

RESERVOIR STORAGE

March 2013

At the end of the month, total storage in 115 of the state's major water supply reservoirs was at 20.55 million acre-feet*, or 66% of their total conservation storage capacity. This is 392,000 acre-feet less than a month ago and 3.95 million acre-feet less than storage at this time last year.

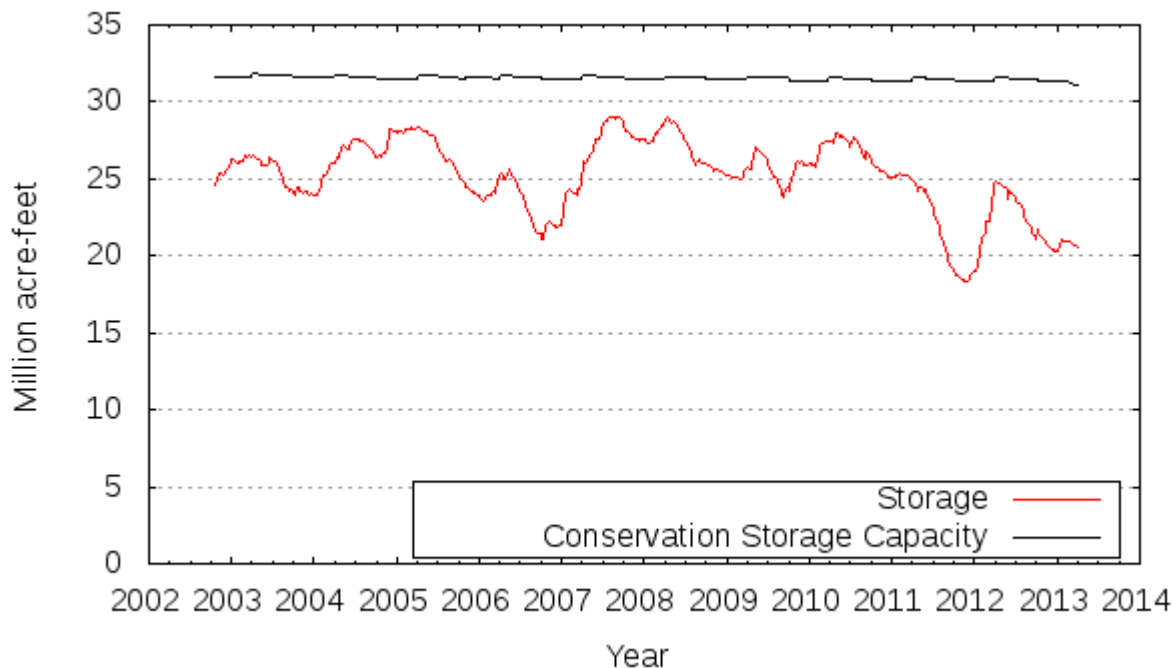
Nine reservoirs, all in the North Central and East regions, held 100% of conservation storage capacity. Twelve (12) reservoirs were at or below 10% full: O. C. Fisher, Electra, J. B. Thomas and Meredith were effectively empty, Twin Buttes was at 1%, Palo Duro was at 2%, White River was at 3%, North Fork Buffalo Creek and E.V. Spence were at 5%, Mackenzie was at 6%, Medina was at 7%, and Champion Creek Reservoir was at 8% full.

Total combined storage was greater than 70% in the North Central (75%), Upper Coast (89%), and East (91%) regions. The regions with the lowest percentage storage were the High Plains (1%) and Trans-Pecos regions (18%). Storage over the last month declined in 8 regions and increased in 1 region.

Elephant Butte reservoir held 220,000 acre-feet, or 11% of storage capacity. This is 13,228 acft more than a month ago.

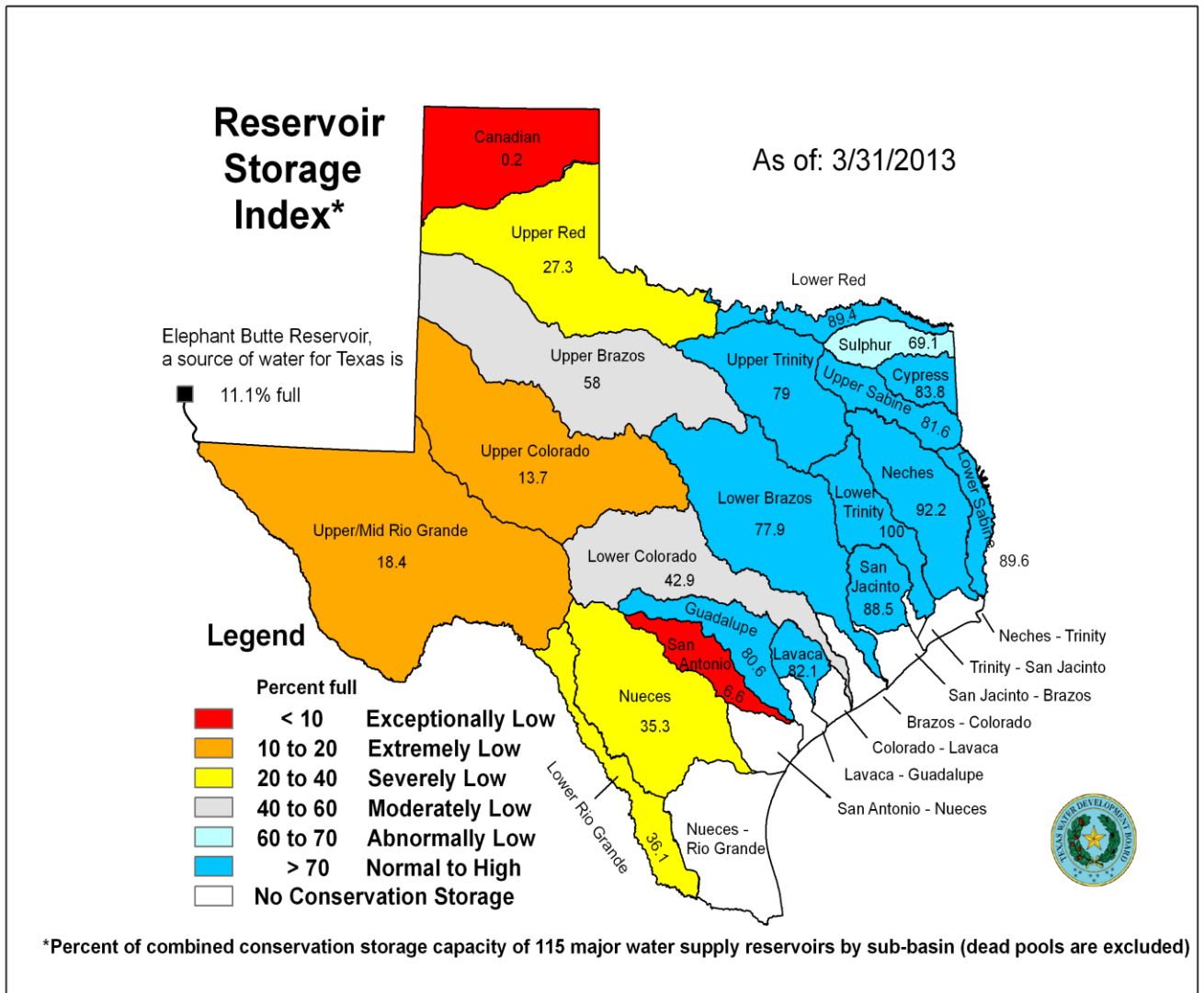
* Only the Texas share of storage in border reservoirs is counted.

