Volumetric and Sedimentation Survey of Lake BOB SANDLIN

February 2018 Survey

Texas Water Development Board

December 2018

Texas Water Development Board

Prepared for:

Titus County Fresh Water Supply District No. 1

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Executive summary

In October 2017, the Texas Water Development Board (TWDB) entered into an agreement with the Titus County Fresh Water Supply District No. 1 to perform a volumetric and sedimentation survey of Lake Bob Sandlin (Titus, Camp, Franklin, and Wood counties, Texas). Surveying was performed using a multi-frequency (208 kHz, 50 kHz, and 24 kHz), sub-bottom profiling depth sounder. Sediment core samples were collected in select locations and correlated with sub-bottom acoustic profiles to estimate sediment accumulation thicknesses and sedimentation rates.

Fort Sherman Dam and Lake Bob Sandlin are located on Big Cypress Creek, approximately 5 miles southwest of the City of Mount Pleasant, in Titus, Camp, Franklin, and Wood counties, Texas. The conservation pool elevation of Lake Bob Sandlin is 337.5 feet above mean sea level (NGVD29). The TWDB collected bathymetric data for Lake Bob Sandlin on January 29-31, 2018, while daily average water surface elevations measured between 337.41 and 337.42 feet above mean sea level (NGVD29), and February 1-27, 2018, while daily average water surface elevations measured between 337.41 and 338.28 feet above mean sea level (NGVD29). Additional data was collected on September 4-5, 2018, while daily average water surface elevations measured between 336.11 and 336.12 feet above mean sea level (NGVD29).

The 2018 TWDB volumetric survey indicates Lake Bob Sandlin has a total reservoir capacity of 203,148 acre-feet and encompasses 8,888 acres at conservation pool elevation (337.5 feet above mean sea level, NGVD29). Previous capacity estimates include the original design of 213,350 acre-feet and two TWDB surveys in 1998 and 2008. The 1998 and 2008 TWDB surveys were re-evaluated using current processing procedures resulting in an updated capacity estimate of 206,701 acre-feet and 202,313 acre-feet, respectively.

The 2018 TWDB sedimentation survey indicates Lake Bob Sandlin has lost capacity at an average of 191 acre-feet per year since impoundment due to sedimentation below conservation pool elevation (337.5 feet NGVD29). The sedimentation survey indicates sediment accumulation is occurring throughout the reservoir. The TWDB recommends that a similar methodology be used to resurvey Lake Bob Sandlin in 10 years or after a major flood event.

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Note: References to brand names throughout this report do not imply endorsement by the Texas Water Development Board

Introduction

The Hydrographic Survey Program of the Texas Water Development Board (TWDB) was authorized by the 72nd Texas State Legislature in 1991. Texas Water Code Section 15.804 authorizes the TWDB to perform surveys to determine reservoir storage capacity, sedimentation levels, rates of sedimentation, and projected water supply availability.

In October 2017, the TWDB entered into an agreement with the Titus County Fresh Water Supply District No. 1, to perform a volumetric and sedimentation survey of Lake Bob Sandlin (Texas Water Development Board, 2017). This report provides an overview of the survey methods, analysis techniques, and associated results. Also included are the following contract deliverables: (1) a shaded relief plot of the reservoir bottom (Figure 4), (2) a bottom contour map (Figure 6), (3) an estimate of sediment accumulation and location (Figure 10), and (4) an elevation-area-capacity table of the reservoir acceptable to the Texas Commission on Environmental Quality (Appendices I and J).

Lake Bob Sandlin general information

Fort Sherman Dam and Lake Bob Sandlin are located on Big Cypress Creek, approximately 5 miles southwest of the City of Mount Pleasant, in Titus, Camp, Franklin, and Wood counties, Texas (Figure 1). Lake Bob Sandlin is owned and operated by the Titus County Fresh Water Supply District No. 1. Construction of Fort Sherman Dam began in 1974 (Texas Water Development Board, 1973). Deliberate impoundment began on August 8, 1977, and Fort Sherman Dam was completed in April 1978 (Texas Water Development Board, 1998). Lake Bob Sandlin is used primarily as water supply for municipal, domestic and industrial purposes (Titus County Fresh Water Supply District No. 1, 2018). Additional pertinent data about Fort Sherman Dam and Lake Bob Sandlin can be found in Table 1.

Water rights for Lake Bob Sandlin have been appropriated to the Titus County Fresh Water Supply District No. 1 through Certificate of Adjudication No. 04-4564. and the Northeast Texas Municipal Water District through Certificate of Adjudication No. 04-4590 and amendments to the Certificate of Adjudication Nos. 04-4590A, and 04-4590B. The complete permits are on file in the Information Resources Division of the Texas Commission on Environmental Quality.

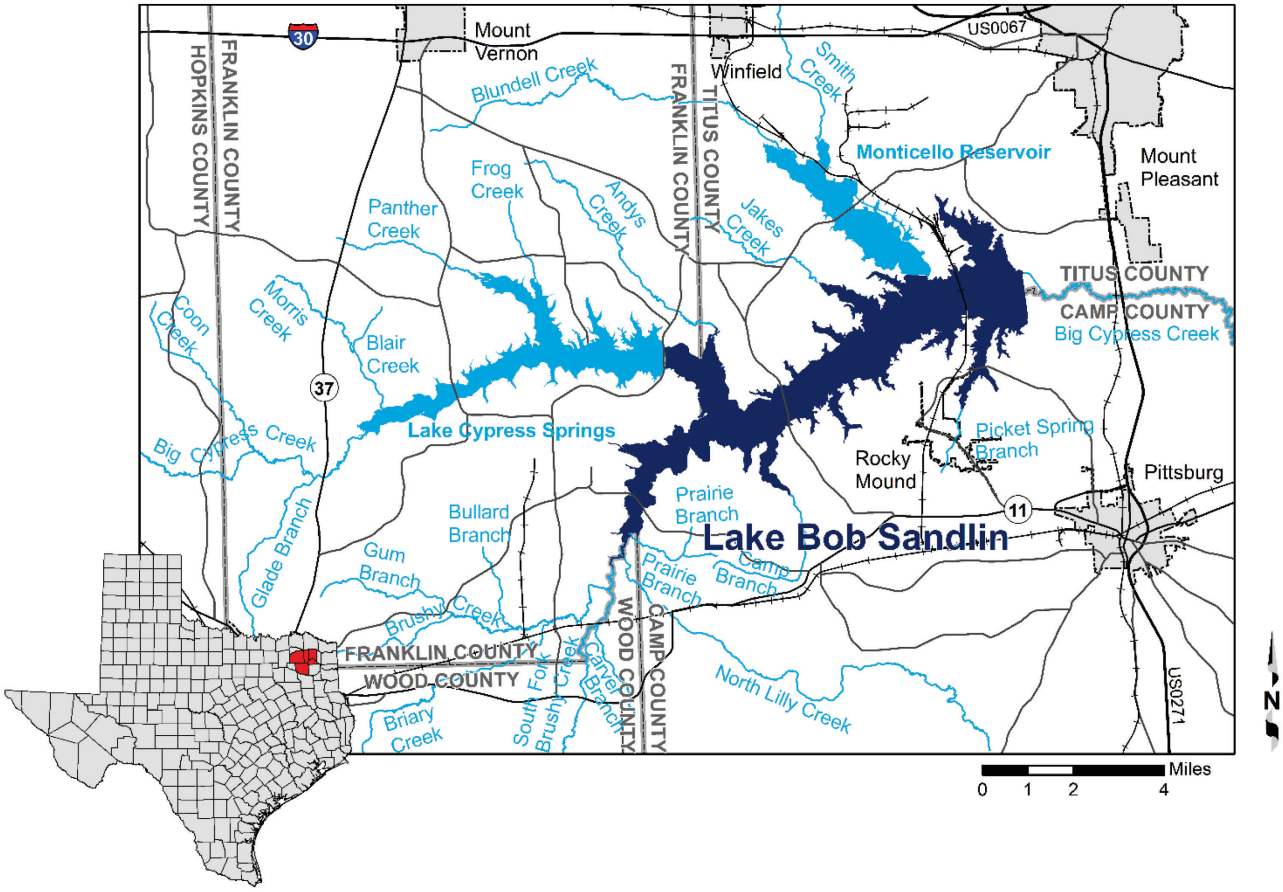


Figure 1. **Location map of Lake Bob Sandlin.**

Table 1. Pertinent data for Fort Sherman Dam and Lake Bob Sandlin.

Owner	
Titus County Fresh Water Supply District No. 1	
Design Engineer	
URS/ Forrest and Cotton Inc.	
Location of dam	
On Big Cypress Creek in Titus, Camp, Franklin, and Wood Counties, approximately 5 miles southwest of the City of Mount Pleasant, Texas	
Drainage area	
Total area above the dam is 239 square miles	
Dam	
Type	Earthfill
Length (total)	10,800 feet
Maximum height	69 feet
Top width	25 feet
Top elevation	349.0 feet above mean sea level
Spillway (emergency)	
Location	Near left end of the dam
Type	Uncontrolled, unpaved, broad-crested weir
Crest length	4,500 feet
Crest elevation	341.3 feet above mean sea level
Spillway (service)	
Location	Left abutment
Type	Concrete ogee
Crest length	160 feet net
Crest elevation	316.5 feet above mean sea level
Control	4 tainter gates, each 22.5 feet by 40 feet
Outlet (diversion)	
Type	Conduit in spillway gate pier
Invert elevation	294.5 feet above mean sea level
Control	Sluice gate 3.5 by 6 feet

Reservoir data (Based on 2018 TWDB survey)

Feature	**Elevation (feet** NGVD29[a]**)**	**Capacity (acre-feet)**	**Area (acres)**
Top of dam	349.0	N/A	N/A
Maximum water (test flood)	345.6	N/A	N/A
Top tainter gates	339.0	N/A	N/A
Top of conservation pool	337.5	203,148	8,888
Spillway crest	316.5	60,973	4,502
Lowest outlet	294.5	3,173	936
Streambed	280.0	0	0
Usable conservation storage[b]	—	199,975	—

Source: (Texas Water Development Board, 1973, U.S. Geological Survey, 2018a)

[a] NGVD29 = National Geodetic Vertical Datum 1929

[b] Usable conservation storage equals total capacity at conservation pool elevation minus dead pool capacity. Dead pool refers to water that cannot be drained by gravity through a dam's outlet works.

Volumetric and sedimentation survey of Lake Bob Sandlin

Datum

The vertical datum used during this survey is the National Geodetic Vertical Datum 1929 (NGVD29). This datum also is utilized by the United States Geological Survey (USGS) for the reservoir elevation gage *USGS 07344489 Lk Bob Sandlin nr Mount Pleasant, TX* (U.S. Geological Survey, 2018b). Elevations herein are reported in feet

relative to the NGVD29 datum. Volume and area calculations in this report are referenced to water levels provided by the USGS gage. The horizontal datum used for this report is North American Datum 1983 (NAD83), and the horizontal coordinate system is State Plane Texas North Central Zone (feet).

TWDB bathymetric and sedimentation data collection

The TWDB collected bathymetric data for Lake Bob Sandlin on January 29-31, 2018, while daily average water surface elevations measured between 337.41 and 337.42 feet above mean sea level (NGVD29), and February 1-27, 2018, while daily average water surface elevations measured between 337.41 and 338.28 feet above mean sea level (NGVD29). Additional data was collected on September 4-5, 2018, while daily average water surface elevations measured between 336.11 and 336.12 feet above mean sea level (NGVD29). For data collection, the TWDB used a Specialty Devices, Inc. (SDI), single-beam, multi-frequency (208 kHz, 50 kHz, and 24 kHz) sub-bottom profiling depth sounder integrated with differential global positioning system (DGPS) equipment. Data was collected along pre-planned survey lines oriented perpendicular to the assumed location of the original river channels and spaced approximately 500 feet apart. Many of the same survey lines also were used by the TWDB during the 1998 and 2008 surveys. The depth sounder was calibrated daily using a velocity profiler to measure the speed of sound in the water column and a weighted tape or stadia rod for depth reading verification. Figure 2 shows the data collection locations for the 2018 TWDB survey.

All sounding data was collected and reviewed before sediment core sampling sites were selected. Sediment core samples are collected throughout the reservoir to assist with interpretation of the sub-bottom acoustic profiles. After analyzing the sounding data, the TWDB selected ten locations to collect sediment core samples (Figure 2). Sediment cores were collected on September 5, 2018, with a custom-coring boat and an SDI VibeCore system.

Sediment cores are collected in 3-inch diameter aluminum tubes. Analysis of the acoustic data collected during the bathymetric survey assists in determining the depth of penetration the tube must be driven during sediment sampling. A sediment core extends from the current reservoir-bottom surface, through the accumulated sediment, and into the pre-impoundment surface. After the sample is retrieved, the core tube is cut to the level of

the sediment core. The tube is capped and transported to TWDB headquarters for further analysis.

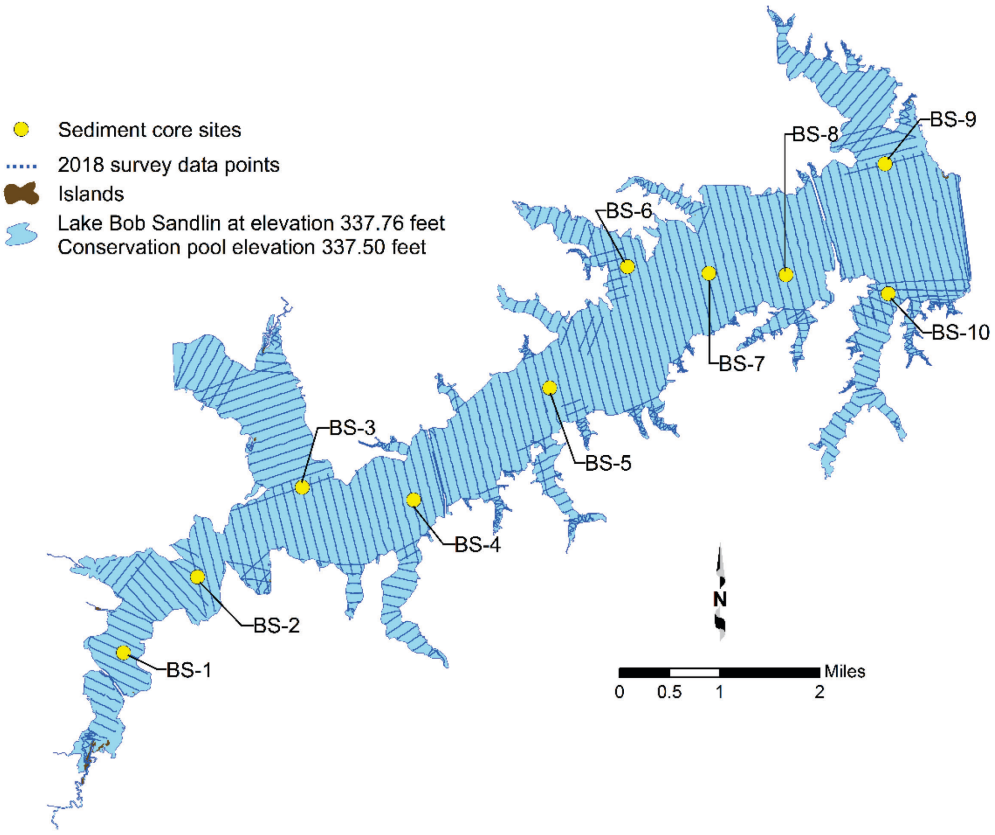


Figure 2. 2018 TWDB Lake Bob Sandlin survey data (*blue dots*), sediment coring locations (*yellow circles).*

Data processing

Model boundary

Lake Bob Sandlin's model boundary was digitized from aerial photographs, also known as digital orthophoto quarter-quadrangle images (DOQQs), obtained through the Texas Imagery Service. The Texas Natural Resources Information System manages the Texas Imagery Service allowing public organizations in the State of Texas to access Google Imagery as a service using Environmental Systems Research Institute's ArcGIS software (Texas Natural Resources Information System, 2018). The quarter-quadrangles containing the Lake Bob Sandlin are Newsome (NE), New Hope (SE) and Monticello (NW, NE, SW, SE). The DOQQs were photographed on December 3, 2015, and December 4, 2015, while the daily average water surface elevation measured 337.76 and 337.82 feet, respectively. The DOQQs have a resolution of 6 inches (Texas Natural Resources Information System, 2018). The model boundary was digitized at the land-water interface in the 2015 photographs and assigned an elevation of 337.76 feet.

Triangulated Irregular Network model

Following completion of data collection, the raw data files collected by the TWDB were edited to remove data anomalies. The reservoir's current bottom surface is automatically determined by the data acquisition software. DepthPic© software, developed by SDI, Inc., was used to display, interpret, and edit the multi-frequency data by manually removing data anomalies in the current bottom surface and manually digitizing the reservoir-bottom surface at the time of initial impoundment (*i.e.* pre-impoundment surface). For further analysis, HydroTools, software developed by TWDB staff, was used to merge all the data into a single file including the current reservoir-bottom surface, pre-impoundment surface, and sediment thickness at each sounding location. The water surface elevation at the time of each sounding was used to convert each sounding depth to a corresponding reservoir-bottom elevation. This survey point dataset was then preconditioned by inserting a uniform grid of artificial survey points between the actual survey lines. Bathymetric elevations at these artificial points were determined using an anisotropic spatial interpolation algorithm described in the next section. This technique creates a high resolution, uniform grid of interpolated bathymetric elevation points throughout a majority of the reservoir (McEwen and others, 2011a). Finally, the point file resulting from spatial interpolation is used in conjunction with sounding and boundary data

to create volumetric and sediment Triangulated Irregular Network (TIN) models utilizing the 3D Analyst Extension of ArcGIS. The 3D Analyst algorithm uses Delaunay's criteria for triangulation to create a grid composed of triangles from non-uniformly spaced points, including the boundary vertices (Environmental Systems Research Institute, 1995).

Spatial interpolation of reservoir bathymetry

Isotropic spatial interpolation techniques such as the Delaunay triangulation used by the 3D Analyst extension of ArcGIS are, in many instances, unable to suitably interpolate bathymetry between survey lines common to reservoir surveys. Reservoirs and stream channels are anisotropic morphological features where bathymetry at any particular location is more similar to upstream and downstream locations than to transverse locations. Interpolation schemes that do not consider this anisotropy lead to the creation of several types of artifacts in the final representation of the reservoir bottom surface and hence to errors in volume. These include artificially-curved contour lines extending into the reservoir where the reservoir walls are steep or the reservoir is relatively narrow, intermittent representation of submerged stream channel connectivity, and oscillations of contour lines in between survey lines. These artifacts reduce the accuracy of the resulting volumetric and sediment TIN models in areas between actual survey data.

To improve the accuracy of bathymetric representation between survey lines, the TWDB developed various anisotropic spatial interpolation techniques. Generally, the directionality of interpolation at different locations of a reservoir can be determined from external data sources. A basic assumption is that the reservoir profile in the vicinity of a particular location has upstream and downstream similarity. In addition, the sinuosity and directionality of submerged stream channels can be determined by directly examining the survey data, or more robustly by examining scanned USGS 7.5-minute quadrangle maps (known as digital raster graphics), hypsography files (the vector format of USGS 7.5-minute quadrangle map contours), and historical aerial photographs, when available. Using the survey data, polygons are created to partition the reservoir into segments with centerlines defining directionality of interpolation within each segment. For surveys with similar spatial coverage, these interpolation definition files are, in principle, independent of the survey data and could be applied to past and future survey data of the same reservoir. In practice, minor revisions of the interpolation definition files may be needed to account for differences in spatial coverage and boundary conditions between surveys. Using the

interpolation definition files and survey data, the current reservoir-bottom elevation, pre-impoundment elevation, and sediment thickness are calculated for each point in the high-resolution uniform grid of artificial survey points. The reservoir boundary, artificial survey points grid, and survey data points are used to create volumetric and sediment TIN models representing reservoir bathymetry and sediment accumulation throughout the reservoir. Specific details of this interpolation technique can be found in the HydroTools manual (McEwen and others, 2011a) and in McEwen and others (2011b).

