto, Lake	46	26,827	25,684	96	-1,143	-4	-1,035	-4
Benbrook Lake	47	85,648	84,454	99	2,206	3	-1,194	-1
Arlington, Lake	48	40,156	38,838	97	4,677	12	1,196	3

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage Late May 2011 (acre-feet)	(%)	Change since Late April 2011 (acre-feet)	(%)	Change since Late May 2010 (acre-feet)	(%)
NORTH CENTRAL (Continue)								
Joe Pool Lake	49	142,861	142,122	99	959	1	-739	-1
*Cisco, Lake	50	26,000	13,146	51	-211	-1	-3,176	-12
Leon, Lake	51	26,421	14,770	56	-453	-2	-4,766	-18
Granbury, Lake	52	128,046	122,005	95	-2,869	-2	-2,038	-2
Pat Cleburne, Lake	53	26,008	23,437	90	-151	-1	-2,524	-10
Waxahachie, Lake	54	10,779	9,508	88	157	1	-1,271	-12
Bardwell Lake	55	46,122	44,110	96	-1,052	-2	-2,012	-4
Proctor Lake	56	55,457	33,009	60	692	1	-18,844	-34
Whitney, Lake	57	553,349	354,154	64	-8,144	-1	-170,083	-31
Aquilla Lake	58	44,460	41,431	93	-355	-1	-3,029	-7
Navarro Mills Lake	59	49,826	46,958	94	-1,565	-3	-2,682	-5
*Halbert, Lake	60	6,033	3,301	55	-220	-4	-1,796	-30
Richland-Chambers Reservoir	61	1,087,839	963,257	89	-17,612	-2	-120,341	-11
*Brownwood, Lake	62	131,429	70,061	53	-2,241	-2	-31,375	-24
Waco, Lake	62	198,943	185,326	93	-4,713	-2	-13,617	-7
Limestone, Lake	64	208,015	171,315	82	3,861	2	-32,674	-16
Belton Lake	65	435,225	394,745	91	6,640	2	-18,355	-4
Stillhouse Hollow Lake	66	227,771	216,444	95	-3,316	-1	-11,327	-5
Georgetown, Lake	67	36,823	24,636	67	-2,829	-8	-12,187	-33
Granger Lake	68	50,779	47,675	94	-2,228	-4	4,569	9
Tawakoni, Lake	69	888,126	797,052	90	33,014	4	-89,168	-10
TOTAL		10,604,539	9,242,138	87	256,564	2	-1,058,696	-10
EAST								
Wright Patman Lake	70	307,973	307,973	100	61,385	20	19,043	6
*Sulphur Springs, Lake	71	17,838	11,786	66	654	4	-6,052	-34
Cypress Springs, Lake	72	66,756	63,153	95	-566	-1	-3,539	-5
Bob Sandlin, Lake	73	200,579	166,061	83	-5,962	-3	-33,613	-17
Fork Reservoir, Lake	74	604,927	515,245	85	-2,682	0	-89,682	-15
O the Pines, Lake	75	267,672	241,361	90	2,428	1	-2,801	-1
Cedar Creek Reservoir in Trinity	76	644,686	543,476	84	-7,351	-1	-92,851	-14
Athens, Lake	77	29,435	27,051	92	-644	-2	-2,007	-7
Palestine, Lake	78	370,907	325,044	88	-9,045	-2	-33,475	-9
Tyler, Lake	79	73,256	60,328	82	-4,810	-7	-11,328	-15
Murvaul, Lake	80	38,284	31,474	82	-579	-2	-5,685	-15
Jacksonville, Lake	81	25,670	23,732	92	-357	-1	-1,354	-5
Nacogdoches, Lake	82	39,521	26,530	67	-824	-2	-10,382	-26
Houston County Lake	83	17,113	16,731	98	-115	-1	-128	-1
Sam Rayburn Reservoir	84	2,857,077	2,005,303	70	-5,424	0	-698,048	-24
Toledo Bend Reservoir (Texas)	85	2,236,450	1,564,245	70	-20,619	-1	-467,429	-21
Toledo Bend Reservoir (TX & LA)	(85)	4,472,900	3,128,490	70	-41,239	-1	-934,859	-21
*Livingston, Lake	86	1,741,867	1,741,867	100	0	0	0	0
B A Steinhagen Lake	87	66,966	62,026	93	-907	-1	-403	-1
Conroe, Lake	88	416,188	369,024	89	-8,523	-2	-39,368	-9
TOTAL		10,023,165	8,102,410	81	-3,941	0	-1,479,102	-15
TRANS-PECOS								
Red Bluff Reservoir	89	289,670	52,621	18	-8,042	-3	-8,078	-3
TOTAL		289,670	52,621	18	-8,042	-3	-8,078	-3