CONSERVATION STORAGE DATA FOR



Figures are based on the end of the month data at 115 major reservoirs that represent 96 percent of the total conservation storage capacity of the 188 major water supply reservoirs in Texas. Major reservoirs are defined as having a conservation storage capacity of 5,000 acre-feet or greater.

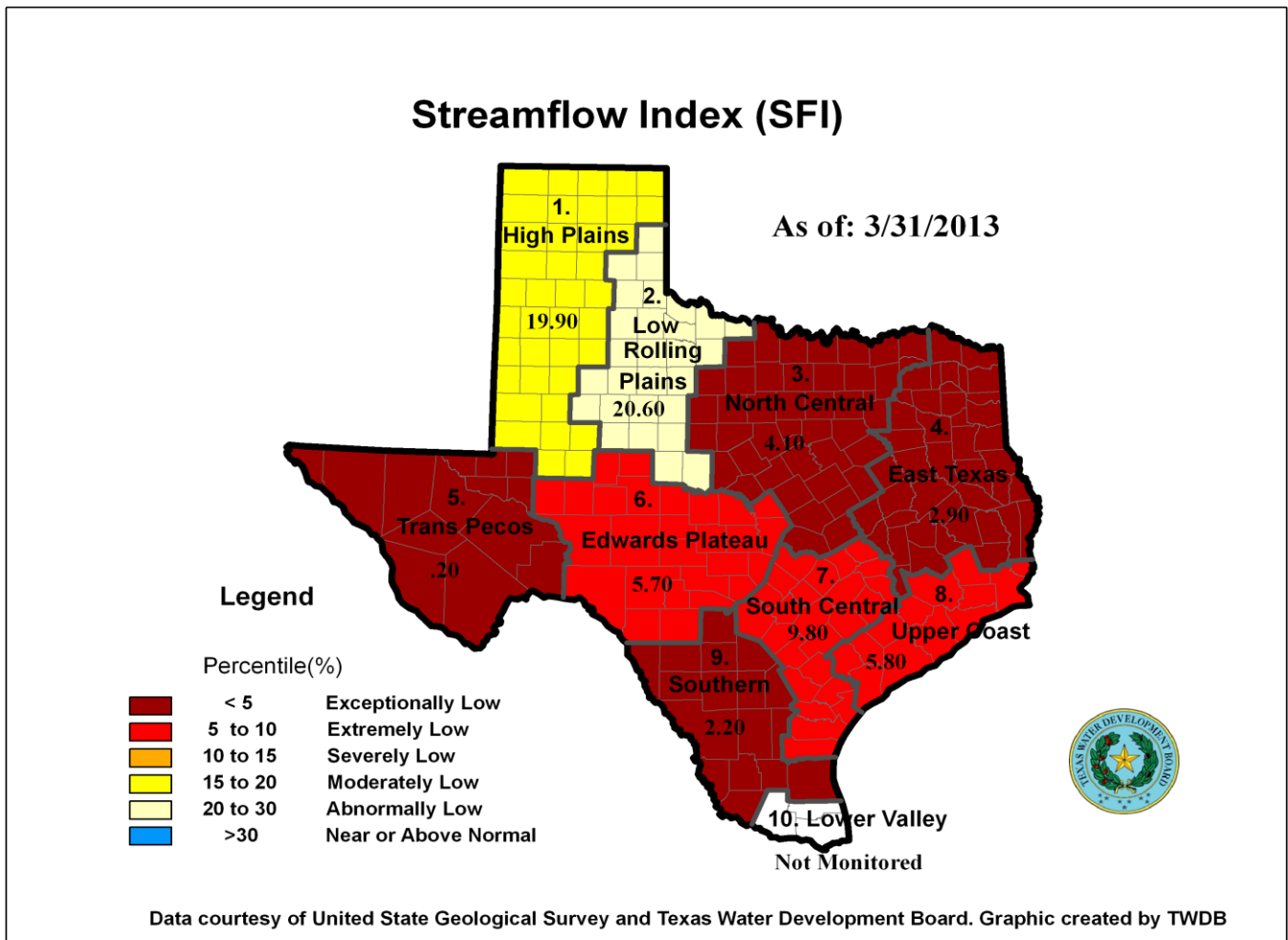
MARCH RESERVOIR CONDITIONS



MARCH STREAMFLOW CONDITIONS

Of 29 reporting index stations monitored this month, computed 30-day mean flows were exceptionally low (<5%) at 17 stations, extremely low (5-10%) at 5 stations, severely low (10-15%) at 1 station, moderately low (15-20%) at 2 stations, abnormally low (20% - 30%) at 2 stations, and near normal (30% - 70%) at the remaining 2 stations. Compared to last month, flows have increased at 8 index stations and decreased at 16 stations.

On a regional basis, flows in this month were exceptionally low in North Central, East, Trans-Pecos, and Southern regions, extremely low in Edwards Plateau, South Central, and Upper Coast regions, moderately low in High Plains region, and abnormally low in Low Rolling Plains region. Streamflow in the Lower Valley region is not monitored.



CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	Conservation Storage Capacity (acre-feet)	Conservation Storage end of Mar 2013		Change since end of Feb 2013		Change since end of Mar 2012	
		(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)	(%)
HIGH PLAINS							
Palo Duro Reservoir	61066	1393	2	-115	-0	-1997	-3
Meredith, Lake (Texas)	500000	0	0	0	0	0	0
Meredith, Lake (Texas & Oklahoma)	779556	0	0	0	0	0	0
Mackenzie Reservoir	46450	2960	6	-50	-0	-1050	-2
White River Lake	29880	921	3	-270	-1	-3012	-10
TOTAL	637396	5274	1	-435	-0	-6059	-1
LOW ROLLING PLAINS							
Greenbelt Lake	59968	7497	13	-51	-0	-3213	-5
*Electra, Lake	5626	0	0	0	0	-46	-1
N. Fork Buffalo Crk Reservoir	15400	721	5	-98	-1	-1540	-10
Kemp, Lake	245307	53803	22	-7966	-3	-32398	-13
Millers Creek Reservoir	26768	6559	25	-362	-1	-3253	-12
Alan Henry Reservoir	94808	67934	72	-1118	0	-5412	-1
Stamford, Lake	51570	12469	24	-824	-2	-13325	-26
J B Thomas, Lake	199931	919	0	-178	-0	-592	-0
Fort Phantom Hill, Lake	70030	33820	48	-531	-1	-4074	-6
Sweetwater, Lake	12267	3467	28	-120	-1	-1519	-12
Colorado City, Lake	30758	10266	33	-320	-1	533	2
Champion Creek Reservoir	41580	3256	8	-155	-0	-1527	-4
Abilene, Lake	7900	1147	15	-146	-2	-1650	-21
Coleman, Lake	38075	16890	44	-433	-1	1625	4
Hords Creek Lake	8443	2829	34	-68	-1	69	1
TOTAL	908431	221577	24	-12370	0	-66322	0
NORTH CENTRAL							
Nocona, Lake (Farmers Crk)	21444	10381	48	-146	-1	-3422	-16
Hubert H Moss Lake	24058	21009	87	-20	-0	-3049	-13
Texoma, Lake (Texas)	1268161	1084591	86	10113	1	-183570	-14
Texoma, Lake (Texas & Oklahoma)	2525281	1084591	43	10113	0	-183570	-7
*Pat Mayse Lake	113683	92445	81	711	1	-21238	-19
Kickapoo, Lake	85825	33309	39	-1270	-1	-11723	-14
Arrowhead, Lake	235997	91320	39	-2047	-1	-45658	-19
Bonham, Lake	11027	9363	85	1492	14	-1664	-15
Crook, Lake	9195	7718	84	160	2	-1477	-16
Amon G Carter, Lake	19266	11765	61	-191	-1	-3904	-20
Ray Roberts, Lake	788167	681063	86	261	0	-107104	-14
Jim Chapman Lake (Cooper)	260332	139501	54	-7269	-3	-93053	-36
Graham, Lake	45288	29813	66	-835	-2	-12460	-28
*Lost Creek Reservoir	11950	10046	84	-117	-1	-1904	-16
Bridgeport, Lake	366236	203652	56	-7053	-2	-101248	-28
Lewisville Lake	563228	436134	77	11436	2	-127094	-23
Lavon Lake	406388	253730	62	5527	1	-152658	-38
Hubbard Creek Reservoir	322280	87487	27	-3970	-1	-58209	-18
Possum Kingdom Lake	540340	386530	72	-3770	-1	-72422	-13
*Mineral Wells, Lake	6760	4981	74	-107	-2	-1779	-26
Weatherford, Lake	17812	10105	57	-286	-2	-7686	-43
Eagle Mountain Lake	179880	140083	78	4607	3	-39797	-22
Worth, Lake	33495	24443	73	213	1	-9052	-27
Grapevine Lake	164703	130302	79	2227	1	-34401	-21
Ray Hubbard, Lake	452040	378397	84	-5289	-1	-73643	-16
New Terrell City Lake	8583	6892	80	-86	-1	-1691	-20
Daniel, Lake	9515	2533	27	-186	-2	-3170	-33
Palo Pinto, Lake	27398	15165	55	-771	-3	-11949	-44

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	Conservation Storage Capacity (acre-feet)	Conservation Storage		Change since		Change since	
		end of Mar 2013 (acre-feet)	(%)	end of Feb 2013 (acre-feet)	(%)	end of Mar 2012 (acre-feet)	(%)
NORTH CENTRAL (Continue)							
Benbrook Lake	85648	67794	79	3659	4	-17854	-21
Arlington, Lake	40188	32770	82	2449	6	-7418	-18
Joe Pool Lake	175358	162578	93	1728	1	-12780	-7
*Cisco, Lake	25895	9487	37	-240	-1	-1966	-8
Leon, Lake	26476	17093	65	-348	-1	-6089	-23
Granbury, Lake	128046	88106	69	-3209	-3	-38107	-30
Pat Cleburne, Lake	26008	18491	71	-164	-1	-7517	-29
Waxahachie, Lake	10780	9429	87	-13	-0	-1351	-13
Bardwell Lake	46122	37578	81	-700	-2	-8544	-19
Proctor Lake	55457	32611	59	-1209	-2	-22846	-41
Whitney, Lake	553344	382411	69	-5054	-1	-170933	-31
Aquilla Lake	44460	32723	74	-936	-2	-11737	-26
Navarro Mills Lake	49827	47499	95	-647	-1	-2328	-5
*Halbert, Lake	6033	4818	80	-138	-2	-582	-10
Richland-Chambers Reservoir	1087839	881272	81	-20131	-2	-206567	-19
*Brownwood, Lake	128839	68950	54	-1325	-1	-7361	-6
Waco, Lake	187808	159076	85	-672	-0	-28732	-15
Limestone, Lake	208014	175828	85	-2066	-1	-32186	-15
Belton Lake	435225	350661	81	-3854	-1	-84564	-19
Stillhouse Hollow Lake	227771	188890	83	-709	-0	-18718	-8
Georgetown, Lake	36823	21905	59	-1708	-5	-14918	-41
Granger Lake	50779	50779	100	0	0	0	0
Tawakoni, Lake	871685	695199	80	-14567	-2	-157766	-18
Mountain Creek, Lake	22850	22850	100	0	0	0	0
Squaw Creek, Lake	151250	150145	99	-63	-0	-1105	-1
TOTAL	10675576	8011701	75	-46583	-0	-2046994	-19
EAST							
Wright Patman Lake	122593	122593	100	0	0	0	0
*Sulphur Springs, Lake	17747	14962	84	-148	-1	-2785	-16
Cypress Springs, Lake	66756	61364	92	218	0	-5392	-8
Bob Sandlin, Lake	190822	151205	79	-233	-0	-12616	-7
Caddo, Lake	29898	29898	100	0	0	0	0
Martin, Lake	75116	67348	90	223	0	11306	0
Monticello, Lake	34740	34740	100	0	0	0	0
Fork Reservoir, Lake	605061	496194	82	-4933	-1	-58263	-10
O the Pines, Lake	241363	195448	81	6096	3	-44506	-18
Cedar Creek Reservoir in Trinity	644686	537486	83	-12145	-2	-107200	-17
Athens, Lake	29503	25244	86	221	1	-1961	-7
Palestine, Lake	373199	361622	97	-1304	-0	-11577	-3
Tyler, Lake	80103	65420	82	-594	-1	-4346	-5
Murvaul, Lake	38285	38285	100	0	0	0	0
Jacksonville, Lake	25670	25670	100	0	0	0	0
Nacogdoches, Lake	39522	38741	98	-345	-1	6191	16
Houston County Lake	17113	17113	100	0	0	39	0
Sam Rayburn Reservoir	2857077	2627417	92	-22454	-1	-44063	-2
Toledo Bend Reservoir (Texas)	2245752	2012242	90	818	0	-142440	-6
Toledo Bend Reservoir (TX & LA)	4472900	2012242	45	818	0	-142440	-3
*Livingston, Lake	1785348	1785348	100	0	0	0	0
B A Steinhagen Lake	66961	58969	88	5821	9	-2103	-3
Conroe, Lake	416177	357625	86	-5013	-1	-16975	-4
TOTAL	10003492	9124934	91	-33772	0	-436691	0