In areas inaccessible to survey data collection, such as small coves and shallow upstream areas of the reservoir, linear interpolation is used for volumetric and sediment accumulation estimations. Linear interpolation follows a line linking the survey points file to the lake boundary file (McEwen and others, 2011a). Without linearly interpolated data, the TIN model builds flat triangles. A flat triangle is defined as a triangle where all three vertices are equal in elevation, generally the elevations of the reservoir boundary and contours. Reducing flat triangles by applying linear interpolation improves the elevation-capacity and elevation-area calculations, although it is not always possible to remove all flat triangles.

Figure 3 illustrates typical results from application of the anisotropic interpolation and linear interpolation techniques to Lake Bob Sandlin. In Figure 3A, deeper channels and steep slopes indicated by surveyed cross-sections are not continuously represented in areas between survey cross-sections. This is an artifact of the TIN generation routine rather than an accurate representation of the physical bathymetric surface. Inclusion of interpolation points in creation of the volumetric TIN model, represented in Figure 3B, directs Delaunay triangulation to better represent the reservoir bathymetry between survey cross-sections. The bathymetry shown in Figure 3C was used in computing reservoir elevation-capacity (Appendix I) and elevation-area (Appendix J) tables.

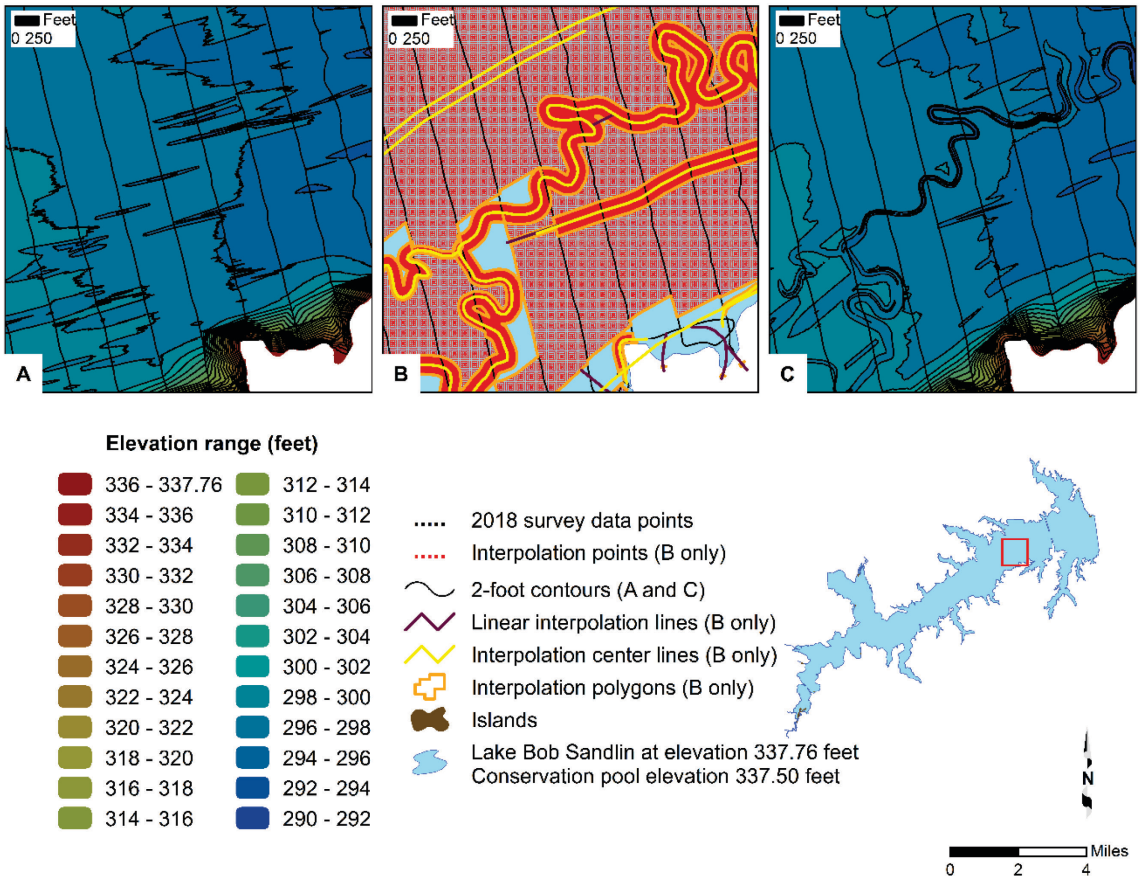


Figure 3. Anisotropic spatial interpolation and linear interpolation of Lake Bob Sandlin sounding data; A) bathymetric contours without interpolated points, B) sounding points (*black*) and interpolated points (*red*), C) bathymetric contours with interpolated points.

In 2009, the TWDB updated the spatial interpolation of the 1998 survey using the Self-Similar Interpolation method. The Self-Similar Interpolation method applies linear interpolation to add interpolated points in-between survey data transects. In 2010, the anisotropic elliptical inverse distance weighted interpolation method replaced the Self-Similar Interpolation method (Texas Water Development Board, 2016). The original 1998 survey boundary was digitized from the 340.0-foot (NGVD29) contour from 7.5-minute USGS quadrangle maps: Harvard, Texas, 1964; Monticello, Texas. 1965; Purley, Texas, 1964; and New Hope, Texas, 1965, with a stated accuracy of ± ½ the contour interval (U.S. Bureau of the Budget, 1947). While linear interpolation was used to estimate the topography in areas without data, flat triangles led to anomalous area and volume calculations at the boundary elevation of 340.0 feet. Therefore, areas between 335.0 feet and 340.0 feet (NGVD29) were linearly interpolated between the computed values, and volumes above 335.0 feet were calculated based on the corrected areas for the 1998 survey (Texas Water Development Board, 2016). The re-calculated 1998 elevation-capacity table

and elevation-area table are presented in Appendices A and B, respectively. The re-calculated capacity curve is presented in Appendix C, and the area curve is presented in Appendix D. While Self-Similar Interpolation was originally applied to the 2008 survey data and linear interpolation was used to estimate the topography in areas without data, flat triangles led to anomalous area and volume calculations at the boundary elevation of 337.5 feet. In 2016, areas between elevations 330.5 feet and 337.5 feet were linearly interpolated between the computed values, and volumes above 330.5 feet were calculated based on the corrected areas for the 2008 survey (Texas Water Development Board, 2016). The 2008 survey boundary was digitized from aerial photographs taken on August 18, 2004, while the daily average water surface elevation of the reservoir measured 336.63 feet above mean sea level. The boundary was assigned an elevation of 337.5 feet for modeling purposes. According to the associated metadata, the 2004 DOQQs have a resolution or ground sample distance of 1-meter, with a horizontal positional accuracy within ± 5 meters of reference DOQQs from the National Digital Ortho Program (U.S. Department of Agriculture, 2016). The re-calculated 2008 elevation-capacity table and elevation-area table are presented in Appendices E and F, respectively. The re-calculated capacity curve is presented in Appendix G, and the area curve is presented in Appendix H.

Area, volume, and contour calculation

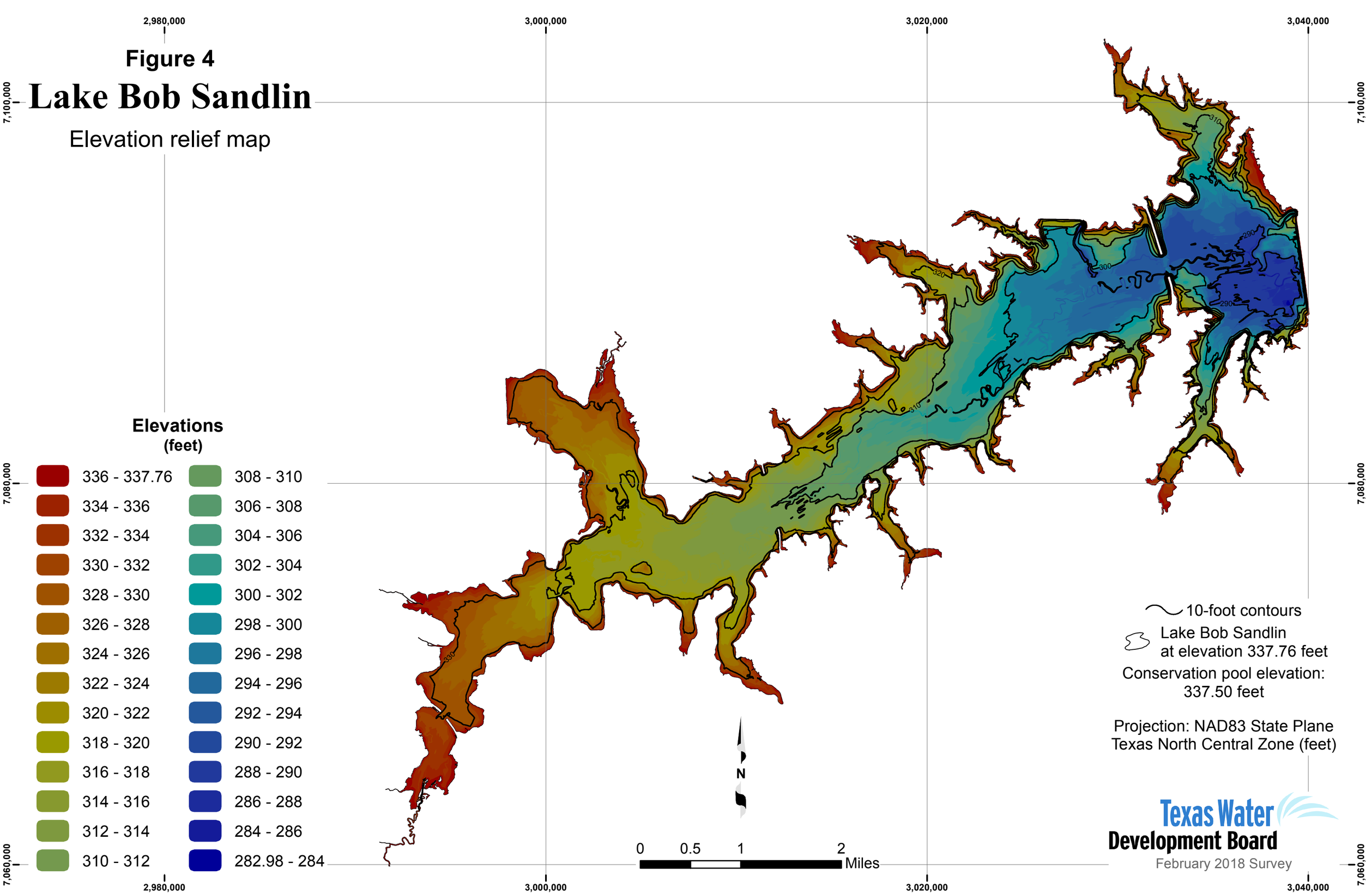
Using ArcInfo software and the volumetric TIN model, volumes and areas were computed for the entire reservoir at 0.01-foot intervals, from 282.98 to 337.76 feet. While linear interpolation was used to estimate topography in areas that were inaccessible by boat or too shallow for survey instruments to work properly, development of some flat triangles (triangles whose vertices all have the same elevation) in the TIN model are unavoidable. The flat triangles in turn lead to anomalous calculations of surface area and volume at the boundary elevation 337.76 feet. To eliminate the effects of the flat triangles on area and volume calculations, areas between elevations 335.0 and 337.76 feet were linearly interpolated between the computed values, and volumes above elevation 335.0 feet were calculated based on the corrected areas. The elevation-capacity table and elevation-area table, based on the 2018 survey and analysis, are presented in Appendices I and J, respectively. The capacity curve is presented in Appendix K, and the area curve is presented in Appendix L.

The volumetric TIN model was converted to a raster representation using a cell size of 2 feet by 2 feet. The raster data then was used to produce three figures: (1) an elevation relief map representing the topography of the reservoir bottom (Figure 4); (2) a depth range map showing shaded depth ranges for Lake Bob Sandlin (Figure 5); and, (3) a 5-foot contour map (Figure 6).

Figure 4

Lake Bob Sandlin

Elevation relief map



Elevations (feet)

336 - 337.76	308 - 310
334 - 336	306 - 308
332 - 334	304 - 306
330 - 332	302 - 304
328 - 330	300 - 302
326 - 328	298 - 300
324 - 326	296 - 298
322 - 324	294 - 296
320 - 322	292 - 294
318 - 320	290 - 292
316 - 318	288 - 290
314 - 316	286 - 288
312 - 314	284 - 286
310 - 312	282.98 - 284

10-foot contours

Lake Bob Sandlin at elevation 337.76 feet

Conservation pool elevation: 337.50 feet

Projection: NAD83 State Plane Texas North Central Zone (feet)

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Figure 5

Lake Bob Sandlin

Depth range map

2,980,000 3,000,000 3,020,000 3,040,000

7,100,000 7,080,000 7,060,000

Depth ranges
(feet)

- 0 - 5
- 5 - 10
- 10 - 15
- 15 - 20
- 20 - 25
- 25 - 30
- 30 - 35
- 35 - 40
- 40 - 45
- 45 - 50
- > 50

N

0 0.5 1 2 Miles

Conservation pool elevation: 337.50 feet

Projection: NAD83 State Plane Texas North Central Zone (feet)

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Analysis of sediment data from Lake Bob Sandlin

Sedimentation in Lake Bob Sandlin was determined by analyzing the acoustic signal returns of all three depth sounder frequencies in the DepthPic© software. While the 208 kHz signal is used to determine the current bathymetric surface, the 208 kHz, 50 kHz, and 24 kHz, are analyzed to determine the reservoir bathymetric surface at the time of initial impoundment, *i.e.*, pre-impoundment surface. Sediment core samples collected in the reservoir are correlated with the acoustic signals in each frequency to assist in identifying the pre-impoundment surface. The difference between the current surface bathymetry and the pre-impoundment surface bathymetry yields a sediment thickness value at each sounding location.

Sediment cores were analyzed at TWDB headquarters in Austin. Each core was split longitudinally and analyzed to identify the location of the pre-impoundment surface. The pre-impoundment surface was identified within the sediment core using the following methods: (1) a visual examination of the sediment core for terrestrial materials, such as leaf litter, tree bark, twigs, intact roots, *etc.*, concentrations of which tend to occur on or just below the pre-impoundment surface; (2) recording changes in texture from well sorted, relatively fine-grained sediment to poorly sorted mixtures of coarse and fine-grained materials; and, (3) identifying variations in the physical properties of the sediment, particularly sediment water content and penetration resistance with depth (Van Metre and others, 2004). Total sediment core length, post impoundment sediment thickness, and pre-impoundment thickness were recorded. Physical characteristics of the sediment core, such as Munsell soil color, texture, relative water content, and presence of organic materials were recorded (Table 2).

Table 2. Sediment core sample analysis data for Lake Bob Sandlin.

Sediment core sample	Easting[a] (feet)	Northing[a] (feet)	Total core sample/ post-impoundment sediment	Sediment core description		Munsell soil color
BS-1	2995295.21	7069229.51	41.0"/ 36.0"	post-impoundment	0.0–4.75" high water content, pudding-like silt	5Y 3/2 dark olive gray
					4.75–36.0" color change, texture change from above layer, lower water content, dense clods (pebble size to 1.5" diameter) in looser material, silty clay loam with clay clods	5Y 4/2 olive gray
				pre-impoundment	36.0–41.0" clay, low water content, very dense, significant water content decrease from above	5Y 4/2 olive gray
BS-2	2999196.17	7073222.32	32.0"/28.5"	post-impoundment	0.0–10.5" silt, pudding-like, very loose, mottling 50/50	5Y 3/1 very dark gray and 5Y 3/2 dark olive gray
					10.5–28.5" significant texture, water content, and texture change from above, similar to layer 2 in core 1, silty clay loam with clods and pockets of clay, pocket of layer 1 material at 14.0–14.75"	5Y 4/2 olive gray
				pre-impoundment	28.5–32.0" denser than above layer, small roots at boundary, clay	2.5Y 4/1 dark gray
BS-3	3004726.66	7077948.78	18.0"/N/A	post-impoundment	0.0–6.0" silt with denser clods, increasing clods with depth, high water content decreasing with depth, color gradually lightens with depth	5Y 3/2 dark olive gray at the top to 5Y 4/1 dark gray at the bottom
					6.0–14.0" high water content, silty clay loam, large sticks (0.25" diameter) in sample at 7.25–11.5" and another at 9.0–14.0", some dense clods	5Y 4/1 dark gray
					14.0–18.0" lower water content, large sticks and roots, homogenous in texture, silty clay, not as dense as bottom layers in cores 1 and 2	5Y 5/1 gray
BS-4	3010605.85	7077281.99	18.0"/6.0"	post-impoundment	0.0–6.0" loose, silt, clods of below layer near lower end (1.0" diameter)	5Y 3/2 dark olive gray
				pre-impoundment	6.0–18.5" texture, water content change from above, clay, low water content, fine roots throughout	5Y 3/2 dark olive gray

[a] Coordinates are based on NAD83 State Plane Texas North Central System (feet)

Table 2. Sediment core sample analysis data for Lake Bob Sandlin (continued).

Sediment core sample	Easting[a] (feet)	Northing[a] (feet)	Total core sample/ post-impoundment sediment		Sediment core description	Munsell soil color
BS-5	3017781.47	7083188.41	18.5”/N/A	post-impoundment	0.0–11.0” silt, high water content, pudding-like, mottled 50/50	5Y 3/1 very dark gray and 5Y 3/2 dark olive gray
					11.0–18.5” organics throughout, mid-high water content, clay, large (0.25” diameter × 2-3” long) sticks and bark	5Y 4/1 dark gray
BS-6	3021889.48	7089582.16	24.5”/7.0”	post-impoundment	0.0–7.0” silt, high water content, pudding-like, mottled 50/50	5Y 3/1 very dark gray and 5Y 3/2 dark olive gray
				pre-impoundment	7.0–24.5” pronounced water content decrease and texture and color changes, sandy clay loam, organics at top (leaf and bark litter)	2.5Y 4/1 dark gray
BS-7	3026186.52	7089232.28	18.5”/N/A	post-impoundment	0.0–7.0” silt, mottled, pudding-like, very high water content	5Y 3/1 very dark gray and 5Y 3/2 dark olive gray
					7.0–8.0” layer of silty clay with many small pebbles (< 0.5” diameter), same base material as below layer	2.5 Y 3/1 very dark gray
					8.0–18.5” silty clay, lower water content, texture change from layer 1, small clods of darker loam throughout, fine roots throughout, non-uniform texture	2.5Y 3/1 very dark gray
BS-8	3030258.70	7089150.21	24.5”/22.0”	post-impoundment	0.0–10.5” silt, pudding-like, high water content, mottled	5Y 3/1 very dark gray and 5Y 3/2 dark olive gray
					10.5–22.0”, mid-high water content, looser in spots, silty clay loam	2.5Y 3/1 very dark gray
				pre-impoundment	22.0–24.5”, very dense clay, many roots throughout	2.5Y 3/1 very dark gray

[a] Coordinates are based on NAD83 State Plane Texas North Central System (feet)

Table 2. Sediment core sample analysis data for Lake Bob Sandlin (continued).