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

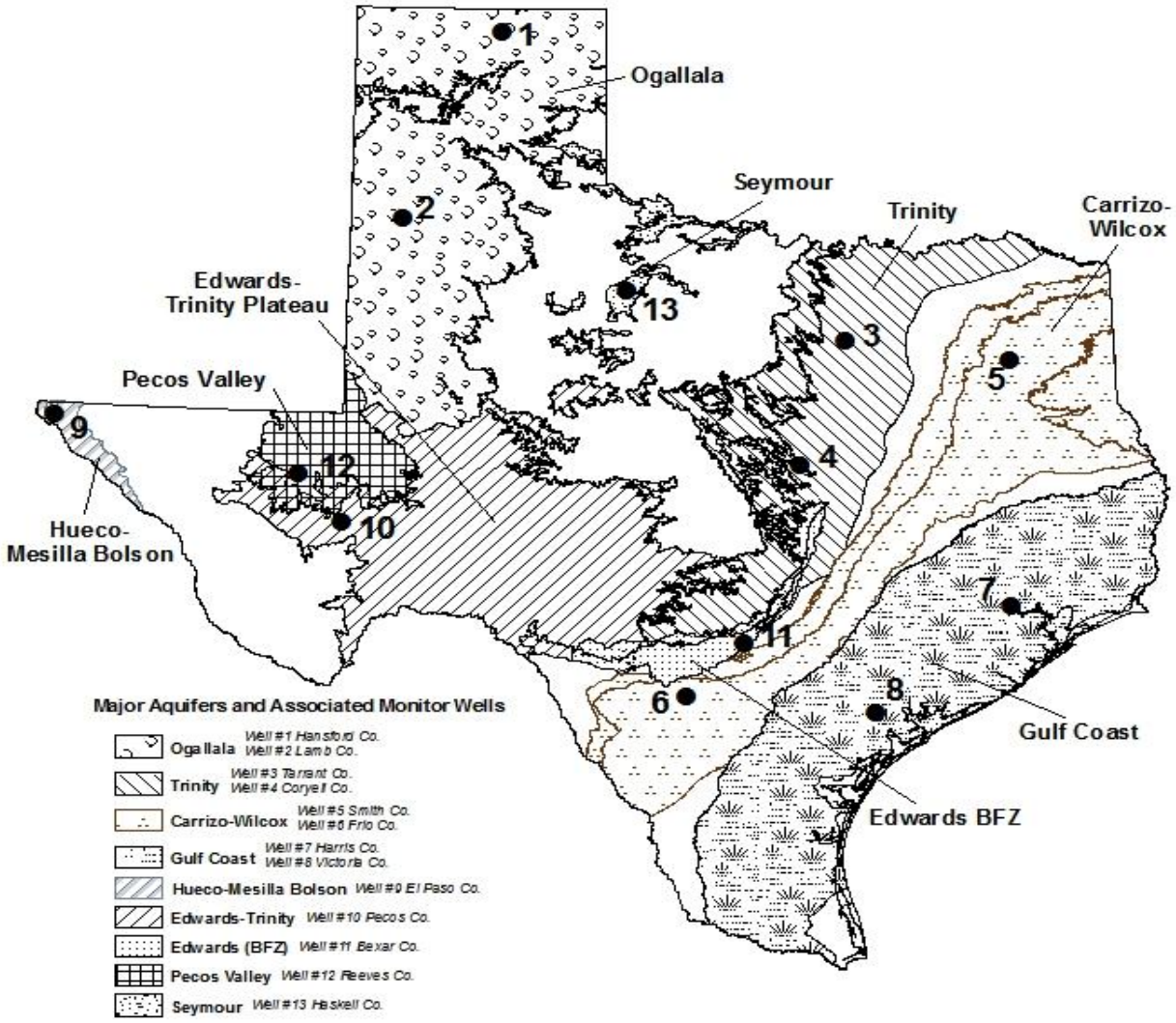
Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage Late May 2011 (acre-feet)	(%)	Change since Late April 2011 (acre-feet)	(%)	Change since Late May 2010 (acre-feet)	(%)
EDWARDS PLATEAU								
Oak Creek Reservoir	90	39,260	20,121	51	-1,039	-3	-6,306	-16
E V Spence Reservoir	91	517,272	7,089	1	-2,039	0	-19,310	-4
O C Fisher Lake	92	79,483	0	0	0	0	0	0
*O H Ivie Reservoir	93	554,335	149,802	27	-7,995	-1	-83,808	-15
Twin Buttes Reservoir	94	177,850	13,300	7	-3,286	-2	-22,759	-13
Brady Creek Reservoir	95	29,110	10,866	37	-682	-2	-6,073	-21
Buchanan, Lake	96	875,610	626,945	72	-27,518	-3	-65,502	-7
Lyndon B Johnson, Lake	97	113,323	111,318	98	668	1	425	0
*Amistad Reservoir (Texas)	98	1,840,849	1,784,000	97	-51,000	-3	9,000	0
*Amistad Reservoir (TX & Mexico)	(98)	3,275,532	3,201,000	98	-66,000	-2	9,000	0
TOTAL		4,227,092	2,723,441	64	-92,891	-2	-194,333	-5
SOUTH CENTRAL								
Travis, Lake	99	1,113,255	636,876	57	-92,964	-8	-447,509	-40
*Austin, Lake	100	21,804	20,476	94	-465	-2	-465	-2
Somerville Lake	101	147,104	110,762	75	-2,956	-2	-35,381	-24
Canyon Lake	102	378,781	349,891	92	-5,334	-1	-28,890	-8
Medina Lake	103	254,823	125,777	49	-14,494	-6	-59,742	-23
*Coleto Creek Reservoir	104	31,040	27,108	87	-1,798	-6	-3,932	-13
TOTAL		1,946,807	1,270,890	65	-118,011	-6	-575,919	-30
UPPER COAST								
Houston, Lake	105	128,863	112,900	88	-12,100	-9	-15,963	-12
Texana, Lake	106	153,246	98,756	64	-5,421	-4	-51,556	-34
TOTAL		282,109	211,656	75	-17,521	-6	-67,519	-24
SOUTHERN								
Choke Canyon Reservoir	107	695,262	514,020	74	-14,695	-2	-105,909	-15
Corpus Christi, Lake	108	256,961	181,895	71	-14,729	-6	-54,699	-21
*Falcon Reservoir (Texas)	109	1,551,034	1,247,000	80	-163,000	-11	195,000	13
*Falcon Reservoir (TX & Mexico)	(109)	2,646,817	1,696,000	64	-590,000	-22	46,000	2
TOTAL		2,503,257	1,942,915	78	-192,424	-8	34,392	1
STATE TOTAL		31,417,182	24,017,756	76	-209,428	-1	-3,492,918	-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*(current conservation storage - past conservation storage)/conservation storage capacity. Figures shown are for the Texas share of conservation storage in all reservoirs.