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	Conservation Storage Capacity (acre-feet)	Conservation Storage end of Mar 2013 (acre-feet)	(%)	Change since end of Feb 2013 (acre-feet)	(%)	Change since end of Mar 2012 (acre-feet)	(%)
TRANS-PECOS							
Red Bluff Reservoir	152335	28069	18	179	0	6273	4
TOTAL	152335	28069	18	179	0	6273	4
EDWARDS PLATEAU							
Oak Creek Reservoir	39210	10820	28	-344	-1	-3437	-9
E V Spence Reservoir	517272	26164	5	-1137	-0	23999	5
O C Fisher Lake	79483	0	0	0	0	24631	5
*O H Ivie Reservoir	554340	113461	20	-6000	-1	16526	3
Twin Buttes Reservoir	182454	2191	1	-1298	-1	-2221	-1
Brady Creek Reservoir	28808	7354	26	-356	-1	-1354	-5
Buchanan, Lake	860607	353154	41	-6438	-1	-69890	-8
Inks, Lake	13962	12945	93	8	0	-15	-0
Lyndon B Johnson, Lake	111633	109332	98	120	0	-421	-0
*Amistad Reservoir (Texas)	1840849	815844	44	-26451	-1	-528052	-29
*Amistad Reservoir (TX & Mexico)	3275532	815844	25	-26451	-1	-528052	-16
TOTAL	4149135	1451265	35	-41896	-1	-540234	-13
SOUTH CENTRAL							
Travis, Lake	1113256	418109	38	-9359	-1	-103859	-9
*Austin, Lake	23972	23174	97	202	1	202	1
Somerville Lake	147104	126807	86	-1330	-1	-20297	-14
Canyon Lake	378781	305820	81	-2790	-1	-19363	-5
Medina Lake	254884	16706	7	-3076	-1	-41310	-16
*Coleta Creek Reservoir	31040	24507	79	-230	-1	-3407	-11
TOTAL	1949037	915123	47	-16583	-1	-188034	-10
UPPER COAST							
Houston, Lake	102876	101576	99	-1300	-1	-1300	-1
Texana, Lake	159640	131122	82	-9321	-6	-28518	-18
TOTAL	262516	232698	89	-10621	-4	-29818	-11
SOUTHERN							
Choke Canyon Reservoir	695262	301283	43	-17388	-3	-115159	-17
Corpus Christi, Lake	256961	39435	15	-253	-0	-39296	-15
*Falcon Reservoir (Texas)	1551007	350105	23	-113551	-7	-392311	-25
*Falcon Reservoir (TX & Mexico)	2646817	350105	13	-113551	-4	-392311	-15
TOTAL	2503230	690823	28	-131192	-5	-546766	-22
STATE TOTAL	31071224	20546182	66	-392098	-1	-3953470	-13