Sediment core sample	Easting[a] (feet)	Northing[a] (feet)	Total core sample/ post-impoundment sediment	Sediment core description		Munsell soil color
BS-9	3035483.22	7095001.25	23.75”/10.5”	post-impoundment	0.0–10.5” silt, pudding-like, high water content, mottled	5Y 3/1 very dark gray and 5Y 3/2 dark olive gray
				pre-impoundment	10.5–11.0” organics, leaf/bark/twigs	2.5Y 2.5/1 black
					11.0–23.75” very dense clay, roots throughout	2.5Y 3/1 very dark gray
BS-10	3035654.80	7088149.14	18.5”/8.0”	post-impoundment	0.0–8.0” silt, mottled	5Y 3/1 very dark gray and 5Y 3/2 dark olive gray
				pre-impoundment	8.0–18.5” dense clay loam, low water content	2.5Y 4/2 dark grayish brown

[a] Coordinates are based on NAD83 State Plane Texas North Central System (feet)

A photograph of sediment core BS-5 (for location, refer to Figure 2) is shown in Figure 7 and is representative of sediment cores sampled from Lake Bob Sandlin. The base of the sample is denoted by the blue line. Sediment core BS-5 contained 18.5 inches of post-impoundment sediment. The pre-impoundment boundary typically identified by a change in color, texture, moisture, porosity, and structure was not identified within this core. Identification of the pre-impoundment surface for each sediment core followed a similar procedure.

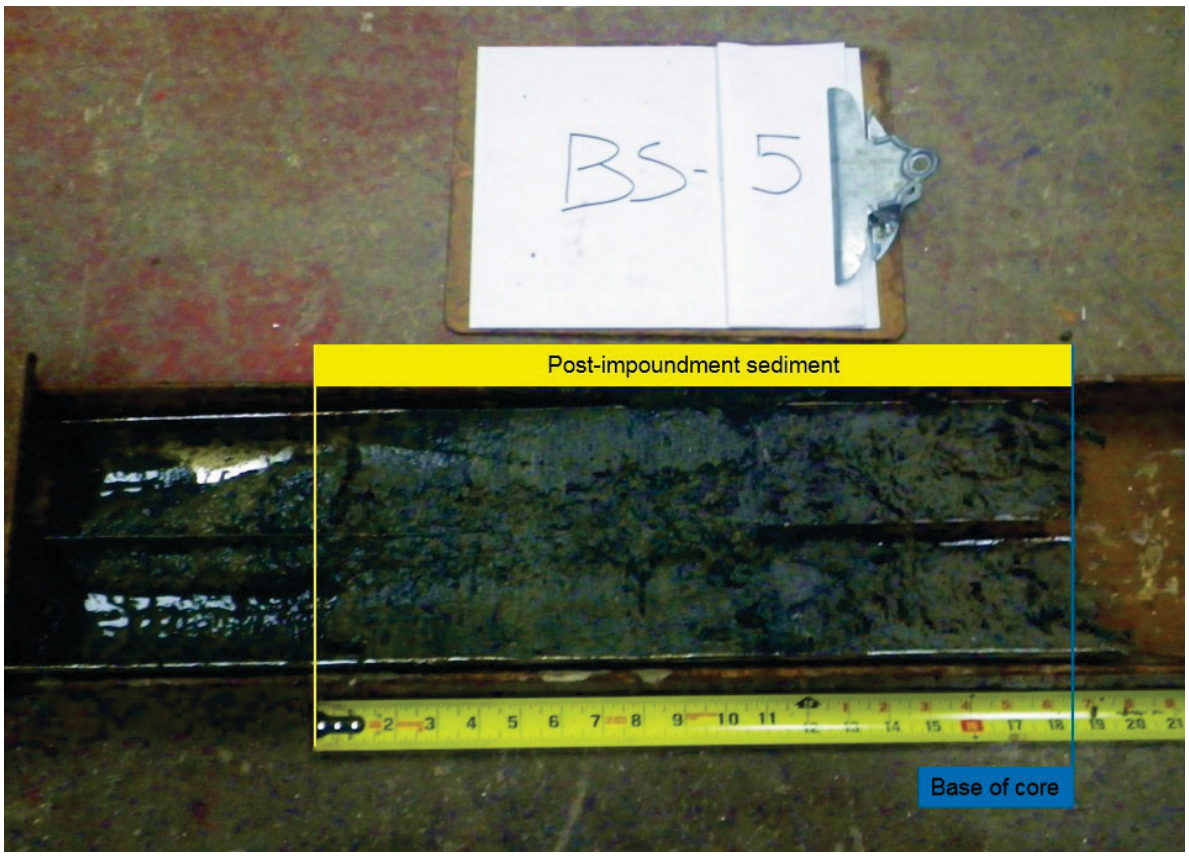

Figure 7. Sediment core BS-5 from Lake Bob Sandlin. Post-impoundment sediment layers occur in the 18.5 inches of this sediment core (identified by the yellow box). No pre-impoundment sediments were identified.

Figures 8 and 9 illustrate how measurements from sediment core samples are used with sonar data to help identify the post- and pre-impoundment layers in the acoustic signal. Figure 8 compares sediment core sample BS-5 with the acoustic signals for each frequency combined (8A, 8A'), and the individual frequencies: 208 kHz (8B, 8B'), 50 kHz (8C, 8C'), and 24 kHz (8D, 8D'). Within DepthPic©, the current bathymetric surface is automatically determined based on signal returns from the 208 kHz transducer as represented by the top black line in Figure 8A' and red line in Figures 8B', 8C', and 8D'. The pre-impoundment

surface is identified by comparing boundaries observed in the 208 kHz, 50 kHz, and 24 kHz signals to the location of the pre-impoundment surface as determined by the sediment core sample analysis. Many layers of sediment may be identified during core analysis based on changes in observed characteristics, such as water content, organic matter content, and sediment particle size, and each layer is classified as either post-impoundment or pre-impoundment. Each layer of sediment identified in the sediment core sample during analysis (Table 2) is represented in Figures 8 and 9 by a yellow or blue box. A yellow box represents post-impoundment sediments. Pre-impoundment sediments, if identified, are represented by a blue box.

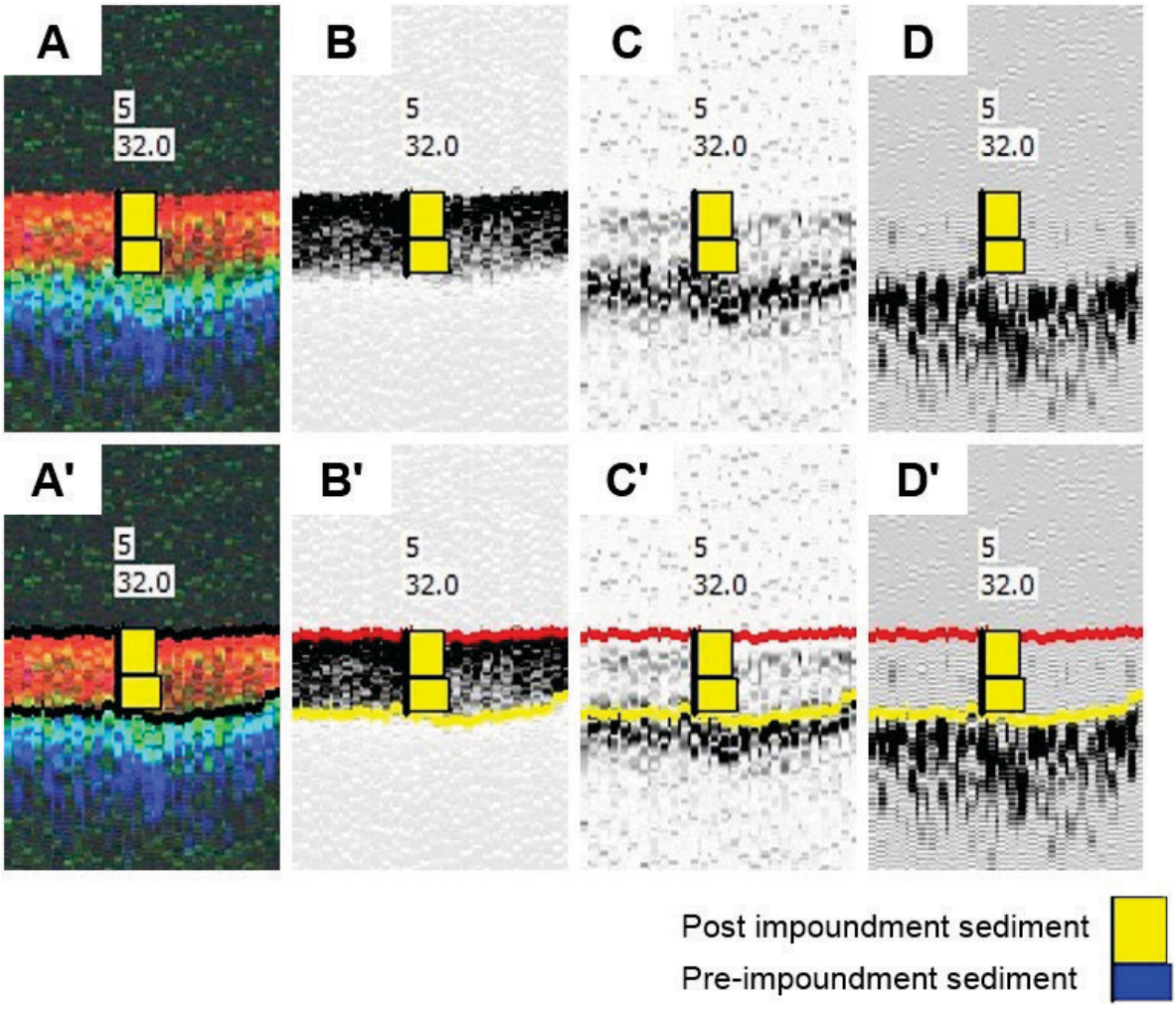

Figure 8. Comparison of sediment core BS-5 with acoustic signal returns A, A') combined acoustic signal returns, B, B') 208 kHz frequency, C, C') 50 kHz frequency, and D, D') 24 kHz frequency.

In this case, the pre-impoundment boundary as identified from the pre-impoundment interface of the sediment core sample was most visible in the 50 kHz acoustic

signal returns; therefore, the 50 kHz signal returns were used to locate the pre-impoundment surface (yellow line in Figure 8). Figure 9 shows sediment core sample BS-5 correlated with the 50 kHz acoustic signal returns of the nearest surveyed cross-section. The pre-impoundment surface was first identified along cross-sections for which sediment core samples have been collected. This information was then used as a guide for identifying the pre-impoundment surface along cross-sections where sediment core samples were not collected.

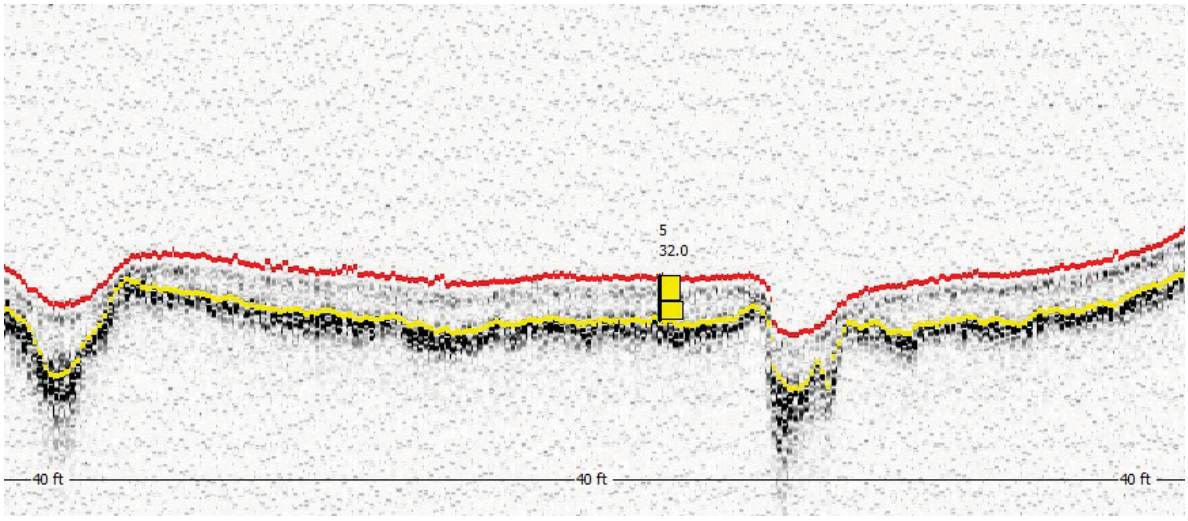

Figure 9. Cross-section of data collected during the 2018 survey, displayed in DepthPic© (50 kHz acoustic signal returns), correlated with sediment core sample BS-5 and showing the current surface as the top red line, and pre-impoundment surface as the bottom yellow line.

After the pre-impoundment surface for all cross-sections was identified, a pre-impoundment TIN model and a sediment thickness TIN model were created following standard GIS techniques (Furnans and Austin, 2007). Pre-impoundment elevations and sediment thicknesses were interpolated between surveyed cross-sections using HydroTools after modifying the interpolation definition file used for bathymetric interpolation. For the purposes of TIN model creation, the TWDB assumed the sediment thickness at the reservoir boundary was 0 feet (defined as the 337.76-foot elevation contour). The sediment thickness TIN model was converted to a raster representation using a cell size of 5 feet by 5 feet and was used to produce a sediment thickness map of Lake Bob Sandlin (Figure 10). Using ArcInfo software, the pre-impoundment TIN model was used to compute elevation-capacity and elevation-area tables for the purpose of calculating the total volume of accumulated sediment.

Although linear interpolation was used to estimate topography in areas inaccessible by boat or too shallow for the instruments to work properly, development of some flat

triangles (triangles whose vertices all have the same elevation) in the TIN model are unavoidable. The flat triangles in turn lead to anomalous calculations of surface area and volume at the boundary elevation 337.76 feet. To eliminate the effects of the flat triangles on area and volume calculations, areas between elevations 334.8 and 337.76 feet were linearly interpolated between the computed values, and volumes above elevation 337.76 feet were calculated based on the corrected areas.

The TWDB sedimentation survey results may not account for all sediment accumulation in areas exposed during low water levels, as occurred between June 2010 and March 2015, due to desiccation of the sediment. Upon inundation and re-saturation, exposed sediment will not return to its original high level of water content (Dunbar and Allen, 2003). Drying of sediment in exposed areas create hard surfaces that cannot be penetrated with gravity coring techniques, and compressive stresses on the sediments may also increase sediment density, inhibiting the measurement of the original, pre-impoundment surface. Density stratification in the sediment layers can also scatter and attenuate acoustic return signals of the multi-frequency depth sounder (U.S. Army Corps of Engineers, 2013).

Figure 10

Lake Bob Sandlin

Sediment thickness map

2,980,000 3,000,000 3,020,000 3,040,000

7,100,000 7,080,000 7,060,000

Sediment thickness (feet)

- 0 - 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- 2.0 - 2.5
- 2.5 - 3.0
- 3.0 - 3.5
- > 3.5

N

0 0.5 1 2 Miles

Lake Bob Sandlin
at elevation 337.76 feet

Conservation pool elevation:
337.50 feet

Projection: NAD83 State Plane
Texas North Central Zone (feet)

Texas Water Development Board

February 2018 Survey

Survey results

Volumetric survey

The 2018 TWDB volumetric survey indicates that Lake Bob Sandlin has a total reservoir capacity of 203,148 acre-feet and encompasses 8,888 acres at conservation pool elevation (337.5 feet above mean sea level, NGVD29). The original design capacity was estimated at 213,350 acre-feet. Re-evaluation of the 1998 and 2008 surveys resulted in updated capacity estimates of 206,701 acre-feet and 202,313 acre-feet, respectively, or a 0.99 and 0.29 percent increase in total capacity, respectively (Table 3). Differences in surface area are most likely attributable to differences in reservoir boundary delineation methods. Because of differences in past and present survey methodologies, direct comparison of volumetric surveys to others to estimate loss of area and capacity can be unreliable.

Table 3. Current and previous survey capacity and surface area estimates for Lake Bob Sandlin.

Top of conservation pool elevation (337.5 feet, NGVD29)			
Survey	**Surface area (acres)**	**Total capacity (acre-feet)**	**Source**
Original design	9,460	213,350	Texas Water Development Board, 1973
TWDB 1998	9,004	204,678	Texas Water Development Board, 1998
TWDB 1998 (re-calculated)	8,994	206,701	Texas Water Development Board, 2016
TWDB 2008	8,703	201,733	Texas Water Development Board, 2008
TWDB 2008 (re-calculated)	8,703	202,313	Texas Water Development Board, 2016
TWDB 2018	8,888	203,148	

Sedimentation survey

The 2018 TWDB sedimentation survey indicates Lake Bob Sandlin has lost capacity at an average of 191 acre-feet per year since impoundment due to sedimentation below conservation pool elevation (337.5 feet NGVD29). The sedimentation survey indicates sediment accumulation is occurring throughout the reservoir. Comparison of capacity estimates of Lake Bob Sandlin derived using differing methodologies are provided in Table 4 for sedimentation rate calculation.

Table 4. Average annual capacity loss comparisons for Lake Bob Sandlin.

Survey	Volume comparisons at top of conservation pool elevation 337.5 feet (acre-feet)			
Original design[a]	213,350	<>	<>	<>
TWDB 1998 (re-calculated)	<>	206,701	<>	<>
TWDB 2008 (re-calculated)	<>	<>	202,313	<>
TWDB pre-impoundment estimate based on 2018 survey	<>	<>	<>	210,978
2018 volumetric survey	203,148	203,148	203,148	203,148
Volume difference (acre-feet)	10,202 (4.8%)	3,553 (1.7%)	-835 (-0.4%)	7,830 (3.7%)
Number of years	41	20	10	41
Capacity loss rate (acre-feet/year)	249	178	-84	191
Capacity loss rate (acre-feet/square mile of drainage area of 239[a] square miles /year)	1.04	0.74	-0.35	0.80

[a] Source: (Texas Water Development Board, 1973, Texas Water Development Board, 1998), note: Fort Sherman Dam was completed in April 1978 and the deliberate impoundment began on August 8, 1977.

While the results of the 2018 TWDB survey indicate an increase in volume of 835 acre-feet since the 2008 TWDB survey, it is highly unlikely that the reservoir is gaining capacity. The difference, 0.4 percent, is within the error margins of both reservoir surveys and is likely a result of differences in survey data coverage, reservoir boundary delineation, and TIN model generation.

Sediment range lines

In 1998, the TWDB established six sediment range lines throughout Lake Bob Sandlin to measure sediment accumulation over time. A cross-sectional comparison of the six sediment range lines comparing the current bottom surface from the 2018 TWDB survey, the 2008 TWDB survey, and the 1998 TWDB re-calculated survey is presented in Appendix M. Also presented in Appendix M are a map, depicting the locations of the sediment range lines and Table M1, a list of the endpoint coordinates for each line. Some differences in the cross-sections may be a result of spatial interpolation and the interpolation routine of the TIN Model.

Recommendations

The TWDB recommends a detailed analysis of sediment deposits in the areas where exposure of the lake bottom may have led to identification of a false pre-impoundment using augured-coring techniques, as well as a volumetric and sedimentation survey in 10 years or after a major flood event to further improve estimates of sediment accumulation rates.