GROUNDWATER LEVELS IN OBSERVATION WELLS



May, 2011

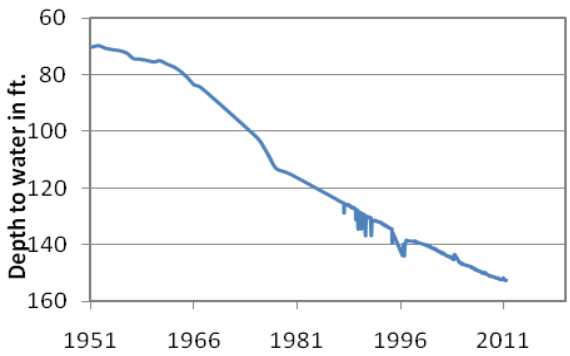
Water level measurements were available for twelve of thirteen key monitoring wells. The Frio County well data is unavailable. Water levels rose in four of the monitoring wells since the beginning of May ranging from 0.27 feet in the Hansford County Ogallala Aquifer well to 2.73 feet in the Tarrant County Trinity Aquifer well. Water levels declined in the remaining eight monitoring wells, ranging from 0.09 feet in the Lamb County Ogallala Aquifer well to 10.64 feet in the Pecos County Edwards-Trinity Plateau Aquifer well. The J-17 well in San Antonio recorded a water level of 83.97 feet below land surface. This water level is 2.97 feet below the Stage II critical management level in that segment of the Edwards Aquifer. Stage II restrictions were triggered on June 1, 2011 by the E.A.A. after the 10 day average of water levels fell below 650 foot elevation or 81 feet below land surface.