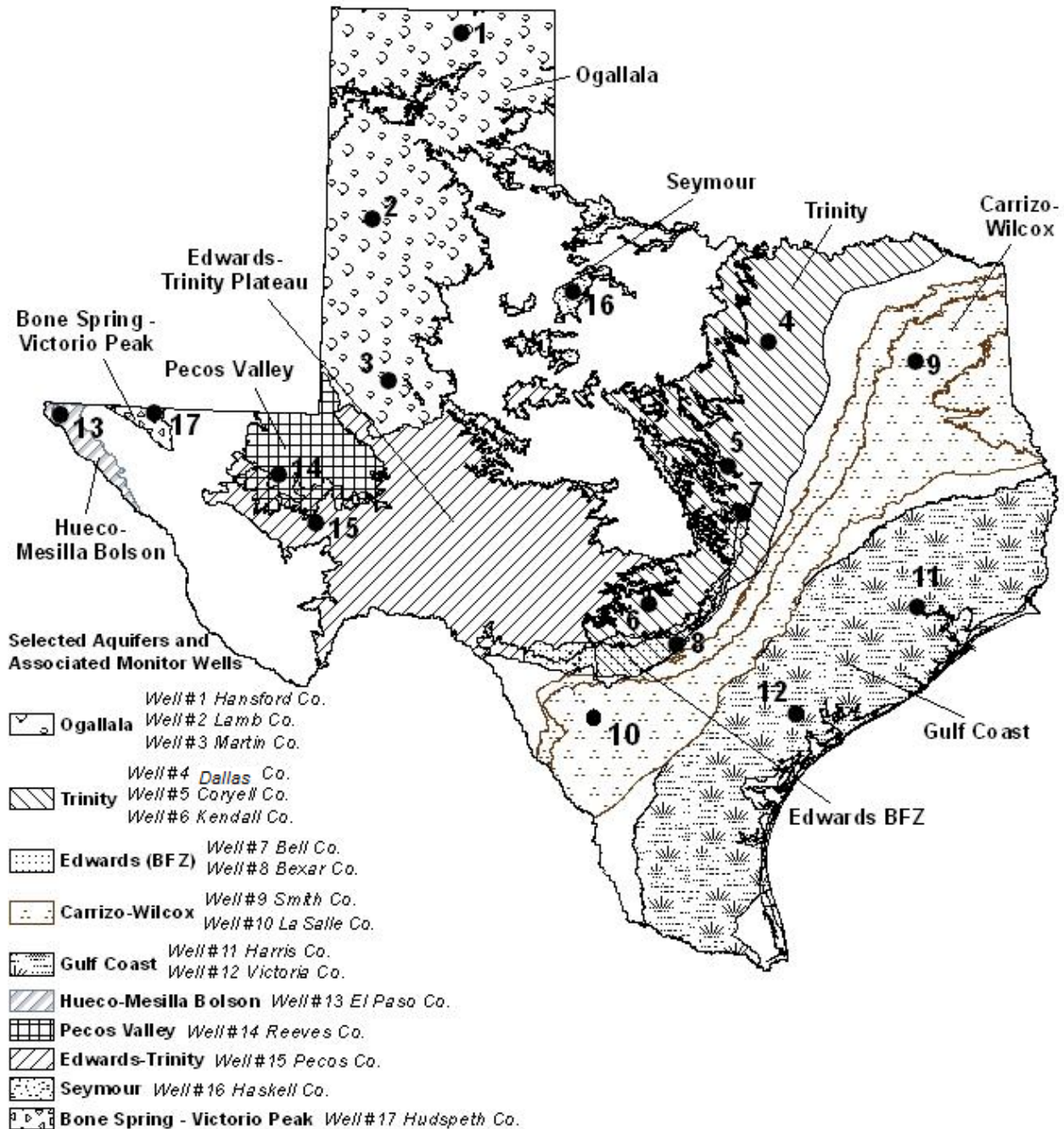
* Conservation volume is used as conservation storage capacity because the dead storage is unknown.

Elephant Butte Reservoir	1973358	220003	11	13228	1	-158724	-8
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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 $100 * (\text{current conservation storage} - \text{past conservation storage}) / \text{conservation storage capacity}$. Figures shown are for the Texas share of conservation storage in all reservoirs.

MARCH 2013 GROUNDWATER LEVELS IN OBSERVATION WELLS



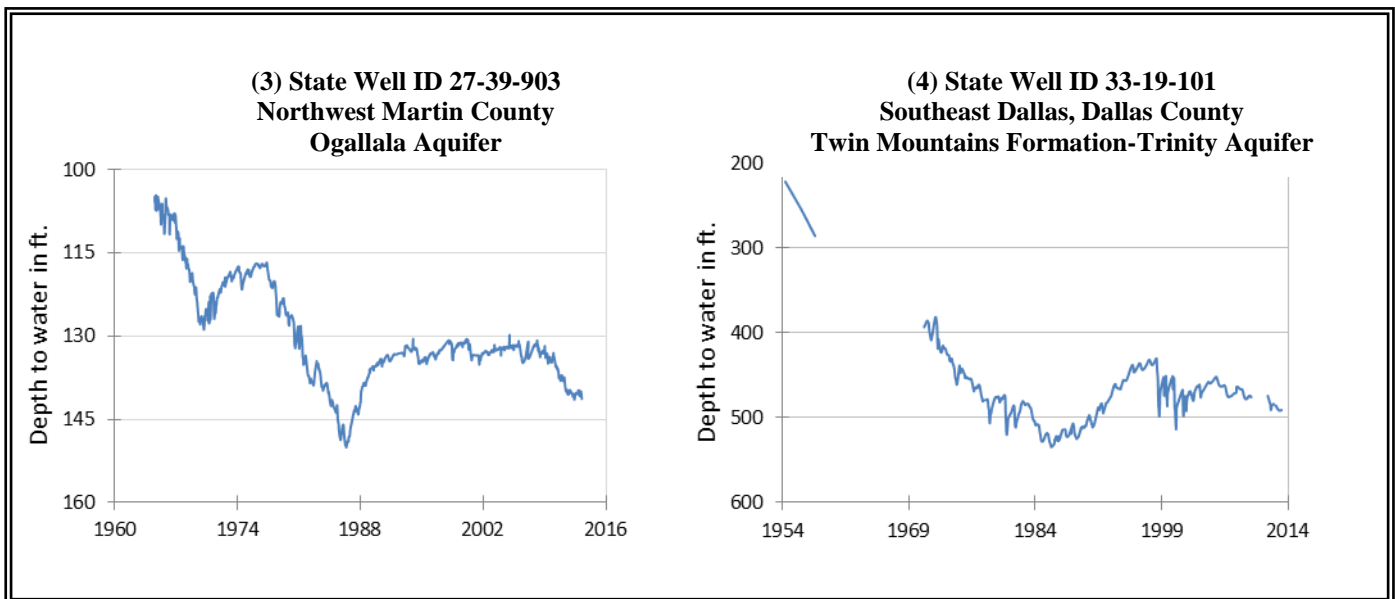
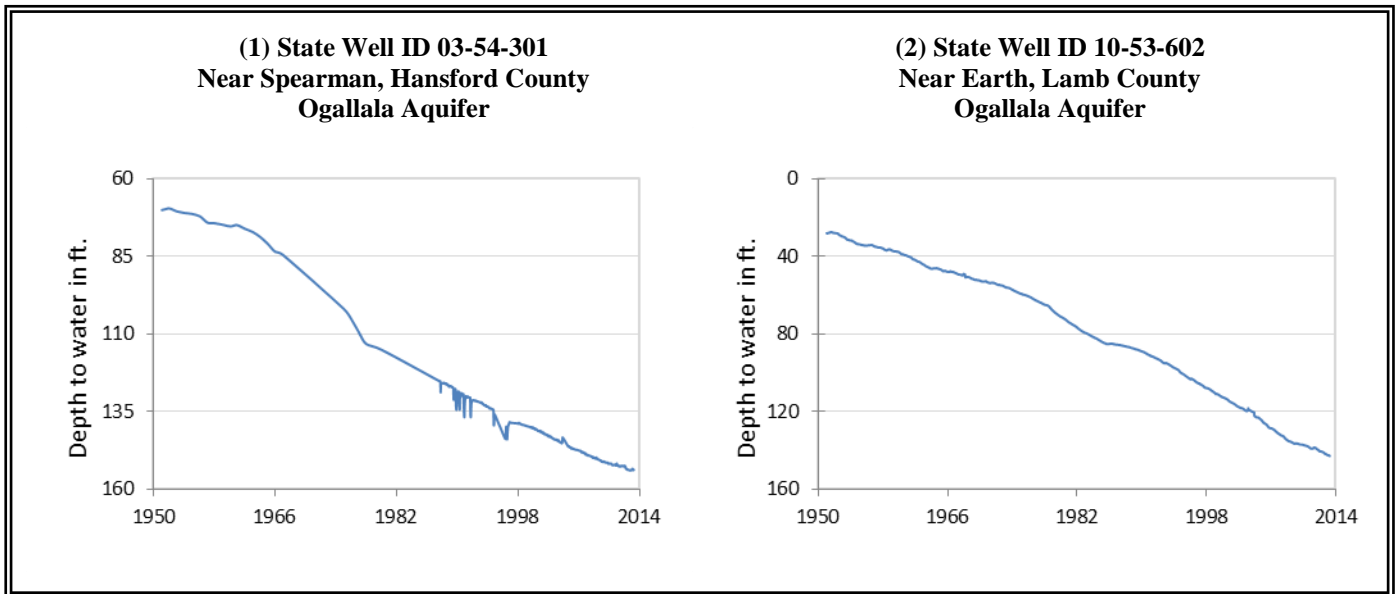
March, 2013