TWDB contact information

More information about the Hydrographic Survey Program can be found at:
http://www.twdb.texas.gov/surfacewater/surveys/index.asp
Any questions regarding the TWDB Hydrographic Survey Program may be addressed to:
Hydrosurvey@twdb.texas.gov

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Appendix A

Lake Bob Sandlin

RESERVOIR CAPACITY TABLE

TEXAS WATER DEVELOPMENT BOARD
CAPACITY IN ACRE-FEET
ELEVATION INCREMENT IS ONE TENTH FOOT

February 1998 Survey re-calculated October 2016
Conservation Pool Elevation 337.5 Feet NGVD 29

ELEVATION in Feet	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
281	0	0	0	0	0	0	0	0	0	0
282	0	0	0	0	0	0	0	0	0	0
283	0	0	1	1	1	1	1	1	2	2
284	2	2	3	3	3	4	4	5	5	6
285	6	7	7	8	9	10	11	12	14	16
286	17	20	22	25	28	31	35	39	44	49
287	56	62	70	79	89	99	111	124	138	153
288	170	187	205	225	246	268	291	316	343	371
289	400	431	463	496	531	568	606	645	687	730
290	776	823	872	923	974	1,028	1,082	1,138	1,195	1,253
291	1,312	1,373	1,435	1,498	1,562	1,627	1,694	1,762	1,832	1,903
292	1,975	2,048	2,123	2,199	2,275	2,354	2,433	2,513	2,595	2,678
293	2,762	2,848	2,935	3,024	3,114	3,206	3,299	3,394	3,491	3,589
294	3,688	3,789	3,891	3,994	4,099	4,206	4,314	4,423	4,535	4,648
295	4,763	4,880	4,999	5,119	5,241	5,365	5,490	5,618	5,748	5,880
296	6,014	6,149	6,287	6,426	6,566	6,708	6,852	6,997	7,144	7,292
297	7,441	7,592	7,745	7,899	8,054	8,211	8,369	8,529	8,690	8,852
298	9,016	9,181	9,347	9,515	9,685	9,856	10,028	10,202	10,377	10,554
299	10,733	10,913	11,095	11,278	11,462	11,648	11,835	12,024	12,214	12,405
300	12,597	12,791	12,986	13,182	13,379	13,577	13,776	13,977	14,178	14,380
301	14,584	14,789	14,995	15,203	15,412	15,624	15,836	16,051	16,267	16,484
302	16,703	16,924	17,146	17,370	17,596	17,823	18,053	18,283	18,516	18,750
303	18,985	19,223	19,462	19,703	19,945	20,190	20,435	20,682	20,931	21,180
304	21,431	21,684	21,937	22,192	22,448	22,705	22,964	23,223	23,484	23,747
305	24,010	24,275	24,541	24,809	25,079	25,349	25,621	25,895	26,170	26,446
306	26,724	27,003	27,283	27,565	27,848	28,132	28,418	28,705	28,993	29,282
307	29,573	29,865	30,158	30,452	30,748	31,045	31,343	31,642	31,942	32,244
308	32,547	32,851	33,156	33,463	33,771	34,080	34,390	34,702	35,015	35,330
309	35,646	35,964	36,284	36,606	36,930	37,255	37,582	37,911	38,241	38,572
310	38,906	39,240	39,577	39,914	40,254	40,596	40,940	41,286	41,633	41,982
311	42,333	42,686	43,040	43,396	43,754	44,113	44,474	44,837	45,202	45,569
312	45,938	46,308	46,681	47,055	47,431	47,810	48,191	48,574	48,959	49,346
313	49,735	50,126	50,519	50,914	51,311	51,709	52,110	52,512	52,916	53,322
314	53,730	54,140	54,551	54,964	55,380	55,797	56,216	56,637	57,059	57,484
315	57,910	58,338	58,768	59,200	59,633	60,069	60,506	60,945	61,385	61,827
316	62,271	62,717	63,164	63,613	64,063	64,516	64,970	65,426	65,884	66,344
317	66,806	67,270	67,736	68,204	68,675	69,147	69,623	70,100	70,580	71,063
318	71,548	72,036	72,526	73,018	73,513	74,010	74,509	75,012	75,516	76,024
319	76,534	77,047	77,562	78,080	78,600	79,123	79,649	80,177	80,707	81,240
320	81,775	82,312	82,851	83,392	83,935	84,481	85,028	85,577	86,128	86,681
321	87,236	87,793	88,352	88,912	89,475	90,039	90,606	91,173	91,743	92,314
322	92,887	93,462	94,038	94,616	95,196	95,777	96,360	96,945	97,531	98,119
323	98,709	99,300	99,894	100,488	101,085	101,683	102,284	102,886	103,490	104,095
324	104,703	105,313	105,925	106,538	107,153	107,771	108,390	109,011	109,634	110,259
325	110,886	111,515	112,147	112,780	113,416	114,053	114,693	115,335	115,979	116,626
326	117,275	117,927	118,581	119,237	119,897	120,560	121,226	121,895	122,566	123,240
327	123,916	124,595	125,276	125,959	126,644	127,333	128,023	128,716	129,412	130,109
328	130,810	131,512	132,217	132,924	133,634	134,345	135,059	135,775	136,493	137,214
329	137,936	138,661	139,387	140,115	140,846	141,579	142,314	143,050	143,789	144,530
330	145,272	146,017	146,764	147,512	148,263	149,015	149,770	150,527	151,285	152,046
331	152,809	153,574	154,340	155,108	155,879	156,651	157,426	158,202	158,980	159,761
332	160,543	161,327	162,113	162,901	163,691	164,483	165,277	166,073	166,871	167,671
333	168,473	169,276	170,082	170,889	171,699	172,511	173,324	174,140	174,957	175,776
334	176,598	177,421	178,247	179,074	179,904	180,736	181,570	182,406	183,244	184,085
335	184,926	185,770	186,616	187,464	188,315	189,168	190,023	190,880	191,740	192,602
336	193,466	194,332	195,201	196,072	196,945	197,821	198,699	199,579	200,461	201,346
337	202,233	203,122	204,013	204,907	205,803	206,701	207,602	208,505	209,410	210,317
338	211,227	212,139	213,053	213,969	214,888	215,809	216,733	217,658	218,586	219,516
339	220,448	221,383	222,320	223,259	224,201	225,144	226,090	227,039	227,989	228,942
340	229,897									

Note: Capacities above elevation 335.0 feet calculated from interpolated areas

Appendix B

Lake Bob Sandlin

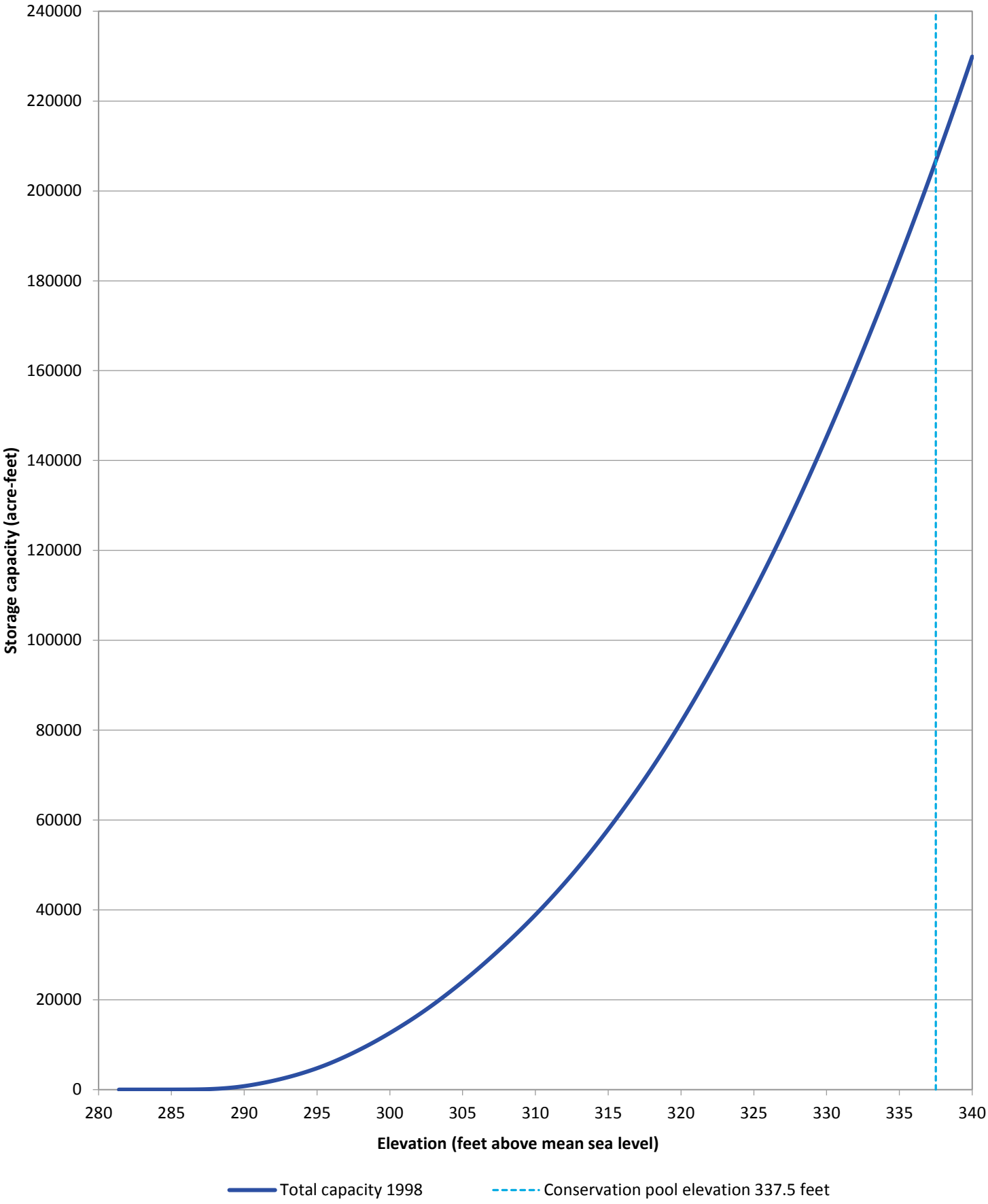
RESERVOIR AREA TABLE

TEXAS WATER DEVELOPMENT BOARD
AREA IN ACRES
ELEVATION INCREMENT IS ONE TENTH FOOT

February 1998 Survey re-calculated October 2016
Conservation Pool Elevation 337.5 Feet NGVD 29

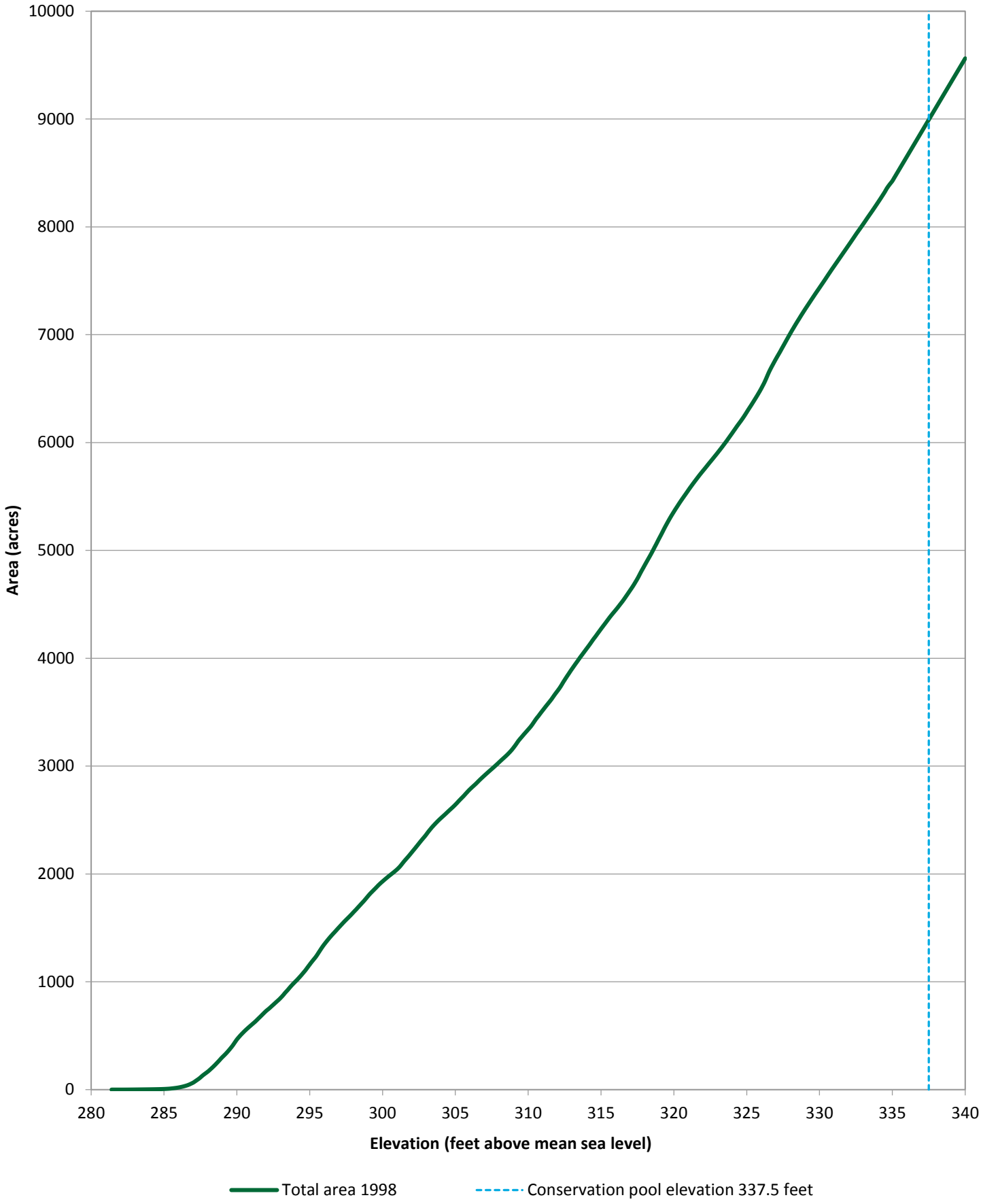
ELEVATION in Feet	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
281	0	0	0	0	0	0	0	0	0	0
282	0	0	0	0	0	0	0	1	1	1
283	1	1	1	1	2	2	2	2	2	2
284	3	3	3	3	4	4	4	4	5	5
285	6	6	7	8	9	11	12	14	15	17
286	20	22	25	28	32	36	40	45	51	58
287	65	73	83	92	102	113	125	136	146	156
288	166	178	190	202	215	229	243	257	271	287
289	301	314	327	342	357	373	389	406	426	445
290	465	481	496	511	525	539	552	564	576	588
291	600	612	623	635	649	662	675	689	702	715
292	728	740	750	762	775	787	799	812	824	836
293	850	864	879	896	911	925	941	957	972	986
294	1,000	1,013	1,027	1,042	1,057	1,073	1,089	1,105	1,123	1,142
295	1,160	1,178	1,194	1,211	1,228	1,247	1,268	1,288	1,309	1,329
296	1,347	1,364	1,381	1,398	1,414	1,429	1,444	1,459	1,473	1,489
297	1,503	1,518	1,532	1,547	1,561	1,575	1,588	1,602	1,615	1,629
298	1,644	1,658	1,672	1,687	1,702	1,717	1,732	1,746	1,762	1,778
299	1,794	1,810	1,824	1,838	1,851	1,865	1,879	1,893	1,906	1,919
300	1,930	1,942	1,954	1,965	1,976	1,987	1,998	2,008	2,019	2,031
301	2,042	2,056	2,070	2,086	2,103	2,120	2,136	2,151	2,166	2,183
302	2,199	2,216	2,232	2,249	2,266	2,283	2,300	2,316	2,332	2,348
303	2,365	2,384	2,401	2,417	2,434	2,448	2,463	2,477	2,491	2,504
304	2,516	2,529	2,541	2,553	2,566	2,579	2,592	2,604	2,616	2,629
305	2,643	2,656	2,671	2,686	2,699	2,713	2,727	2,742	2,757	2,772
306	2,785	2,798	2,810	2,823	2,835	2,848	2,862	2,875	2,888	2,901
307	2,913	2,925	2,938	2,950	2,962	2,973	2,985	2,998	3,010	3,022
308	3,035	3,048	3,060	3,073	3,085	3,097	3,111	3,124	3,139	3,155
309	3,172	3,190	3,209	3,229	3,246	3,262	3,277	3,293	3,309	3,324
310	3,339	3,355	3,371	3,390	3,409	3,429	3,448	3,464	3,482	3,500
311	3,517	3,535	3,552	3,569	3,586	3,603	3,620	3,640	3,659	3,677
312	3,695	3,713	3,733	3,754	3,777	3,798	3,819	3,840	3,860	3,881
313	3,900	3,919	3,939	3,958	3,976	3,996	4,015	4,033	4,051	4,069
314	4,087	4,105	4,124	4,143	4,162	4,181	4,198	4,217	4,236	4,254
315	4,272	4,290	4,308	4,326	4,344	4,362	4,380	4,398	4,414	4,430
316	4,446	4,463	4,480	4,498	4,515	4,533	4,552	4,571	4,591	4,611
317	4,630	4,650	4,671	4,692	4,715	4,738	4,763	4,790	4,814	4,839
318	4,863	4,887	4,911	4,935	4,959	4,984	5,010	5,036	5,061	5,088
319	5,114	5,139	5,166	5,192	5,219	5,243	5,268	5,292	5,315	5,337
320	5,359	5,381	5,401	5,422	5,443	5,463	5,482	5,502	5,521	5,540
321	5,560	5,579	5,598	5,616	5,634	5,652	5,670	5,688	5,705	5,722
322	5,738	5,755	5,772	5,788	5,805	5,822	5,838	5,855	5,871	5,888
323	5,905	5,922	5,940	5,957	5,975	5,993	6,011	6,030	6,049	6,068
324	6,087	6,107	6,126	6,145	6,164	6,182	6,201	6,220	6,239	6,260
325	6,282	6,303	6,324	6,345	6,366	6,388	6,410	6,432	6,454	6,477
326	6,502	6,527	6,553	6,583	6,614	6,645	6,673	6,700	6,725	6,750
327	6,774	6,798	6,821	6,845	6,869	6,894	6,918	6,942	6,966	6,990
328	7,014	7,037	7,060	7,083	7,105	7,127	7,149	7,171	7,192	7,213
329	7,235	7,255	7,276	7,296	7,316	7,337	7,357	7,377	7,397	7,417
330	7,436	7,456	7,476	7,496	7,516	7,537	7,557	7,577	7,597	7,617
331	7,636	7,656	7,675	7,695	7,714	7,734	7,754	7,773	7,792	7,812
332	7,831	7,851	7,871	7,891	7,911	7,931	7,950	7,969	7,988	8,007
333	8,027	8,046	8,066	8,086	8,106	8,125	8,144	8,164	8,184	8,204
334	8,225	8,245	8,265	8,286	8,307	8,329	8,353	8,373	8,391	8,409
335	8,426	8,449	8,471	8,494	8,517	8,540	8,562	8,585	8,608	8,630
336	8,653	8,676	8,699	8,721	8,744	8,767	8,790	8,812	8,835	8,858
337	8,881	8,903	8,926	8,949	8,971	8,994	9,017	9,040	9,062	9,085
338	9,108	9,131	9,153	9,176	9,199	9,222	9,244	9,267	9,290	9,312
339	9,335	9,358	9,381	9,403	9,426	9,449	9,472	9,494	9,517	9,540
340	9,563									