	(1) Hansford 0354301	(2) Lamb 1053602	(3) Tarrant 3215504	(4) Coryell 4035404	(5) Smith 3430907	(6) Frio 7708803	(7) Harris 6514409	(8) Victoria 8017502	(9) El Paso 4913301	(10) Pecos 5216802	(11) Bexar 6837203	(12) Reeves 4644501	(13) Haskell 2135748
May 2011	152.47	138.66	445.61	487.13	430.58	N/A	193.72	31.63	290.20	225.06	83.97	148.77	46.62
April 2011	152.74	138.57	448.34	482.76	430.36	N/A	195.06	31.19	291.03	214.42	77.16	146.36	45.70
Month Change	0.27	-0.09	2.73	-4.37	-0.22	N/A	1.34	-0.44	0.83	-10.64	-6.81	-2.41	-0.92
Year Change	-0.25	-0.93	-2.90	-9.41	-0.21	N/A	7.66	1.45	1.21	-8.14	-33.57	-0.82	-2.55
Historical Change	-82.35	-110.51	-67.61	-195.13	-64.58	-163.99	-58.22	2.37	-58.30	21.82	-37.33	-56.68	-5.29

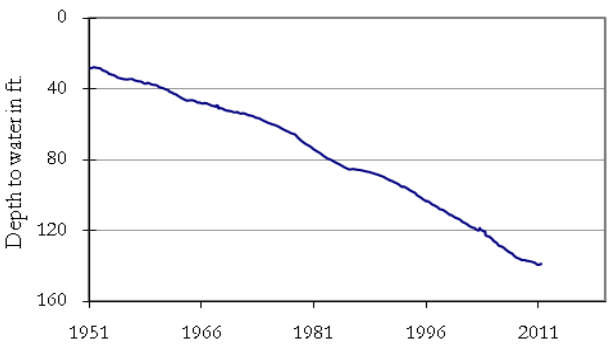
*** ID is used in this publication to differentiate between the monitoring well number (1 - 13) as displayed on the aquifer map and the TWDB's six- or seven-digit state well "identification" number.**

MAY GROUNDWATER LEVELS IN OBSERVATION WELLS

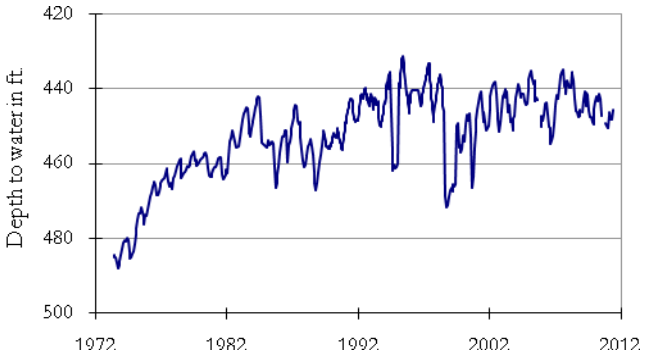
(1) State Well ID 03-54-301
Near Spearman, Hansford County
Ogallala Aquifer



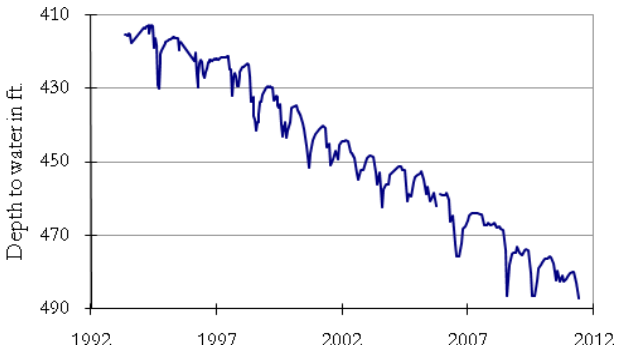
(2) State Well ID 10-53-602
Near Earth, Lamb County
Ogallala Aquifer