Water level measurements were available for all seventeen key monitoring wells in the state. Water levels rose in five of the monitoring wells since the beginning of March, ranging from 0.56 feet in the Victoria County Gulf Coast Aquifer well to 1.75 feet in the Harris County Gulf Coast Aquifer well. Water levels declined in eleven monitoring wells, ranging from 0.03 feet in the El Paso County Hueco Bolson Aquifer well to 10.65 feet in the Kendall County Trinity Aquifer well. Water levels remained constant in the Hansford County Ogallala Aquifer well. The J-17 well in San Antonio recorded a water level of 83.41 feet below land surface or 647.59 feet above mean sea level. This water level is 2.41 feet below the Stage II critical management level in that segment of the Edwards Aquifer. Stage II restrictions were declared by the EAA when the ten-day average fell below the 650-foot elevation, or 81 feet below land surface.

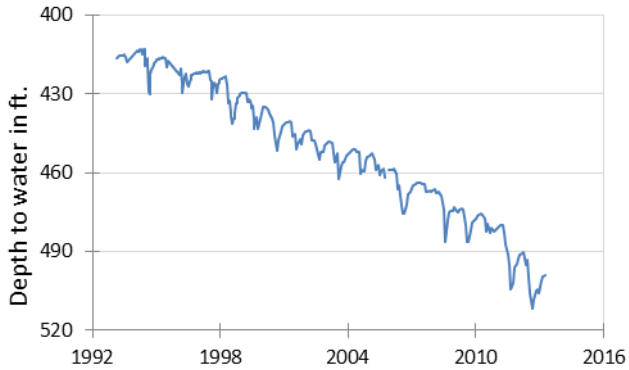
* ID is used in this publication to differentiate between the monitoring well number (1 - 17) as displayed on the aquifer map and the TWDB's six- or seven-digit state well "identification" number.

Monitoring Well	Mar	Feb	Month Change	Year Change	Historical Change
(1) Hansford 0354301	153.8	153.80	0.0	-0.28	-83.68
(2) Lamb 1053602	142.88	142.64	-0.24	-2.2	-114.73
(3) Martin 2739903	141.32	139.97	-1.35	-0.34	-36.43
(4) Dallas 3319101	490.74	491.50	0.76	-6.58	-268.74
(5) Coryell 4035404	499.02	499.60	0.58	-8.98	-207.02
(6) Kendall 6802609	135.91	125.26	-10.65	-14.71	-75.91
(7) Bell 5804816	126.22	125.74	-0.48	-2.99	-3.09
(8) Bexar 6837203	83.41	82.17	-1.24	-18.42	-36.77
(9) Smith 3430907	440.02	440.76	0.74	-7.62	-74.02
(10) La Salle 7738103	450.05	445.04	-5.01	-57.28	-196.98
(11) Harris 6514409	195.50	197.25	1.75	7.89	-60
(12) Victoria 8017502	34.74	35.30	0.56	0.84	-0.74
(13) El Paso 4913301	293.59	293.56	-0.03	-3.53	-61.69
(14) Reeves 4644501	149.58	146.43	-3.15	-0.61	-57.49
(15) Pecos 5216802	200.34	195.11	-5.23	-1.65	46.54
(16) Haskell 2135748	48.44	47.40	-1.04	-2.64	-7.11
(17) Hudspeth 4807516	138.73	133.55	-5.18	-3.87	-34.81

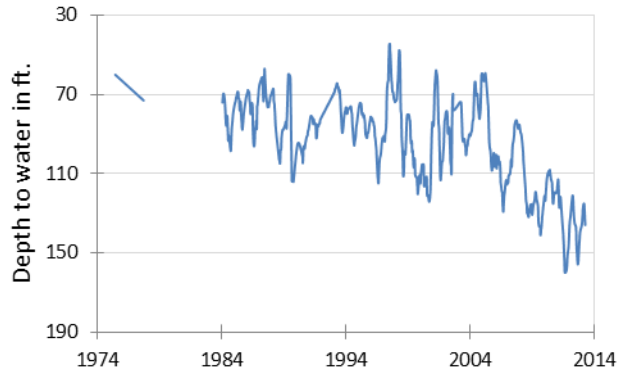
MARCH GROUNDWATER LEVELS IN OBSERVATION WELLS



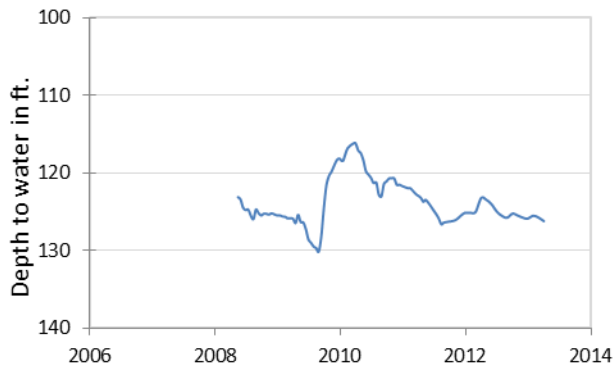
**(5) State Well ID 40-35-404
Gatesville, Coryell County
Hosston Formation-Trinity Aquifer**