Note: Areas between elevations 335.0 and 340.0 feet linearly interpolated



Lake Bob Sandlin
February 1998 Survey
re-calculated October 2016
Prepared by: TWDB

Appendix C: Capacity curve



Lake Bob Sandlin
February 1998 Survey
re-calculated October 2016
Prepared by: TWDB

Appendix D: Area curve

Appendix E

Lake Bob Sandlin

RESERVOIR CAPACITY TABLE

TEXAS WATER DEVELOPMENT BOARD
CAPACITY IN ACRE-FEET
ELEVATION INCREMENT IS ONE TENTH FOOT

November 2008 Survey re-calculated October 2016
Conservation Pool Elevation 337.5 Feet NGVD 29

ELEVATION in Feet	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
283	0	0	0	0	0	0	0	0	0	1
284	1	1	1	1	2	2	2	3	3	4
285	4	5	5	6	6	7	8	8	9	10
286	11	12	13	14	15	16	18	20	22	24
287	26	29	32	35	39	43	47	52	57	63
288	70	78	86	96	108	120	134	149	165	182
289	200	220	241	263	286	310	336	363	391	421
290	452	484	517	551	586	623	661	700	741	784
291	829	877	926	978	1,031	1,086	1,142	1,200	1,258	1,318
292	1,379	1,441	1,503	1,567	1,632	1,698	1,766	1,834	1,904	1,976
293	2,048	2,122	2,197	2,273	2,350	2,429	2,508	2,589	2,671	2,754
294	2,839	2,924	3,012	3,101	3,192	3,284	3,378	3,473	3,570	3,668
295	3,767	3,868	3,971	4,075	4,181	4,289	4,398	4,510	4,623	4,738
296	4,854	4,973	5,094	5,216	5,341	5,468	5,597	5,727	5,860	5,994
297	6,129	6,267	6,406	6,546	6,689	6,833	6,978	7,126	7,274	7,424
298	7,575	7,728	7,882	8,038	8,194	8,353	8,512	8,674	8,836	9,001
299	9,167	9,335	9,505	9,676	9,848	10,022	10,197	10,374	10,551	10,730
300	10,911	11,093	11,276	11,461	11,648	11,836	12,026	12,217	12,410	12,604
301	12,800	12,997	13,195	13,394	13,595	13,797	14,000	14,205	14,410	14,617
302	14,826	15,036	15,247	15,460	15,675	15,891	16,108	16,327	16,548	16,770
303	16,994	17,220	17,447	17,676	17,906	18,138	18,371	18,606	18,843	19,081
304	19,320	19,562	19,805	20,049	20,295	20,542	20,791	21,041	21,292	21,545
305	21,799	22,054	22,311	22,569	22,828	23,088	23,350	23,614	23,878	24,145
306	24,412	24,681	24,951	25,223	25,496	25,771	26,046	26,324	26,602	26,882
307	27,163	27,446	27,730	28,016	28,303	28,592	28,883	29,175	29,469	29,764
308	30,061	30,359	30,658	30,959	31,260	31,563	31,868	32,173	32,480	32,788
309	33,097	33,408	33,720	34,033	34,348	34,663	34,981	35,299	35,619	35,941
310	36,264	36,588	36,914	37,241	37,570	37,901	38,232	38,565	38,900	39,236
311	39,574	39,914	40,255	40,598	40,943	41,289	41,638	41,989	42,341	42,696
312	43,053	43,412	43,773	44,136	44,502	44,869	45,239	45,612	45,986	46,363
313	46,742	47,123	47,507	47,892	48,279	48,669	49,061	49,455	49,851	50,250
314	50,650	51,054	51,459	51,866	52,275	52,687	53,100	53,516	53,934	54,354
315	54,775	55,199	55,624	56,052	56,481	56,912	57,345	57,780	58,217	58,656
316	59,096	59,539	59,984	60,430	60,878	61,328	61,781	62,235	62,691	63,150
317	63,610	64,073	64,537	65,004	65,474	65,946	66,421	66,899	67,380	67,865
318	68,352	68,842	69,335	69,830	70,328	70,828	71,331	71,837	72,345	72,856
319	73,369	73,884	74,402	74,923	75,445	75,970	76,497	77,026	77,557	78,090
320	78,625	79,162	79,702	80,243	80,786	81,332	81,880	82,430	82,981	83,535
321	84,091	84,648	85,208	85,770	86,333	86,898	87,466	88,035	88,605	89,178
322	89,752	90,328	90,906	91,485	92,067	92,650	93,234	93,821	94,409	94,999
323	95,591	96,184	96,780	97,376	97,975	98,575	99,177	99,781	100,386	100,994
324	101,602	102,213	102,826	103,440	104,056	104,674	105,295	105,917	106,541	107,167
325	107,795	108,425	109,057	109,691	110,327	110,965	111,605	112,248	112,893	113,540
326	114,189	114,841	115,495	116,151	116,810	117,471	118,135	118,801	119,470	120,140
327	120,813	121,488	122,166	122,845	123,527	124,211	124,898	125,588	126,279	126,973
328	127,670	128,368	129,069	129,771	130,476	131,183	131,893	132,604	133,318	134,034
329	134,752	135,472	136,194	136,917	137,643	138,371	139,100	139,832	140,565	141,300
330	142,037	142,775	143,516	144,258	145,001	145,746	146,493	147,242	147,992	148,744
331	149,498	150,254	151,011	151,771	152,532	153,294	154,059	154,825	155,593	156,363
332	157,135	157,908	158,684	159,461	160,239	161,020	161,802	162,586	163,372	164,160
333	164,949	165,741	166,534	167,328	168,125	168,923	169,723	170,525	171,329	172,134
334	172,941	173,750	174,561	175,374	176,188	177,004	177,822	178,642	179,463	180,286
335	181,111	181,938	182,766	183,597	184,429	185,263	186,098	186,936	187,775	188,616
336	189,459	190,303	191,149	191,997	192,847	193,699	194,552	195,407	196,264	197,123
337	197,984	198,846	199,710	200,576	201,443	202,313				

Note: Capacities above elevation 330.5 feet calculated from interpolated areas

Appendix F

Lake Bob Sandlin

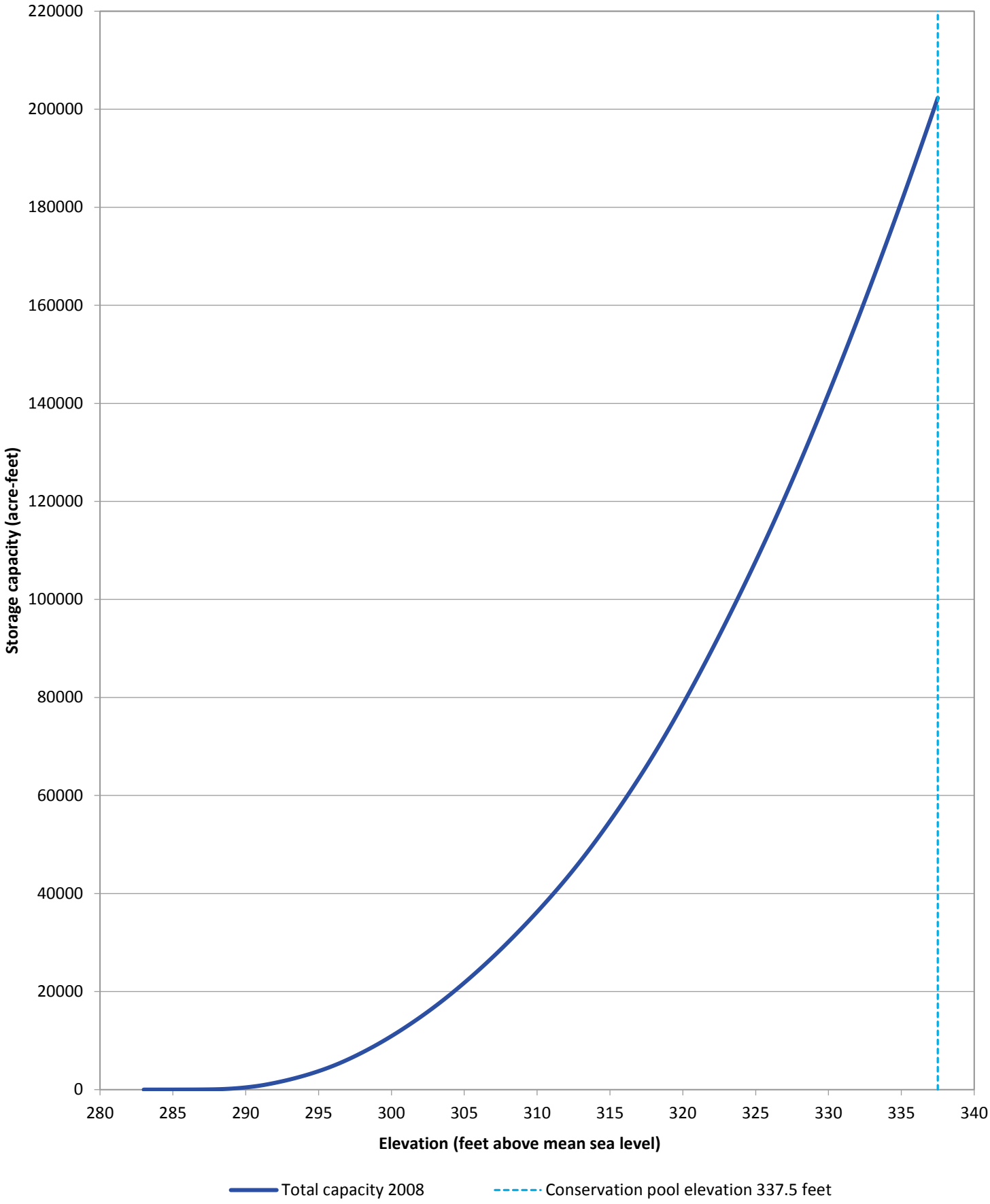
RESERVOIR AREA TABLE

TEXAS WATER DEVELOPMENT BOARD
AREA IN ACRES
ELEVATION INCREMENT IS ONE TENTH FOOT

November 2008 Survey re-calculated October 2016
Conservation Pool Elevation 337.5 Feet NGVD 29

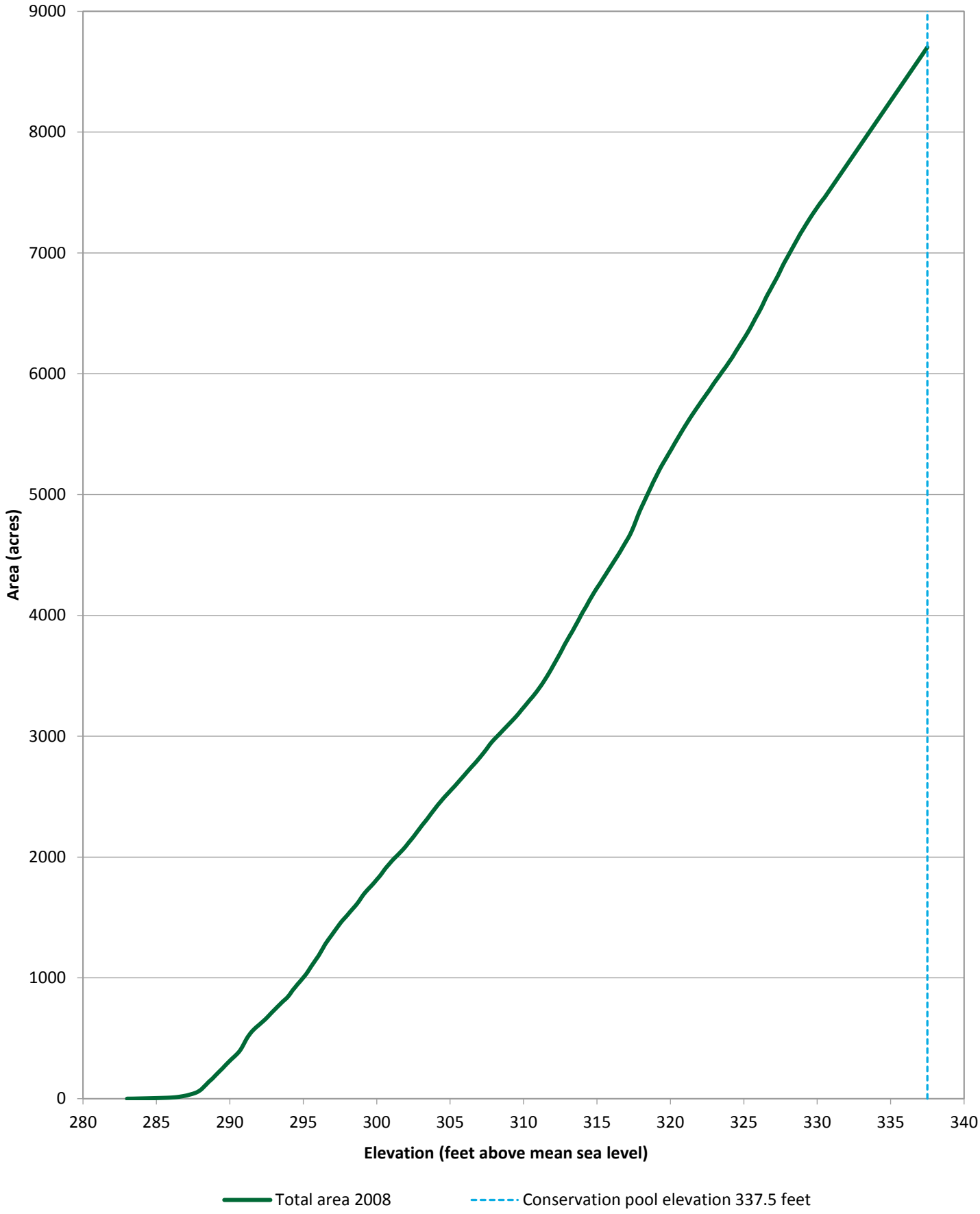
ELEVATION in Feet	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
283	0	0	0	0	0	1	1	1	1	2
284	2	2	2	3	3	3	4	4	4	4
285	5	5	5	6	6	7	7	7	8	8
286	9	10	11	12	13	15	17	19	21	23
287	25	28	31	35	38	41	46	50	56	63
288	71	82	94	106	118	131	143	154	165	177
289	190	202	215	227	239	251	264	277	289	301
290	314	325	337	348	359	372	385	400	419	441
291	464	487	507	524	541	556	569	580	592	602
292	612	623	634	645	656	667	680	693	706	718
293	731	743	755	767	779	792	803	814	825	837
294	851	866	884	901	915	930	945	959	973	987
295	1,002	1,017	1,032	1,050	1,068	1,087	1,105	1,123	1,141	1,159
296	1,176	1,195	1,216	1,237	1,258	1,280	1,297	1,315	1,331	1,348
297	1,365	1,382	1,399	1,415	1,432	1,449	1,465	1,479	1,492	1,505
298	1,519	1,534	1,548	1,562	1,576	1,589	1,604	1,619	1,636	1,654
299	1,672	1,689	1,704	1,718	1,732	1,745	1,757	1,770	1,784	1,798
300	1,813	1,827	1,841	1,857	1,873	1,890	1,906	1,921	1,935	1,949
301	1,963	1,976	1,989	2,001	2,013	2,025	2,038	2,050	2,064	2,077
302	2,092	2,107	2,123	2,137	2,152	2,167	2,183	2,200	2,216	2,232
303	2,248	2,264	2,279	2,294	2,309	2,325	2,342	2,358	2,374	2,390
304	2,406	2,421	2,437	2,451	2,465	2,480	2,494	2,507	2,520	2,533
305	2,546	2,560	2,572	2,585	2,599	2,613	2,627	2,641	2,654	2,668
306	2,682	2,696	2,710	2,724	2,738	2,751	2,764	2,778	2,791	2,806
307	2,820	2,835	2,850	2,865	2,881	2,897	2,914	2,931	2,946	2,960
308	2,973	2,986	2,998	3,011	3,023	3,036	3,049	3,062	3,075	3,087
309	3,100	3,113	3,125	3,138	3,151	3,164	3,178	3,193	3,208	3,223
310	3,237	3,252	3,266	3,281	3,296	3,310	3,324	3,339	3,354	3,370
311	3,387	3,404	3,421	3,438	3,457	3,477	3,496	3,516	3,536	3,558
312	3,579	3,601	3,622	3,644	3,666	3,688	3,711	3,735	3,758	3,779
313	3,801	3,822	3,843	3,863	3,885	3,907	3,929	3,951	3,974	3,998
314	4,020	4,041	4,061	4,082	4,105	4,127	4,147	4,168	4,188	4,208
315	4,227	4,245	4,263	4,282	4,302	4,321	4,340	4,359	4,378	4,398
316	4,416	4,436	4,455	4,474	4,493	4,512	4,532	4,553	4,574	4,595
317	4,615	4,635	4,657	4,681	4,708	4,736	4,767	4,799	4,830	4,860
318	4,887	4,913	4,939	4,965	4,991	5,016	5,042	5,068	5,095	5,120
319	5,143	5,168	5,192	5,215	5,237	5,259	5,279	5,299	5,320	5,341
320	5,361	5,382	5,404	5,425	5,446	5,466	5,487	5,507	5,527	5,548
321	5,567	5,587	5,606	5,625	5,644	5,663	5,680	5,699	5,716	5,734
322	5,752	5,770	5,787	5,804	5,821	5,838	5,855	5,873	5,891	5,910
323	5,927	5,944	5,961	5,978	5,994	6,012	6,029	6,045	6,062	6,080
324	6,098	6,115	6,133	6,153	6,173	6,193	6,212	6,232	6,251	6,271
325	6,289	6,309	6,329	6,349	6,370	6,392	6,415	6,438	6,461	6,483
326	6,504	6,527	6,550	6,575	6,602	6,627	6,651	6,673	6,695	6,717
327	6,740	6,762	6,784	6,806	6,831	6,856	6,882	6,907	6,929	6,951
328	6,972	6,995	7,017	7,038	7,060	7,083	7,104	7,126	7,149	7,169
329	7,188	7,208	7,228	7,248	7,267	7,287	7,305	7,324	7,342	7,359
330	7,377	7,395	7,412	7,428	7,444	7,459	7,477	7,495	7,512	7,530
331	7,548	7,566	7,583	7,601	7,619	7,637	7,655	7,672	7,690	7,708
332	7,726	7,743	7,761	7,779	7,797	7,814	7,832	7,850	7,868	7,885
333	7,903	7,921	7,939	7,957	7,974	7,992	8,010	8,028	8,045	8,063
334	8,081	8,099	8,116	8,134	8,152	8,170	8,188	8,205	8,223	8,241
335	8,259	8,276	8,294	8,312	8,330	8,347	8,365	8,383	8,401	8,418
336	8,436	8,454	8,472	8,490	8,507	8,525	8,543	8,561	8,578	8,596
337	8,614	8,632	8,649	8,667	8,685	8,703				

Note: Areas between elevations 330.5 and 337.5 feet linearly interpolated



Lake Bob Sandlin
November 2008 Survey
re-calculated October 2016
Prepared by: TWDB

Appendix G: Capacity curve



Lake Bob Sandlin
November 2008 Survey
re-calculated October 2016
Prepared by: TWDB