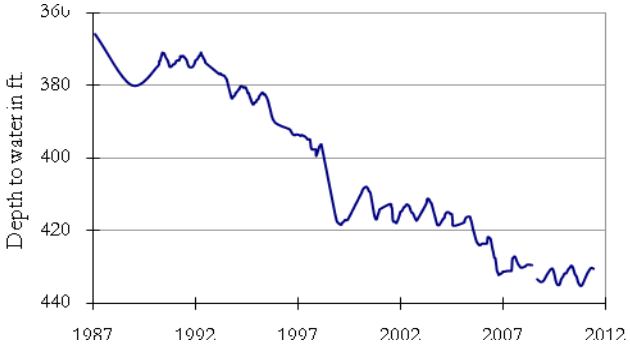
(3) State Well ID 32-15-504
Near Hurst, Tarrant County
Paluxy Formation-Trinity Aquifer



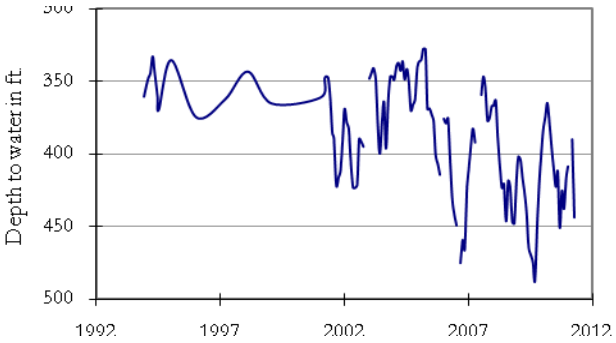
(4) State Well ID 40-35-404
Gatesville, Coryell County
Hosston Formation-Trinity Aquifer



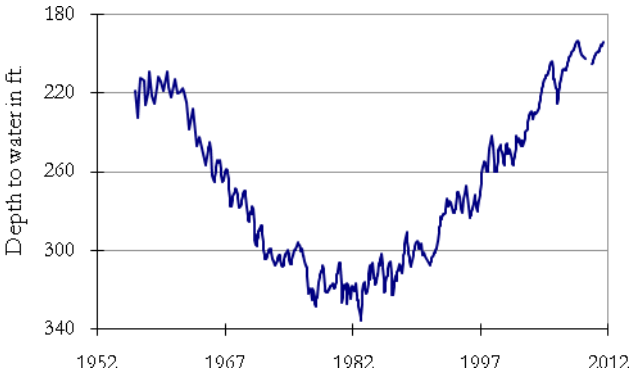
(5) State Well ID 34-30-907
Red Springs, Smith County
Carrizo-Wilcox Aquifer



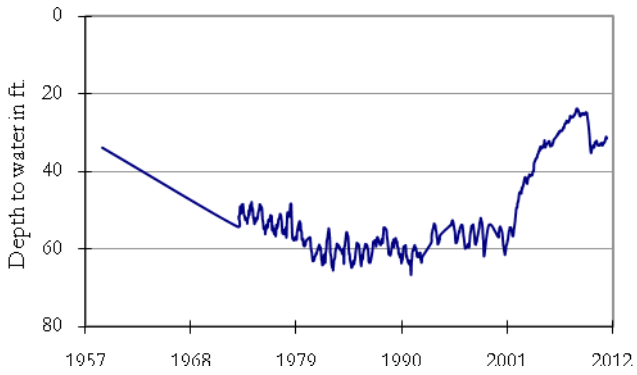
(6) State Well ID 77-08-803
Pearsall, Frio County
Carrizo-Wilcox Aquifer



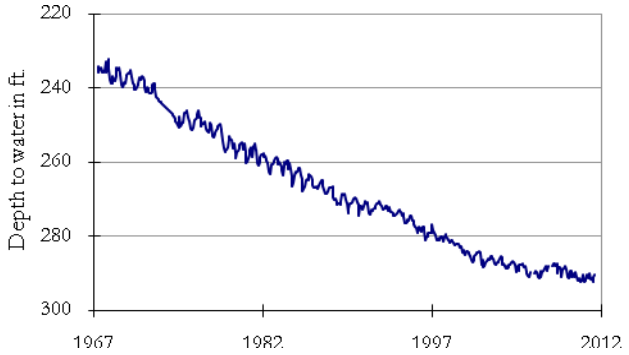
(7) State Well ID 65-14-409
Alief, Harris County
Evangeline Formation-Gulf Coast Aquifer