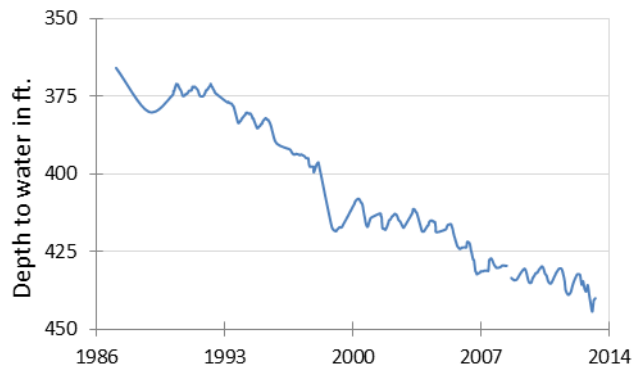
**(6) State Well ID 68-02-609
Waring, Kendall County
Cow Creek Formation-Trinity Aquifer**



**(7) State Well ID 58-04-816
Near Salado, Bell County
Edwards (BFZ) Aquifer**



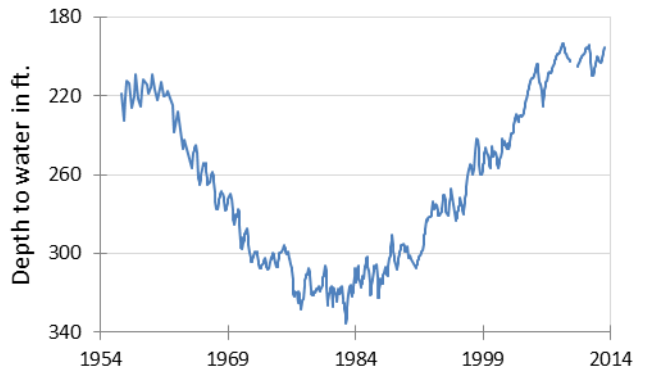
**(9) State Well ID 34-30-907
Red Springs, Smith County
Carrizo-Wilcox Aquifer**



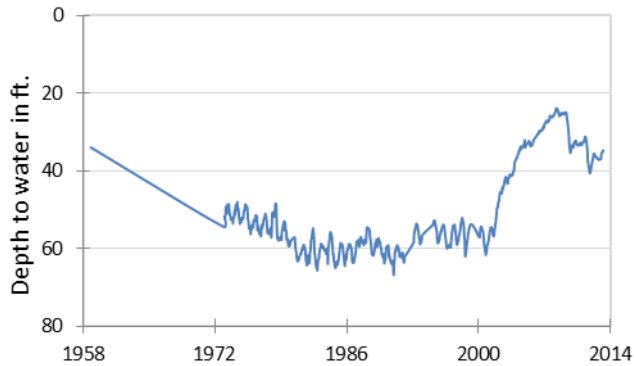
**(10) State Well ID 77-38-103
Near Cotulla, La Salle County
Carrizo-Wilcox Aquifer**



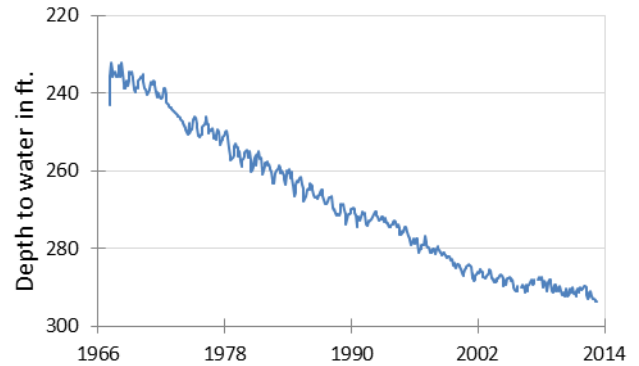
**(11) State Well ID 65-14-409
Alief, Harris County
Evangeline Formation-Gulf Coast Aquifer**



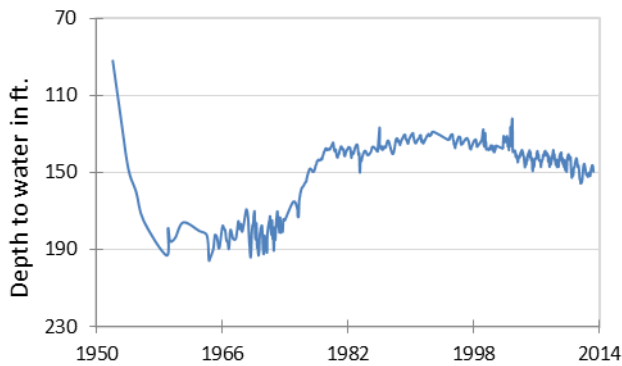
(12) State Well ID 80-17-502
Near Bloomington, Victoria County
Lissie Formation-Gulf Coast Aquifer



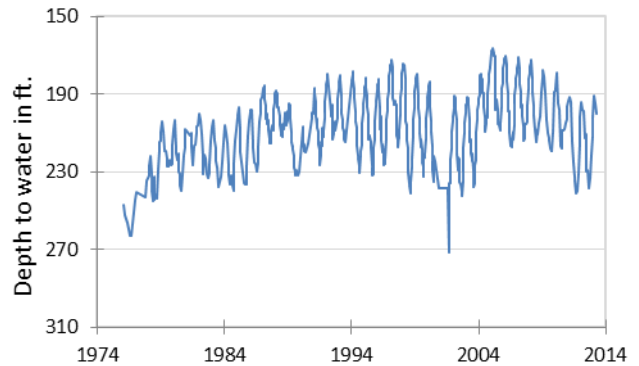
(13) State Well ID 49-13-301
El Paso, El Paso County
Hueco-Mesilla Bolson Aquifer



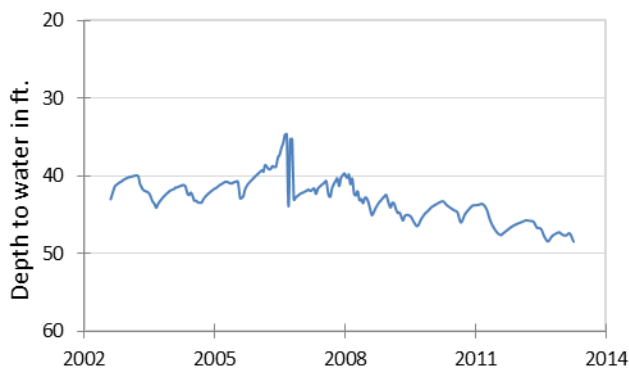
(14) State Well ID 46-44-501
Near Pecos, Reeves County
Pecos Valley Aquifer