Appendix H: Area curve

Appendix I

Lake Bob Sandlin

RESERVOIR CAPACITY TABLE

TEXAS WATER DEVELOPMENT BOARD
CAPACITY IN ACRE-FEET
ELEVATION INCREMENT IS ONE HUNDREDTH FOOT

February 2018 Survey
Conservation Pool Elevation 337.5 feet NGVD 29

ELEVATION in Feet	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
282.9	0	0	0	0	0	0	0	0	0	0
283	0	0	0	0	0	0	0	0	0	0
283.1	0	0	0	0	0	0	0	0	0	0
283.2	0	0	0	0	0	0	0	0	0	0
283.3	0	0	0	0	0	0	0	0	0	0
283.4	0	0	0	0	0	0	0	0	0	0
283.5	0	0	0	0	0	0	0	0	0	0
283.6	0	0	0	0	0	0	0	0	0	0
283.7	0	0	0	0	0	0	0	0	0	0
283.8	0	0	0	0	0	0	0	0	0	0
283.9	0	0	0	0	0	0	0	0	0	0
284	0	0	0	0	0	0	0	0	0	0
284.1	0	1	1	1	1	1	1	1	1	1
284.2	1	1	1	1	1	1	1	1	1	1
284.3	1	1	1	1	1	1	1	1	1	1
284.4	1	1	1	1	1	1	1	1	1	1
284.5	1	1	1	1	1	1	1	1	2	2
284.6	2	2	2	2	2	2	2	2	2	2
284.7	2	2	2	2	2	2	2	2	2	2
284.8	2	2	2	2	2	2	2	2	3	3
284.9	3	3	3	3	3	3	3	3	3	3
285	3	3	3	3	3	3	3	3	3	3
285.1	3	3	4	4	4	4	4	4	4	4
285.2	4	4	4	4	4	4	4	4	4	4
285.3	4	4	5	5	5	5	5	5	5	5
285.4	5	5	5	5	5	5	5	5	5	6
285.5	6	6	6	6	6	6	6	6	6	6
285.6	6	6	6	6	6	7	7	7	7	7
285.7	7	7	7	7	7	7	7	7	7	8
285.8	8	8	8	8	8	8	8	8	8	8
285.9	8	8	9	9	9	9	9	9	9	9
286	9	9	9	9	9	10	10	10	10	10
286.1	10	10	10	10	10	10	11	11	11	11
286.2	11	11	11	11	11	11	12	12	12	12
286.3	12	12	12	12	12	12	13	13	13	13
286.4	13	13	13	13	13	14	14	14	14	14
286.5	14	14	14	15	15	15	15	15	15	15
286.6	16	16	16	16	16	16	16	17	17	17
286.7	17	17	17	17	18	18	18	18	18	19
286.8	19	19	19	19	19	20	20	20	20	20
286.9	21	21	21	21	21	22	22	22	22	22
287	23	23	23	23	23	24	24	24	24	25
287.1	25	25	25	26	26	26	26	27	27	27
287.2	27	28	28	28	28	29	29	29	29	30
287.3	30	30	31	31	31	31	32	32	32	33
287.4	33	33	34	34	34	35	35	35	36	36
287.5	36	37	37	37	38	38	39	39	39	40
287.6	40	40	41	41	42	42	42	43	43	44
287.7	44	45	45	45	46	46	47	47	48	48
287.8	49	49	50	50	51	51	52	52	53	53
287.9	54	54	55	55	56	56	57	57	58	58
288	59	60	60	61	61	62	63	63	64	64
288.1	65	66	66	67	68	68	69	70	70	71
288.2	72	72	73	74	74	75	76	77	77	78
288.3	79	80	80	81	82	83	84	85	85	86
288.4	87	88	89	90	91	92	93	94	95	95
288.5	96	97	98	100	101	102	103	104	105	106
288.6	107	108	109	110	112	113	114	115	116	117
288.7	119	120	121	122	124	125	126	128	129	130
288.8	132	133	134	136	137	138	140	141	143	144
288.9	146	147	149	150	152	153	155	156	158	160

Appendix I (continued)

Lake Bob Sandlin

RESERVOIR CAPACITY TABLE

TEXAS WATER DEVELOPMENT BOARD
CAPACITY IN ACRE-FEET
ELEVATION INCREMENT IS ONE HUNDREDTH FOOT

February 2018 Survey
Conservation Pool Elevation 337.5 feet NGVD 29

ELEVATION in Feet	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
289	161	163	164	166	168	169	171	173	174	176
289.1	178	180	181	183	185	187	188	190	192	194
289.2	196	198	199	201	203	205	207	209	211	213
289.3	215	217	219	221	223	225	227	229	231	233
289.4	235	238	240	242	244	246	248	251	253	255
289.5	257	260	262	264	266	269	271	273	276	278
289.6	280	283	285	288	290	292	295	297	300	302
289.7	305	307	310	312	315	317	320	323	325	328
289.8	331	333	336	339	341	344	347	350	352	355
289.9	358	361	364	366	369	372	375	378	381	384
290	387	390	393	396	399	402	405	408	411	414
290.1	417	420	423	426	429	433	436	439	442	445
290.2	449	452	455	458	461	465	468	471	475	478
290.3	481	485	488	491	495	498	501	505	508	512
290.4	515	519	522	525	529	532	536	539	543	547
290.5	550	554	557	561	564	568	572	575	579	583
290.6	586	590	594	597	601	605	609	612	616	620
290.7	624	628	631	635	639	643	647	651	655	658
290.8	662	666	670	674	678	682	686	690	694	698
290.9	702	707	711	715	719	723	727	732	736	740
291	744	749	753	757	762	766	771	775	780	784
291.1	789	793	798	802	807	812	816	821	826	830
291.2	835	840	845	850	854	859	864	869	874	879
291.3	884	889	894	899	904	909	914	920	925	930
291.4	935	940	946	951	956	961	967	972	977	983
291.5	988	994	999	1,004	1,010	1,015	1,021	1,026	1,032	1,038
291.6	1,043	1,049	1,054	1,060	1,066	1,071	1,077	1,083	1,088	1,094
291.7	1,100	1,105	1,111	1,117	1,123	1,128	1,134	1,140	1,146	1,152
291.8	1,158	1,163	1,169	1,175	1,181	1,187	1,193	1,199	1,205	1,211
291.9	1,217	1,223	1,229	1,235	1,241	1,247	1,253	1,259	1,265	1,271
292	1,277	1,283	1,289	1,295	1,301	1,308	1,314	1,320	1,326	1,332
292.1	1,338	1,345	1,351	1,357	1,363	1,369	1,376	1,382	1,388	1,394
292.2	1,401	1,407	1,413	1,420	1,426	1,432	1,439	1,445	1,451	1,458
292.3	1,464	1,471	1,477	1,483	1,490	1,496	1,503	1,509	1,516	1,522
292.4	1,528	1,535	1,541	1,548	1,555	1,561	1,568	1,574	1,581	1,587
292.5	1,594	1,600	1,607	1,614	1,620	1,627	1,634	1,640	1,647	1,653
292.6	1,660	1,667	1,674	1,680	1,687	1,694	1,700	1,707	1,714	1,721
292.7	1,728	1,734	1,741	1,748	1,755	1,762	1,768	1,775	1,782	1,789
292.8	1,796	1,803	1,810	1,817	1,824	1,831	1,838	1,845	1,852	1,859
292.9	1,866	1,873	1,880	1,887	1,894	1,901	1,909	1,916	1,923	1,930
293	1,937	1,944	1,952	1,959	1,966	1,973	1,981	1,988	1,995	2,003
293.1	2,010	2,017	2,025	2,032	2,039	2,047	2,054	2,062	2,069	2,076
293.2	2,084	2,091	2,099	2,106	2,114	2,121	2,129	2,136	2,144	2,152
293.3	2,159	2,167	2,174	2,182	2,190	2,197	2,205	2,213	2,221	2,228
293.4	2,236	2,244	2,252	2,259	2,267	2,275	2,283	2,291	2,299	2,306
293.5	2,314	2,322	2,330	2,338	2,346	2,354	2,362	2,370	2,378	2,386
293.6	2,394	2,402	2,410	2,418	2,426	2,434	2,442	2,450	2,459	2,467
293.7	2,475	2,483	2,491	2,499	2,508	2,516	2,524	2,532	2,540	2,549
293.8	2,557	2,565	2,574	2,582	2,590	2,599	2,607	2,615	2,624	2,632
293.9	2,641	2,649	2,657	2,666	2,674	2,683	2,691	2,700	2,708	2,717
294	2,725	2,734	2,742	2,751	2,760	2,768	2,777	2,785	2,794	2,803
294.1	2,811	2,820	2,829	2,837	2,846	2,855	2,864	2,873	2,881	2,890
294.2	2,899	2,908	2,917	2,926	2,935	2,944	2,953	2,962	2,971	2,980
294.3	2,989	2,998	3,007	3,016	3,025	3,034	3,043	3,052	3,062	3,071
294.4	3,080	3,089	3,098	3,108	3,117	3,126	3,135	3,145	3,154	3,163
294.5	3,173	3,182	3,191	3,201	3,210	3,220	3,229	3,239	3,248	3,258
294.6	3,267	3,277	3,286	3,296	3,305	3,315	3,324	3,334	3,344	3,353
294.7	3,363	3,373	3,382	3,392	3,402	3,411	3,421	3,431	3,441	3,450
294.8	3,460	3,470	3,480	3,490	3,499	3,509	3,519	3,529	3,539	3,549
294.9	3,559	3,569	3,579	3,589	3,599	3,609	3,619	3,629	3,639	3,649

Appendix I (continued)

Lake Bob Sandlin

RESERVOIR CAPACITY TABLE

TEXAS WATER DEVELOPMENT BOARD — February 2018 Survey

CAPACITY IN ACRE-FEET — Conservation Pool Elevation 337.5 feet NGVD 29

ELEVATION INCREMENT IS ONE HUNDREDTH FOOT

ELEVATION in Feet	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
295	3,659	3,669	3,679	3,689	3,700	3,710	3,720	3,730	3,740	3,750
295.1	3,761	3,771	3,781	3,791	3,802	3,812	3,822	3,833	3,843	3,853
295.2	3,864	3,874	3,884	3,895	3,905	3,916	3,926	3,937	3,947	3,958
295.3	3,968	3,979	3,989	4,000	4,010	4,021	4,031	4,042	4,053	4,063
295.4	4,074	4,085	4,095	4,106	4,117	4,128	4,138	4,149	4,160	4,171
295.5	4,181	4,192	4,203	4,214	4,225	4,236	4,247	4,258	4,269	4,280
295.6	4,291	4,302	4,313	4,324	4,335	4,346	4,357	4,368	4,379	4,390
295.7	4,402	4,413	4,424	4,435	4,446	4,458	4,469	4,480	4,492	4,503
295.8	4,514	4,526	4,537	4,549	4,560	4,571	4,583	4,594	4,606	4,618
295.9	4,629	4,641	4,652	4,664	4,675	4,687	4,699	4,710	4,722	4,734
296	4,745	4,757	4,769	4,781	4,792	4,804	4,816	4,828	4,840	4,852
296.1	4,863	4,875	4,887	4,899	4,911	4,923	4,935	4,947	4,959	4,971
296.2	4,983	4,996	5,008	5,020	5,032	5,044	5,056	5,069	5,081	5,093
296.3	5,105	5,118	5,130	5,142	5,155	5,167	5,179	5,192	5,204	5,217
296.4	5,229	5,242	5,254	5,267	5,279	5,292	5,304	5,317	5,330	5,342
296.5	5,355	5,368	5,380	5,393	5,406	5,418	5,431	5,444	5,457	5,470
296.6	5,482	5,495	5,508	5,521	5,534	5,547	5,560	5,573	5,586	5,599
296.7	5,612	5,625	5,638	5,651	5,664	5,677	5,690	5,703	5,716	5,729
296.8	5,742	5,756	5,769	5,782	5,795	5,808	5,822	5,835	5,848	5,862
296.9	5,875	5,888	5,902	5,915	5,928	5,942	5,955	5,969	5,982	5,996
297	6,009	6,023	6,036	6,050	6,063	6,077	6,090	6,104	6,118	6,131
297.1	6,145	6,158	6,172	6,186	6,200	6,213	6,227	6,241	6,254	6,268
297.2	6,282	6,296	6,310	6,324	6,337	6,351	6,365	6,379	6,393	6,407
297.3	6,421	6,435	6,449	6,463	6,477	6,491	6,505	6,519	6,533	6,547
297.4	6,561	6,575	6,589	6,604	6,618	6,632	6,646	6,660	6,675	6,689
297.5	6,703	6,717	6,732	6,746	6,760	6,775	6,789	6,803	6,818	6,832
297.6	6,846	6,861	6,875	6,890	6,904	6,919	6,933	6,948	6,962	6,977
297.7	6,991	7,006	7,021	7,035	7,050	7,064	7,079	7,094	7,108	7,123
297.8	7,138	7,152	7,167	7,182	7,197	7,212	7,226	7,241	7,256	7,271
297.9	7,286	7,300	7,315	7,330	7,345	7,360	7,375	7,390	7,405	7,420
298	7,435	7,450	7,465	7,480	7,495	7,510	7,525	7,540	7,555	7,570
298.1	7,585	7,601	7,616	7,631	7,646	7,661	7,676	7,692	7,707	7,722
298.2	7,737	7,753	7,768	7,783	7,799	7,814	7,829	7,845	7,860	7,875
298.3	7,891	7,906	7,922	7,937	7,953	7,968	7,984	7,999	8,015	8,030
298.4	8,046	8,061	8,077	8,092	8,108	8,124	8,139	8,155	8,171	8,186
298.5	8,202	8,218	8,233	8,249	8,265	8,281	8,297	8,312	8,328	8,344
298.6	8,360	8,376	8,391	8,407	8,423	8,439	8,455	8,471	8,487	8,503
298.7	8,519	8,535	8,551	8,567	8,583	8,599	8,615	8,631	8,647	8,663
298.8	8,679	8,695	8,711	8,727	8,744	8,760	8,776	8,792	8,808	8,825
298.9	8,841	8,857	8,874	8,890	8,906	8,923	8,939	8,955	8,972	8,988
299	9,005	9,021	9,038	9,054	9,071	9,087	9,104	9,121	9,137	9,154
299.1	9,170	9,187	9,204	9,220	9,237	9,254	9,271	9,287	9,304	9,321
299.2	9,338	9,355	9,371	9,388	9,405	9,422	9,439	9,456	9,473	9,490
299.3	9,507	9,524	9,541	9,558	9,575	9,592	9,609	9,626	9,643	9,661
299.4	9,678	9,695	9,712	9,729	9,746	9,764	9,781	9,798	9,815	9,833
299.5	9,850	9,867	9,885	9,902	9,919	9,937	9,954	9,971	9,989	10,006
299.6	10,023	10,041	10,058	10,076	10,093	10,111	10,128	10,146	10,163	10,181
299.7	10,198	10,216	10,233	10,251	10,269	10,286	10,304	10,321	10,339	10,357
299.8	10,374	10,392	10,410	10,428	10,445	10,463	10,481	10,499	10,516	10,534
299.9	10,552	10,570	10,588	10,605	10,623	10,641	10,659	10,677	10,695	10,713
300	10,731	10,749	10,767	10,785	10,803	10,821	10,839	10,857	10,875	10,893
300.1	10,911	10,930	10,948	10,966	10,984	11,002	11,020	11,039	11,057	11,075
300.2	11,093	11,112	11,130	11,148	11,167	11,185	11,204	11,222	11,240	11,259
300.3	11,277	11,296	11,314	11,333	11,351	11,370	11,388	11,407	11,426	11,444
300.4	11,463	11,482	11,500	11,519	11,538	11,556	11,575	11,594	11,612	11,631
300.5	11,650	11,669	11,688	11,706	11,725	11,744	11,763	11,782	11,801	11,820
300.6	11,838	11,857	11,876	11,895	11,914	11,933	11,952	11,971	11,990	12,009
300.7	12,028	12,047	12,067	12,086	12,105	12,124	12,143	12,162	12,181	12,201
300.8	12,220	12,239	12,258	12,277	12,297	12,316	12,335	12,355	12,374	12,393
300.9	12,413	12,432	12,452	12,471	12,491	12,510	12,529	12,549	12,569	12,588

Appendix I (continued)

Lake Bob Sandlin

RESERVOIR CAPACITY TABLE

TEXAS WATER DEVELOPMENT BOARD — February 2018 Survey

CAPACITY IN ACRE-FEET — Conservation Pool Elevation 337.5 feet NGVD 29

ELEVATION INCREMENT IS ONE HUNDREDTH FOOT

ELEVATION in Feet	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
301	12,608	12,627	12,647	12,666	12,686	12,705	12,725	12,745	12,764	12,784
301.1	12,804	12,823	12,843	12,863	12,883	12,902	12,922	12,942	12,962	12,982
301.2	13,001	13,021	13,041	13,061	13,081	13,101	13,121	13,141	13,161	13,181
301.3	13,200	13,220	13,240	13,260	13,280	13,300	13,320	13,340	13,361	13,381
301.4	13,401	13,421	13,441	13,461	13,481	13,501	13,521	13,542	13,562	13,582
301.5	13,602	13,622	13,643	13,663	13,683	13,703	13,724	13,744	13,764	13,785
301.6	13,805	13,825	13,846	13,866	13,886	13,907	13,927	13,947	13,968	13,988
301.7	14,009	14,029	14,050	14,070	14,091	14,111	14,132	14,152	14,173	14,193
301.8	14,214	14,234	14,255	14,276	14,296	14,317	14,338	14,358	14,379	14,400
301.9	14,420	14,441	14,462	14,482	14,503	14,524	14,545	14,566	14,586	14,607
302	14,628	14,649	14,670	14,691	14,712	14,733	14,754	14,775	14,795	14,816
302.1	14,838	14,859	14,880	14,901	14,922	14,943	14,964	14,985	15,006	15,028
302.2	15,049	15,070	15,091	15,112	15,134	15,155	15,176	15,197	15,219	15,240
302.3	15,261	15,283	15,304	15,326	15,347	15,369	15,390	15,411	15,433	15,454
302.4	15,476	15,497	15,519	15,540	15,562	15,584	15,605	15,627	15,649	15,670
302.5	15,692	15,714	15,735	15,757	15,779	15,800	15,822	15,844	15,866	15,888
302.6	15,909	15,931	15,953	15,975	15,997	16,019	16,041	16,063	16,085	16,107
302.7	16,129	16,151	16,173	16,195	16,217	16,239	16,261	16,283	16,305	16,327
302.8	16,349	16,371	16,394	16,416	16,438	16,460	16,482	16,505	16,527	16,549
302.9	16,571	16,594	16,616	16,638	16,661	16,683	16,706	16,728	16,751	16,773
303	16,795	16,818	16,840	16,863	16,885	16,908	16,930	16,953	16,976	16,998
303.1	17,021	17,043	17,066	17,089	17,112	17,134	17,157	17,180	17,202	17,225
303.2	17,248	17,271	17,294	17,317	17,339	17,362	17,385	17,408	17,431	17,454
303.3	17,477	17,500	17,523	17,546	17,569	17,592	17,615	17,638	17,661	17,684
303.4	17,707	17,730	17,753	17,776	17,799	17,823	17,846	17,869	17,892	17,915
303.5	17,939	17,962	17,985	18,008	18,032	18,055	18,078	18,102	18,125	18,148
303.6	18,172	18,195	18,219	18,242	18,265	18,289	18,312	18,336	18,359	18,383
303.7	18,406	18,430	18,454	18,477	18,501	18,524	18,548	18,572	18,595	18,619
303.8	18,643	18,666	18,690	18,714	18,738	18,761	18,785	18,809	18,833	18,857
303.9	18,880	18,904	18,928	18,952	18,976	19,000	19,024	19,048	19,072	19,096
304	19,120	19,144	19,168	19,192	19,216	19,240	19,264	19,288	19,312	19,336
304.1	19,361	19,385	19,409	19,433	19,457	19,482	19,506	19,530	19,554	19,579
304.2	19,603	19,627	19,652	19,676	19,701	19,725	19,749	19,774	19,798	19,823
304.3	19,847	19,872	19,896	19,921	19,945	19,970	19,994	20,019	20,044	20,068
304.4	20,093	20,118	20,142	20,167	20,192	20,216	20,241	20,266	20,291	20,315
304.5	20,340	20,365	20,390	20,415	20,439	20,464	20,489	20,514	20,539	20,564
304.6	20,589	20,614	20,638	20,663	20,688	20,713	20,738	20,763	20,788	20,813
304.7	20,838	20,863	20,889	20,914	20,939	20,964	20,989	21,014	21,039	21,064
304.8	21,089	21,115	21,140	21,165	21,190	21,215	21,241	21,266	21,291	21,316
304.9	21,342	21,367	21,392	21,418	21,443	21,468	21,494	21,519	21,544	21,570
305	21,595	21,621	21,646	21,671	21,697	21,722	21,748	21,773	21,799	21,824
305.1	21,850	21,876	21,901	21,927	21,952	21,978	22,004	22,029	22,055	22,081
305.2	22,106	22,132	22,158	22,183	22,209	22,235	22,261	22,286	22,312	22,338
305.3	22,364	22,390	22,415	22,441	22,467	22,493	22,519	22,545	22,571	22,597
305.4	22,623	22,649	22,675	22,701	22,727	22,753	22,779	22,805	22,831	22,857
305.5	22,883	22,909	22,935	22,961	22,987	23,013	23,039	23,066	23,092	23,118
305.6	23,144	23,170	23,197	23,223	23,249	23,275	23,302	23,328	23,354	23,381
305.7	23,407	23,433	23,460	23,486	23,512	23,539	23,565	23,591	23,618	23,644
305.8	23,671	23,697	23,724	23,750	23,777	23,803	23,830	23,856	23,883	23,909
305.9	23,936	23,963	23,989	24,016	24,042	24,069	24,096	24,122	24,149	24,176
306	24,202	24,229	24,256	24,283	24,309	24,336	24,363	24,390	24,416	24,443
306.1	24,470	24,497	24,524	24,551	24,578	24,604	24,631	24,658	24,685	24,712
306.2	24,739	24,766	24,793	24,820	24,847	24,874	24,901	24,928	24,955	24,982
306.3	25,009	25,037	25,064	25,091	25,118	25,145	25,172	25,200	25,227	25,254
306.4	25,282	25,309	25,336	25,363	25,391	25,418	25,446	25,473	25,500	25,528
306.5	25,555	25,583	25,610	25,637	25,665	25,692	25,720	25,748	25,775	25,803
306.6	25,830	25,858	25,885	25,913	25,941	25,968	25,996	26,024	26,051	26,079
306.7	26,107	26,135	26,162	26,190	26,218	26,246	26,273	26,301	26,329	26,357
306.8	26,385	26,413	26,441	26,468	26,496	26,524	26,552	26,580	26,608	26,636
306.9	26,664	26,692	26,720	26,748	26,776	26,804	26,832	26,860	26,888	26,917