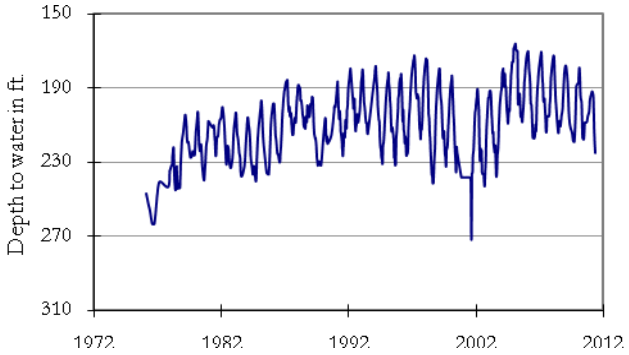
(8) State Well ID 80-17-502
Near Bloomington, Victoria County
Lissie Formation-Gulf Coast Aquifer



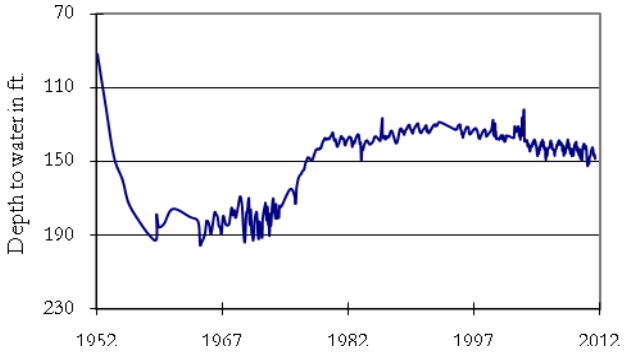
(9) State Well ID 49-13-301
El Paso, El Paso County
Hueco-Mesilla Bolson Aquifer



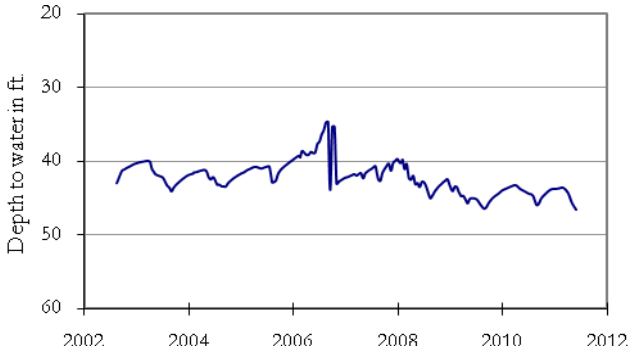
(10) State Well ID 52-16-802
Fort Stockton, Pecos County
Edwards-Trinity (Plateau) Aquifer



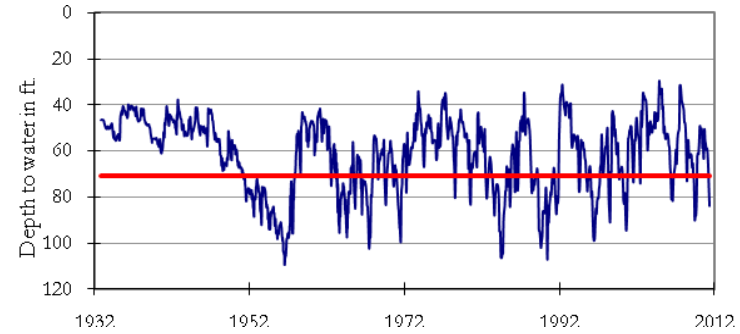
(12) State Well ID 46-44-501
Near Pecos, Reeves County
Pecos Valley Aquifer