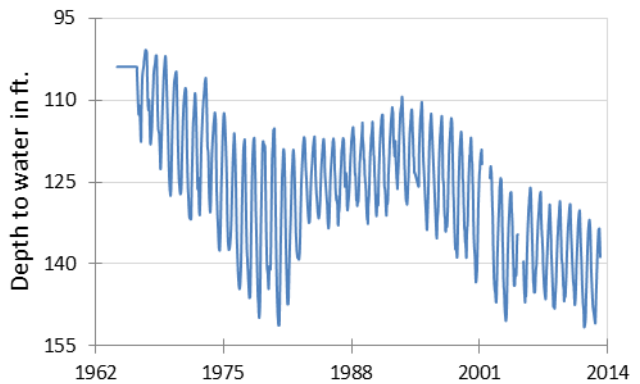
(15) State Well ID 52-16-802
Fort Stockton, Pecos County
Edwards-Trinity (Plateau) Aquifer



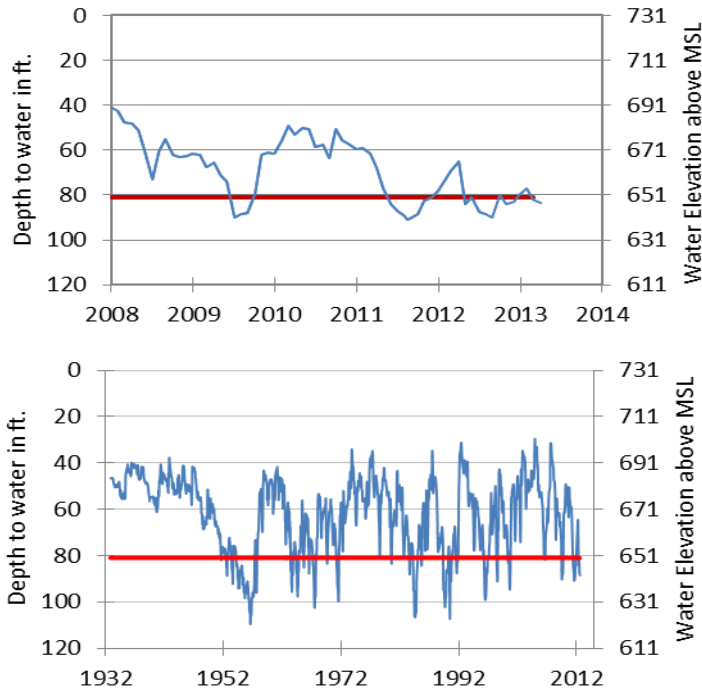
(16) State Well ID 21-35-748
Near O'Brien, Haskell County
Seymour Aquifer



(17) State Well ID 48-07-516
Dell City, Hudspeth County
Bone Spring - Victorio Peak Aquifer



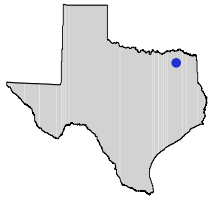
**(8) State Well ID 68-37-203 (J-17)
In San Antonio, Bexar County
Edwards (BFZ) Aquifer**



The late March water level measurement in this Edwards (BFZ) Aquifer well, elevation 731 feet above mean sea level, was 83.41 feet below land surface, or 647.59 feet above mean sea level. This was 1.24 feet below last month's measurement, 18.42 feet below last year's measurement, and 36.77 feet below the initial measurement recorded in 1932.

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

HYDROGRAPH OF THE MONTH

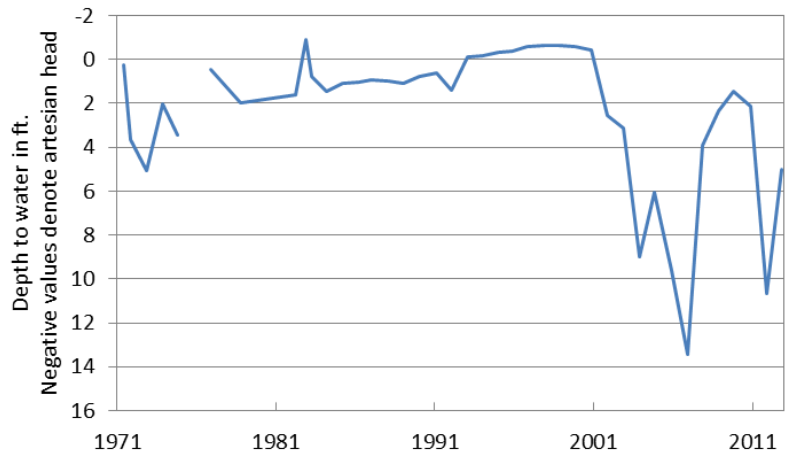


Each month this space features a new hydrograph (marked with the • symbol on the map) depicting different aquifers and different conditions in Texas.

Nacatoch Aquifer

The Nacatoch Aquifer is a minor aquifer occurring in a narrow band across northeast Texas. The Nacatoch Formation, the middle formation of the Navarro group, comprises the water bearing units of the aquifer. Bounded above by the Neylandville Marl and below by the Kemp Clay formations. The Nacatoch formation is composed of sequences of sand separated by impermeable layers of mudstone or clay deposited at the end of the Cretaceous in a coastal tidal-flat setting. The Mexia-Talco Fault Zone to the south generally delineates the subsurface limit of the aquifer. Groundwater in this aquifer is usually under artesian conditions. This is denoted in the hydrograph as a negative head value, or water level above ground surface. The quality of groundwater in the aquifer is typically alkaline, high in sodium bicarbonate, and soft. In the subsurface, total dissolved solids increase and are significantly higher south of the Mexia-Talco Fault Zone where the water contains between 1,000 and 3,000 mg/l total dissolved solids. Water from the aquifer is extensively used for domestic and livestock purposes.

**Well # 16-33-304
Red River County**



This private well, at an elevation of 345 feet above sea level, is completed in the Nacatoch Sand Formation of the Nacatoch Aquifer at a total depth of 182 feet. Although under enough artesian pressure to flow in 1982 and for a short period from the mid to late nineteen nineties, declines of up to 13 feet have occurred recently during periods of drought.

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