Appendix I (continued)

Lake Bob Sandlin

RESERVOIR CAPACITY TABLE

TEXAS WATER DEVELOPMENT BOARD — February 2018 Survey

CAPACITY IN ACRE-FEET — Conservation Pool Elevation 337.5 feet NGVD 29

ELEVATION INCREMENT IS ONE HUNDREDTH FOOT

ELEVATION in Feet	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
307	26,945	26,973	27,001	27,029	27,057	27,085	27,114	27,142	27,170	27,198
307.1	27,227	27,255	27,283	27,312	27,340	27,368	27,396	27,425	27,453	27,482
307.2	27,510	27,538	27,567	27,595	27,624	27,652	27,681	27,709	27,738	27,766
307.3	27,795	27,823	27,852	27,880	27,909	27,938	27,966	27,995	28,024	28,052
307.4	28,081	28,110	28,139	28,167	28,196	28,225	28,254	28,283	28,312	28,340
307.5	28,369	28,398	28,427	28,456	28,485	28,514	28,543	28,572	28,601	28,630
307.6	28,659	28,688	28,717	28,746	28,775	28,804	28,834	28,863	28,892	28,921
307.7	28,950	28,980	29,009	29,038	29,067	29,097	29,126	29,155	29,185	29,214
307.8	29,243	29,273	29,302	29,331	29,361	29,390	29,420	29,449	29,479	29,508
307.9	29,538	29,567	29,597	29,626	29,656	29,685	29,715	29,745	29,774	29,804
308	29,833	29,863	29,893	29,923	29,952	29,982	30,012	30,041	30,071	30,101
308.1	30,131	30,160	30,190	30,220	30,250	30,280	30,310	30,340	30,369	30,399
308.2	30,429	30,459	30,489	30,519	30,549	30,579	30,609	30,639	30,669	30,699
308.3	30,729	30,759	30,789	30,819	30,849	30,879	30,909	30,940	30,970	31,000
308.4	31,030	31,060	31,091	31,121	31,151	31,181	31,211	31,242	31,272	31,302
308.5	31,332	31,363	31,393	31,423	31,454	31,484	31,514	31,545	31,575	31,606
308.6	31,636	31,666	31,697	31,727	31,758	31,788	31,819	31,849	31,880	31,910
308.7	31,941	31,971	32,002	32,032	32,063	32,094	32,124	32,155	32,185	32,216
308.8	32,247	32,277	32,308	32,339	32,369	32,400	32,431	32,462	32,492	32,523
308.9	32,554	32,585	32,616	32,646	32,677	32,708	32,739	32,770	32,801	32,831
309	32,862	32,893	32,924	32,955	32,986	33,017	33,048	33,079	33,110	33,141
309.1	33,172	33,203	33,234	33,265	33,296	33,327	33,358	33,389	33,420	33,452
309.2	33,483	33,514	33,545	33,576	33,607	33,639	33,670	33,701	33,732	33,764
309.3	33,795	33,826	33,858	33,889	33,920	33,952	33,983	34,014	34,046	34,077
309.4	34,109	34,140	34,171	34,203	34,234	34,266	34,297	34,329	34,360	34,392
309.5	34,423	34,455	34,486	34,518	34,550	34,581	34,613	34,644	34,676	34,708
309.6	34,739	34,771	34,803	34,834	34,866	34,898	34,929	34,961	34,993	35,025
309.7	35,056	35,088	35,120	35,152	35,184	35,216	35,247	35,279	35,311	35,343
309.8	35,375	35,407	35,439	35,471	35,503	35,535	35,567	35,599	35,631	35,663
309.9	35,695	35,727	35,759	35,791	35,823	35,856	35,888	35,920	35,952	35,984
310	36,016	36,049	36,081	36,113	36,145	36,178	36,210	36,242	36,275	36,307
310.1	36,339	36,372	36,404	36,436	36,469	36,501	36,534	36,566	36,599	36,631
310.2	36,664	36,696	36,729	36,761	36,794	36,826	36,859	36,891	36,924	36,957
310.3	36,989	37,022	37,055	37,087	37,120	37,153	37,186	37,218	37,251	37,284
310.4	37,317	37,350	37,383	37,415	37,448	37,481	37,514	37,547	37,580	37,613
310.5	37,646	37,679	37,712	37,745	37,778	37,811	37,844	37,877	37,910	37,944
310.6	37,977	38,010	38,043	38,076	38,109	38,143	38,176	38,209	38,242	38,276
310.7	38,309	38,342	38,375	38,409	38,442	38,475	38,509	38,542	38,576	38,609
310.8	38,642	38,676	38,709	38,743	38,776	38,810	38,843	38,877	38,910	38,944
310.9	38,977	39,011	39,044	39,078	39,112	39,145	39,179	39,213	39,246	39,280
311	39,314	39,347	39,381	39,415	39,449	39,482	39,516	39,550	39,584	39,618
311.1	39,652	39,685	39,719	39,753	39,787	39,821	39,855	39,889	39,923	39,957
311.2	39,991	40,025	40,060	40,094	40,128	40,162	40,196	40,230	40,265	40,299
311.3	40,333	40,367	40,402	40,436	40,470	40,505	40,539	40,573	40,608	40,642
311.4	40,677	40,711	40,746	40,780	40,815	40,849	40,884	40,918	40,953	40,987
311.5	41,022	41,057	41,091	41,126	41,161	41,196	41,230	41,265	41,300	41,335
311.6	41,369	41,404	41,439	41,474	41,509	41,544	41,579	41,614	41,649	41,684
311.7	41,719	41,754	41,789	41,824	41,859	41,894	41,929	41,964	41,999	42,035
311.8	42,070	42,105	42,140	42,175	42,211	42,246	42,281	42,317	42,352	42,387
311.9	42,423	42,458	42,494	42,529	42,565	42,600	42,636	42,671	42,707	42,742
312	42,778	42,814	42,849	42,885	42,921	42,956	42,992	43,028	43,063	43,099
312.1	43,135	43,171	43,206	43,242	43,278	43,314	43,350	43,386	43,422	43,458
312.2	43,494	43,530	43,566	43,602	43,638	43,674	43,710	43,746	43,782	43,818
312.3	43,854	43,891	43,927	43,963	43,999	44,035	44,072	44,108	44,144	44,181
312.4	44,217	44,253	44,290	44,326	44,362	44,399	44,435	44,472	44,508	44,545
312.5	44,581	44,618	44,654	44,691	44,728	44,764	44,801	44,837	44,874	44,911
312.6	44,948	44,984	45,021	45,058	45,095	45,132	45,169	45,206	45,242	45,279
312.7	45,316	45,353	45,390	45,428	45,465	45,502	45,539	45,576	45,613	45,650
312.8	45,687	45,725	45,762	45,799	45,837	45,874	45,911	45,949	45,986	46,024
312.9	46,061	46,099	46,136	46,174	46,211	46,249	46,286	46,324	46,362	46,399

Appendix I (continued)

Lake Bob Sandlin

RESERVOIR CAPACITY TABLE

TEXAS WATER DEVELOPMENT BOARD — February 2018 Survey

CAPACITY IN ACRE-FEET — Conservation Pool Elevation 337.5 feet NGVD 29

ELEVATION INCREMENT IS ONE HUNDREDTH FOOT

ELEVATION in Feet	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
313	46,437	46,475	46,513	46,550	46,588	46,626	46,664	46,702	46,740	46,778
313.1	46,816	46,853	46,892	46,930	46,968	47,006	47,044	47,082	47,120	47,158
313.2	47,197	47,235	47,273	47,311	47,350	47,388	47,426	47,465	47,503	47,541
313.3	47,580	47,618	47,657	47,695	47,734	47,772	47,811	47,849	47,888	47,927
313.4	47,965	48,004	48,043	48,081	48,120	48,159	48,197	48,236	48,275	48,314
313.5	48,353	48,391	48,430	48,469	48,508	48,547	48,586	48,625	48,664	48,703
313.6	48,742	48,781	48,820	48,859	48,899	48,938	48,977	49,016	49,055	49,095
313.7	49,134	49,173	49,212	49,252	49,291	49,331	49,370	49,409	49,449	49,489
313.8	49,528	49,568	49,607	49,647	49,686	49,726	49,766	49,805	49,845	49,885
313.9	49,925	49,965	50,004	50,044	50,084	50,124	50,164	50,204	50,244	50,284
314	50,324	50,364	50,404	50,444	50,484	50,524	50,564	50,605	50,645	50,685
314.1	50,725	50,765	50,806	50,846	50,886	50,927	50,967	51,007	51,048	51,088
314.2	51,129	51,169	51,210	51,250	51,291	51,331	51,372	51,412	51,453	51,494
314.3	51,534	51,575	51,616	51,656	51,697	51,738	51,779	51,820	51,861	51,901
314.4	51,942	51,983	52,024	52,065	52,106	52,147	52,188	52,229	52,270	52,311
314.5	52,353	52,394	52,435	52,476	52,518	52,559	52,600	52,641	52,683	52,724
314.6	52,765	52,807	52,848	52,890	52,931	52,973	53,014	53,056	53,097	53,139
314.7	53,180	53,222	53,264	53,305	53,347	53,389	53,430	53,472	53,514	53,555
314.8	53,597	53,639	53,681	53,723	53,765	53,806	53,848	53,890	53,932	53,974
314.9	54,016	54,058	54,100	54,142	54,184	54,226	54,268	54,311	54,353	54,395
315	54,437	54,479	54,521	54,564	54,606	54,648	54,690	54,733	54,775	54,817
315.1	54,860	54,902	54,944	54,987	55,029	55,072	55,114	55,157	55,199	55,242
315.2	55,284	55,327	55,369	55,412	55,454	55,497	55,540	55,582	55,625	55,668
315.3	55,710	55,753	55,796	55,838	55,881	55,924	55,967	56,010	56,053	56,095
315.4	56,138	56,181	56,224	56,267	56,310	56,353	56,396	56,439	56,482	56,525
315.5	56,568	56,611	56,654	56,697	56,741	56,784	56,827	56,870	56,913	56,957
315.6	57,000	57,043	57,087	57,130	57,173	57,217	57,260	57,304	57,347	57,390
315.7	57,434	57,477	57,521	57,564	57,608	57,652	57,695	57,739	57,782	57,826
315.8	57,870	57,913	57,957	58,001	58,044	58,088	58,132	58,176	58,220	58,263
315.9	58,307	58,351	58,395	58,439	58,483	58,527	58,571	58,615	58,659	58,703
316	58,747	58,791	58,835	58,879	58,923	58,967	59,011	59,056	59,100	59,144
316.1	59,188	59,232	59,277	59,321	59,365	59,410	59,454	59,498	59,543	59,587
316.2	59,632	59,676	59,721	59,765	59,809	59,854	59,899	59,943	59,988	60,032
316.3	60,077	60,122	60,166	60,211	60,256	60,300	60,345	60,390	60,435	60,479
316.4	60,524	60,569	60,614	60,659	60,703	60,748	60,793	60,838	60,883	60,928
316.5	60,973	61,018	61,063	61,108	61,153	61,198	61,244	61,289	61,334	61,379
316.6	61,424	61,469	61,515	61,560	61,605	61,651	61,696	61,741	61,787	61,832
316.7	61,877	61,923	61,968	62,014	62,059	62,105	62,150	62,196	62,241	62,287
316.8	62,332	62,378	62,424	62,469	62,515	62,561	62,606	62,652	62,698	62,744
316.9	62,789	62,835	62,881	62,927	62,973	63,019	63,064	63,110	63,156	63,202
317	63,248	63,294	63,340	63,386	63,432	63,478	63,524	63,570	63,617	63,663
317.1	63,709	63,755	63,801	63,847	63,894	63,940	63,986	64,033	64,079	64,125
317.2	64,172	64,218	64,264	64,311	64,357	64,404	64,450	64,497	64,543	64,590
317.3	64,636	64,683	64,730	64,776	64,823	64,870	64,916	64,963	65,010	65,057
317.4	65,104	65,151	65,198	65,245	65,292	65,339	65,386	65,433	65,480	65,527
317.5	65,574	65,621	65,669	65,716	65,763	65,811	65,858	65,905	65,953	66,000
317.6	66,048	66,095	66,143	66,190	66,238	66,286	66,333	66,381	66,429	66,476
317.7	66,524	66,572	66,620	66,668	66,716	66,764	66,812	66,860	66,908	66,956
317.8	67,004	67,052	67,100	67,148	67,197	67,245	67,293	67,342	67,390	67,438
317.9	67,487	67,535	67,584	67,632	67,681	67,729	67,778	67,826	67,875	67,924
318	67,972	68,021	68,070	68,118	68,167	68,216	68,265	68,314	68,362	68,411
318.1	68,460	68,509	68,558	68,607	68,656	68,705	68,755	68,804	68,853	68,902
318.2	68,951	69,000	69,050	69,099	69,148	69,198	69,247	69,296	69,346	69,395
318.3	69,445	69,494	69,544	69,593	69,643	69,692	69,742	69,791	69,841	69,891
318.4	69,940	69,990	70,040	70,090	70,139	70,189	70,239	70,289	70,339	70,389
318.5	70,439	70,489	70,538	70,588	70,638	70,688	70,738	70,789	70,839	70,889
318.6	70,939	70,989	71,039	71,089	71,140	71,190	71,240	71,290	71,341	71,391
318.7	71,442	71,492	71,542	71,593	71,643	71,694	71,744	71,795	71,846	71,896
318.8	71,947	71,998	72,048	72,099	72,150	72,201	72,251	72,302	72,353	72,404
318.9	72,455	72,506	72,557	72,608	72,659	72,710	72,761	72,812	72,863	72,914

Appendix I (continued)