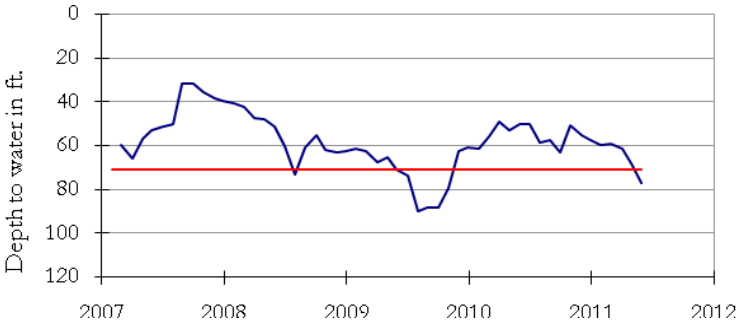


(13) State Well ID 21-35-748
Near O'Brien, Haskell County
Seymour Aquifer



(11) State Well ID 68-37-203 (J-17)
In San Antonio, Bexar County
Edwards (BFZ) Aquifer

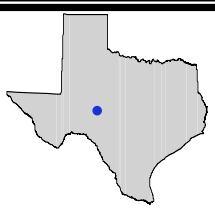




The late May water level measurement in this Edwards (BFZ) Aquifer well, elevation 731 feet above sea level, was 83.97 feet below land surface. This was 6.81 feet below last month's measurement, 33.57 feet below last year's measurement, and 37.33 feet below the initial measurement recorded in 1932.

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

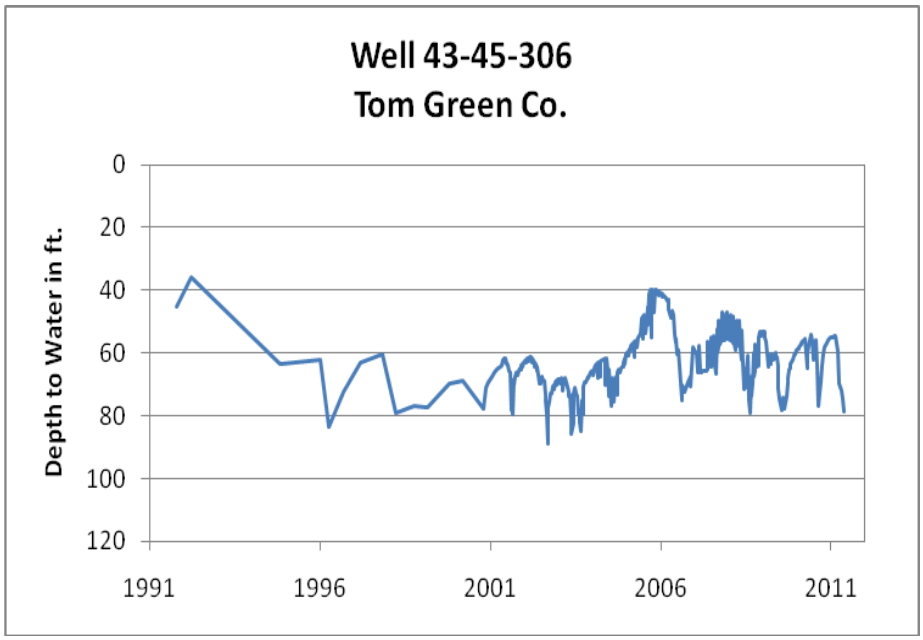
HYDROGRAPH OF THE MONTH



Each month this space features a new hydrograph (marked with the • symbol on the map) depicting different aquifers and different conditions in Texas.

Lipan Aquifer

The Lipan Aquifer is a minor aquifer found in west central Texas near San Angelo, TX. The aquifer is composed of Quaternary age alluvium overlying older westward dipping Permian strata. The alluvium includes up to 125 feet of saturated sediments of the Leona Formation, (the primary formation of the Lipan Aquifer) a fluvial terrace deposit of gravel, sand, silt, and clay. The much older underlying strata include sandstones, dolomite, marly limestone, red-clay shales and gypsum layers. Groundwater in the alluvium ranges from fresh to slightly saline, containing between 350 to 3,000 milligrams per liter of total dissolved solids and is very hard. The aquifer is primarily used for irrigation but also supports other uses. Beginning in the late 1990s a combination of drought and heavy irrigation pumping from the aquifer resulted in periods where the Lipan could not be pumped through the entire irrigation season, as it would not supply the needed quantity of water. During irrigation season levels drop by as much as 20 feet, as indicated in the accompanying hydrograph.



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