Lake Bob Sandlin

RESERVOIR CAPACITY TABLE

TEXAS WATER DEVELOPMENT BOARD — February 2018 Survey

CAPACITY IN ACRE-FEET — Conservation Pool Elevation 337.5 feet NGVD 29

ELEVATION INCREMENT IS ONE HUNDREDTH FOOT

ELEVATION in Feet	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
319	72,965	73,017	73,068	73,119	73,170	73,222	73,273	73,324	73,376	73,427
319.1	73,479	73,530	73,581	73,633	73,684	73,736	73,788	73,839	73,891	73,942
319.2	73,994	74,046	74,097	74,149	74,201	74,253	74,305	74,356	74,408	74,460
319.3	74,512	74,564	74,616	74,668	74,720	74,772	74,824	74,876	74,928	74,980
319.4	75,032	75,085	75,137	75,189	75,241	75,293	75,346	75,398	75,450	75,503
319.5	75,555	75,607	75,660	75,712	75,765	75,817	75,870	75,922	75,975	76,027
319.6	76,080	76,132	76,185	76,238	76,290	76,343	76,396	76,448	76,501	76,554
319.7	76,607	76,659	76,712	76,765	76,818	76,871	76,924	76,977	77,030	77,083
319.8	77,136	77,189	77,242	77,295	77,348	77,401	77,454	77,508	77,561	77,614
319.9	77,667	77,720	77,774	77,827	77,880	77,934	77,987	78,041	78,094	78,147
320	78,201	78,254	78,308	78,361	78,415	78,468	78,522	78,576	78,629	78,683
320.1	78,737	78,790	78,844	78,898	78,952	79,005	79,059	79,113	79,167	79,221
320.2	79,275	79,329	79,383	79,437	79,491	79,545	79,599	79,653	79,707	79,761
320.3	79,815	79,869	79,923	79,978	80,032	80,086	80,140	80,195	80,249	80,303
320.4	80,358	80,412	80,466	80,521	80,575	80,630	80,684	80,738	80,793	80,847
320.5	80,902	80,957	81,011	81,066	81,120	81,175	81,230	81,284	81,339	81,394
320.6	81,449	81,503	81,558	81,613	81,668	81,722	81,777	81,832	81,887	81,942
320.7	81,997	82,052	82,107	82,162	82,217	82,272	82,327	82,382	82,437	82,492
320.8	82,547	82,603	82,658	82,713	82,768	82,824	82,879	82,934	82,989	83,045
320.9	83,100	83,155	83,211	83,266	83,322	83,377	83,432	83,488	83,544	83,599
321	83,655	83,710	83,766	83,821	83,877	83,932	83,988	84,044	84,099	84,155
321.1	84,211	84,267	84,322	84,378	84,434	84,490	84,546	84,602	84,658	84,714
321.2	84,770	84,825	84,881	84,938	84,993	85,050	85,106	85,162	85,218	85,274
321.3	85,330	85,386	85,442	85,499	85,555	85,611	85,667	85,724	85,780	85,836
321.4	85,893	85,949	86,005	86,062	86,118	86,175	86,231	86,287	86,344	86,400
321.5	86,457	86,514	86,570	86,627	86,683	86,740	86,797	86,853	86,910	86,967
321.6	87,023	87,080	87,137	87,194	87,251	87,307	87,364	87,421	87,478	87,535
321.7	87,592	87,649	87,706	87,763	87,820	87,877	87,934	87,991	88,048	88,105
321.8	88,162	88,219	88,276	88,333	88,390	88,448	88,505	88,562	88,619	88,677
321.9	88,734	88,791	88,849	88,906	88,963	89,021	89,078	89,135	89,193	89,250
322	89,308	89,365	89,422	89,480	89,538	89,595	89,653	89,710	89,768	89,825
322.1	89,883	89,941	89,998	90,056	90,114	90,171	90,229	90,287	90,345	90,402
322.2	90,460	90,518	90,576	90,634	90,692	90,750	90,808	90,865	90,923	90,981
322.3	91,039	91,097	91,155	91,213	91,271	91,329	91,387	91,446	91,504	91,562
322.4	91,620	91,678	91,737	91,795	91,853	91,911	91,970	92,028	92,086	92,145
322.5	92,203	92,261	92,320	92,378	92,437	92,495	92,554	92,612	92,671	92,729
322.6	92,788	92,846	92,905	92,963	93,022	93,081	93,139	93,198	93,257	93,315
322.7	93,374	93,433	93,492	93,550	93,609	93,668	93,727	93,786	93,845	93,904
322.8	93,962	94,021	94,080	94,139	94,198	94,257	94,316	94,375	94,434	94,494
322.9	94,552	94,612	94,671	94,730	94,789	94,848	94,907	94,967	95,026	95,085
323	95,144	95,204	95,263	95,322	95,382	95,441	95,501	95,560	95,619	95,679
323.1	95,738	95,798	95,857	95,917	95,976	96,036	96,095	96,155	96,215	96,274
323.2	96,334	96,393	96,453	96,513	96,572	96,632	96,692	96,752	96,812	96,871
323.3	96,931	96,991	97,051	97,111	97,170	97,230	97,290	97,350	97,410	97,470
323.4	97,530	97,590	97,650	97,710	97,770	97,830	97,890	97,951	98,011	98,071
323.5	98,131	98,191	98,251	98,312	98,372	98,432	98,492	98,553	98,613	98,673
323.6	98,734	98,794	98,854	98,915	98,975	99,035	99,096	99,156	99,217	99,277
323.7	99,338	99,398	99,459	99,520	99,580	99,641	99,701	99,762	99,822	99,883
323.8	99,944	100,005	100,065	100,126	100,187	100,248	100,308	100,369	100,430	100,491
323.9	100,552	100,612	100,673	100,734	100,795	100,856	100,917	100,978	101,039	101,100
324	101,161	101,222	101,283	101,344	101,406	101,467	101,528	101,589	101,650	101,711
324.1	101,773	101,834	101,895	101,956	102,018	102,079	102,140	102,202	102,263	102,324
324.2	102,386	102,447	102,508	102,570	102,631	102,693	102,754	102,816	102,877	102,939
324.3	103,000	103,062	103,124	103,185	103,247	103,309	103,370	103,432	103,494	103,556
324.4	103,617	103,679	103,741	103,803	103,865	103,927	103,988	104,050	104,112	104,174
324.5	104,236	104,298	104,360	104,422	104,484	104,546	104,608	104,671	104,733	104,795
324.6	104,857	104,919	104,981	105,044	105,106	105,168	105,230	105,293	105,355	105,417
324.7	105,480	105,542	105,604	105,667	105,729	105,792	105,854	105,917	105,979	106,042
324.8	106,104	106,167	106,230	106,292	106,355	106,418	106,480	106,543	106,606	106,668
324.9	106,731	106,794	106,857	106,920	106,983	107,045	107,108	107,171	107,234	107,297

Appendix I (continued)

Lake Bob Sandlin

RESERVOIR CAPACITY TABLE

TEXAS WATER DEVELOPMENT BOARD — February 2018 Survey

CAPACITY IN ACRE-FEET — Conservation Pool Elevation 337.5 feet NGVD 29

ELEVATION INCREMENT IS ONE HUNDREDTH FOOT

ELEVATION in Feet	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
325	107,360	107,423	107,486	107,549	107,612	107,675	107,739	107,802	107,865	107,928
325.1	107,991	108,054	108,118	108,181	108,244	108,307	108,371	108,434	108,497	108,561
325.2	108,624	108,688	108,751	108,815	108,878	108,942	109,005	109,069	109,132	109,196
325.3	109,260	109,323	109,387	109,451	109,514	109,578	109,642	109,706	109,770	109,834
325.4	109,897	109,961	110,025	110,089	110,153	110,217	110,281	110,345	110,409	110,473
325.5	110,537	110,601	110,665	110,730	110,794	110,858	110,922	110,987	111,051	111,115
325.6	111,180	111,244	111,308	111,373	111,437	111,502	111,566	111,631	111,695	111,760
325.7	111,825	111,889	111,954	112,019	112,083	112,148	112,213	112,277	112,342	112,407
325.8	112,472	112,537	112,602	112,666	112,731	112,796	112,861	112,926	112,991	113,057
325.9	113,121	113,187	113,252	113,317	113,382	113,447	113,512	113,578	113,643	113,708
326	113,774	113,839	113,904	113,970	114,035	114,100	114,166	114,232	114,297	114,363
326.1	114,428	114,494	114,559	114,625	114,691	114,756	114,822	114,888	114,954	115,020
326.2	115,085	115,151	115,217	115,283	115,349	115,415	115,481	115,547	115,613	115,679
326.3	115,745	115,811	115,878	115,944	116,010	116,076	116,142	116,209	116,275	116,342
326.4	116,408	116,474	116,541	116,607	116,674	116,740	116,807	116,873	116,940	117,006
326.5	117,073	117,140	117,206	117,273	117,340	117,406	117,473	117,540	117,607	117,674
326.6	117,741	117,807	117,874	117,941	118,008	118,075	118,142	118,209	118,276	118,343
326.7	118,411	118,478	118,545	118,612	118,679	118,746	118,814	118,881	118,948	119,015
326.8	119,083	119,150	119,217	119,285	119,352	119,420	119,487	119,554	119,622	119,690
326.9	119,757	119,825	119,892	119,960	120,027	120,095	120,163	120,230	120,298	120,366
327	120,434	120,502	120,569	120,637	120,705	120,773	120,841	120,909	120,976	121,044
327.1	121,113	121,180	121,248	121,317	121,385	121,453	121,521	121,589	121,657	121,725
327.2	121,794	121,862	121,930	121,998	122,067	122,135	122,203	122,272	122,340	122,409
327.3	122,477	122,546	122,614	122,682	122,751	122,820	122,888	122,957	123,026	123,095
327.4	123,163	123,232	123,301	123,370	123,438	123,507	123,576	123,645	123,714	123,783
327.5	123,852	123,921	123,990	124,059	124,129	124,198	124,267	124,336	124,405	124,475
327.6	124,544	124,613	124,682	124,752	124,821	124,891	124,960	125,030	125,099	125,169
327.7	125,238	125,308	125,377	125,447	125,517	125,586	125,656	125,726	125,796	125,865
327.8	125,935	126,005	126,075	126,145	126,215	126,285	126,354	126,425	126,495	126,565
327.9	126,635	126,705	126,775	126,845	126,915	126,985	127,056	127,126	127,196	127,266
328	127,337	127,407	127,477	127,548	127,618	127,689	127,759	127,830	127,900	127,971
328.1	128,041	128,112	128,182	128,253	128,324	128,394	128,465	128,536	128,606	128,677
328.2	128,748	128,819	128,889	128,960	129,031	129,102	129,173	129,244	129,315	129,386
328.3	129,457	129,528	129,599	129,670	129,741	129,812	129,883	129,955	130,026	130,097
328.4	130,168	130,239	130,311	130,382	130,453	130,525	130,596	130,668	130,739	130,810
328.5	130,882	130,953	131,025	131,096	131,168	131,239	131,311	131,383	131,454	131,526
328.6	131,598	131,669	131,741	131,813	131,885	131,957	132,028	132,100	132,172	132,244
328.7	132,316	132,388	132,460	132,532	132,604	132,676	132,748	132,820	132,892	132,964
328.8	133,036	133,109	133,181	133,253	133,325	133,398	133,470	133,542	133,615	133,687
328.9	133,759	133,832	133,904	133,976	134,049	134,121	134,194	134,266	134,339	134,411
329	134,484	134,557	134,629	134,702	134,775	134,847	134,920	134,993	135,066	135,138
329.1	135,211	135,284	135,357	135,430	135,503	135,576	135,649	135,722	135,795	135,868
329.2	135,941	136,014	136,087	136,160	136,233	136,306	136,379	136,452	136,526	136,599
329.3	136,672	136,745	136,819	136,892	136,965	137,039	137,112	137,186	137,259	137,332
329.4	137,406	137,479	137,553	137,626	137,700	137,774	137,847	137,921	137,994	138,068
329.5	138,142	138,215	138,289	138,363	138,436	138,510	138,584	138,658	138,732	138,805
329.6	138,879	138,953	139,027	139,101	139,175	139,249	139,323	139,397	139,471	139,545
329.7	139,619	139,693	139,767	139,842	139,916	139,990	140,064	140,138	140,213	140,287
329.8	140,361	140,435	140,510	140,584	140,658	140,733	140,807	140,882	140,956	141,031
329.9	141,105	141,179	141,254	141,328	141,403	141,478	141,552	141,627	141,701	141,776
330	141,851	141,925	142,000	142,075	142,149	142,224	142,299	142,374	142,448	142,523
330.1	142,598	142,673	142,748	142,823	142,898	142,972	143,047	143,122	143,197	143,272
330.2	143,347	143,422	143,497	143,573	143,648	143,723	143,798	143,873	143,948	144,023
330.3	144,098	144,174	144,249	144,324	144,399	144,475	144,550	144,625	144,701	144,776
330.4	144,851	144,927	145,002	145,078	145,153	145,229	145,304	145,380	145,455	145,531
330.5	145,606	145,682	145,757	145,833	145,909	145,984	146,060	146,136	146,211	146,287
330.6	146,363	146,439	146,514	146,590	146,666	146,742	146,818	146,894	146,970	147,046
330.7	147,122	147,197	147,273	147,350	147,425	147,502	147,578	147,654	147,730	147,806
330.8	147,882	147,958	148,034	148,110	148,187	148,263	148,339	148,415	148,492	148,568
330.9	148,644	148,721	148,797	148,873	148,950	149,026	149,103	149,179	149,256	149,332

Appendix I (continued)

Lake Bob Sandlin

RESERVOIR CAPACITY TABLE

TEXAS WATER DEVELOPMENT BOARD — February 2018 Survey

CAPACITY IN ACRE-FEET — Conservation Pool Elevation 337.5 feet NGVD 29

ELEVATION INCREMENT IS ONE HUNDREDTH FOOT

ELEVATION in Feet	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
331	149,409	149,485	149,562	149,638	149,715	149,791	149,868	149,945	150,021	150,098
331.1	150,175	150,251	150,328	150,405	150,482	150,559	150,636	150,712	150,789	150,866
331.2	150,943	151,020	151,097	151,174	151,251	151,328	151,405	151,482	151,559	151,636
331.3	151,713	151,790	151,867	151,944	152,021	152,099	152,176	152,253	152,330	152,408
331.4	152,485	152,562	152,640	152,717	152,794	152,872	152,949	153,026	153,104	153,181
331.5	153,259	153,336	153,414	153,491	153,569	153,646	153,724	153,802	153,879	153,957
331.6	154,035	154,112	154,190	154,268	154,346	154,423	154,501	154,579	154,657	154,734
331.7	154,812	154,890	154,968	155,046	155,124	155,202	155,280	155,358	155,436	155,514
331.8	155,592	155,670	155,748	155,826	155,905	155,983	156,061	156,139	156,217	156,296
331.9	156,374	156,452	156,531	156,609	156,687	156,766	156,844	156,922	157,001	157,079
332	157,158	157,236	157,314	157,393	157,472	157,550	157,629	157,707	157,786	157,865
332.1	157,943	158,022	158,101	158,179	158,258	158,337	158,416	158,494	158,573	158,652
332.2	158,731	158,810	158,889	158,968	159,046	159,125	159,204	159,283	159,362	159,441
332.3	159,520	159,599	159,678	159,757	159,837	159,916	159,995	160,074	160,153	160,232
332.4	160,311	160,391	160,470	160,549	160,629	160,708	160,787	160,866	160,946	161,025
332.5	161,105	161,184	161,263	161,343	161,422	161,502	161,581	161,661	161,740	161,820
332.6	161,900	161,979	162,059	162,138	162,218	162,298	162,377	162,457	162,537	162,617
332.7	162,697	162,776	162,856	162,936	163,016	163,096	163,176	163,255	163,335	163,415
332.8	163,495	163,575	163,655	163,735	163,815	163,896	163,975	164,056	164,136	164,216
332.9	164,296	164,376	164,457	164,537	164,617	164,697	164,778	164,858	164,938	165,018
333	165,099	165,179	165,260	165,340	165,421	165,501	165,581	165,662	165,742	165,823
333.1	165,904	165,984	166,065	166,145	166,226	166,307	166,387	166,468	166,549	166,629
333.2	166,710	166,791	166,872	166,953	167,033	167,114	167,195	167,276	167,357	167,438
333.3	167,519	167,600	167,681	167,762	167,843	167,924	168,005	168,086	168,167	168,248
333.4	168,329	168,410	168,491	168,572	168,654	168,735	168,816	168,897	168,979	169,060
333.5	169,141	169,223	169,304	169,385	169,467	169,548	169,629	169,711	169,792	169,874
333.6	169,955	170,037	170,118	170,200	170,282	170,363	170,445	170,526	170,608	170,689
333.7	170,771	170,853	170,934	171,016	171,098	171,180	171,261	171,343	171,425	171,507
333.8	171,589	171,670	171,752	171,834	171,916	171,998	172,080	172,162	172,244	172,326
333.9	172,408	172,490	172,572	172,654	172,736	172,818	172,900	172,983	173,065	173,147
334	173,229	173,311	173,393	173,476	173,558	173,640	173,722	173,805	173,887	173,969
334.1	174,052	174,134	174,216	174,299	174,381	174,464	174,546	174,629	174,711	174,794
334.2	174,876	174,959	175,041	175,124	175,206	175,289	175,372	175,454	175,537	175,620
334.3	175,702	175,785	175,868	175,951	176,034	176,116	176,199	176,282	176,365	176,448
334.4	176,531	176,614	176,697	176,779	176,863	176,946	177,028	177,112	177,195	177,278
334.5	177,361	177,444	177,527	177,610	177,693	177,776	177,860	177,943	178,026	178,109
334.6	178,193	178,276	178,359	178,443	178,526	178,609	178,693	178,776	178,859	178,943
334.7	179,026	179,110	179,193	179,277	179,360	179,444	179,527	179,611	179,694	179,778
334.8	179,862	179,945	180,029	180,113	180,196	180,280	180,364	180,447	180,531	180,615
334.9	180,699	180,783	180,867	180,950	181,034	181,118	181,202	181,286	181,370	181,454
335	181,538	181,622	181,706	181,790	181,874	181,958	182,042	182,126	182,211	182,295
335.1	182,379	182,463	182,547	182,632	182,716	182,800	182,884	182,969	183,053	183,137
335.2	183,222	183,306	183,391	183,475	183,559	183,644	183,728	183,813	183,897	183,982
335.3	184,067	184,151	184,236	184,320	184,405	184,490	184,574	184,659	184,744	184,829
335.4	184,913	184,998	185,083	185,168	185,253	185,337	185,422	185,507	185,592	185,677
335.5	185,762	185,847	185,932	186,017	186,102	186,187	186,272	186,357	186,442	186,528
335.6	186,613	186,698	186,783	186,868	186,954	187,039	187,124	187,209	187,295	187,380
335.7	187,465	187,551	187,636	187,722	187,807	187,893	187,978	188,063	188,149	188,235
335.8	188,320	188,406	188,491	188,577	188,662	188,748	188,834	188,919	189,005	189,091
335.9	189,177	189,262	189,348	189,434	189,520	189,606	189,692	189,777	189,863	189,949
336	190,035	190,121	190,207	190,293	190,379	190,465	190,551	190,637	190,723	190,809
336.1	190,896	190,982	191,068	191,154	191,240	191,327	191,413	191,499	191,585	191,672
336.2	191,758	191,844	191,931	192,017	192,104	192,190	192,276	192,363	192,449	192,536
336.3	192,622	192,709	192,796	192,882	192,969	193,055	193,142	193,229	193,315	193,402
336.4	193,489	193,576	193,662	193,749	193,836	193,923	194,010	194,096	194,183	194,270
336.5	194,357	194,444	194,531	194,618	194,705	194,792	194,879	194,966	195,053	195,140
336.6	195,227	195,315	195,402	195,489	195,576	195,663	195,750	195,838	195,925	196,012
336.7	196,100	196,187	196,274	196,362	196,449	196,536	196,624	196,711	196,799	196,886
336.8	196,974	197,061	197,149	197,236	197,324	197,412	197,499	197,587	197,675	197,762
336.9	197,850	197,938	198,025	198,113	198,201	198,289	198,376	198,464	198,552	198,640

Appendix I (continued)

Lake Bob Sandlin

RESERVOIR CAPACITY TABLE

TEXAS WATER DEVELOPMENT BOARD — February 2018 Survey

CAPACITY IN ACRE-FEET — Conservation Pool Elevation 337.5 feet NGVD 29

ELEVATION INCREMENT IS ONE HUNDREDTH FOOT

ELEVATION in Feet	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
337	198,728	198,816	198,904	198,992	199,080	199,168	199,256	199,344	199,432	199,520
337.1	199,608	199,696	199,784	199,872	199,961	200,049	200,137	200,225	200,313	200,402
337.2	200,490	200,578	200,667	200,755	200,843	200,932	201,020	201,109	201,197	201,285
337.3	201,374	201,462	201,551	201,640	201,728	201,817	201,905	201,994	202,083	202,171
337.4	202,260	202,349	202,437	202,526	202,615	202,704	202,792	202,881	202,970	203,059
337.5	203,148	203,237	203,326	203,414	203,503	203,592	203,681	203,770	203,859	203,948
337.6	204,038	204,127	204,216	204,305	204,394	204,483	204,572	204,662	204,751	204,840
337.7	204,929	205,019	205,108	205,197	205,287	205,376	205,465			

Note: Capacities above elevation 335.0 feet calculated from interpolated and computed areas

Appendix J

Lake Bob Sandlin

RESERVOIR AREA TABLE

TEXAS WATER DEVELOPMENT BOARD — February 2018 Survey

AREA IN ACRES — Conservation Pool Elevation 337.5 feet NGVD 29

ELEVATION INCREMENT IS ONE HUNDREDTH FOOT

ELEVATION in Feet	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
282.9	0	0	0	0	0	0	0	0	0	0
283	0	0	0	0	0	0	0	0	0	0
283.1	0	0	0	0	0	0	0	0	0	0
283.2	0	0	0	0	0	0	0	0	0	0
283.3	0	0	0	0	0	0	0	0	0	0
283.4	0	0	0	0	0	0	0	0	0	0
283.5	0	0	0	0	0	0	0	0	0	0
283.6	0	0	0	0	0	0	0	0	0	1
283.7	1	1	1	1	1	1	1	1	1	1
283.8	1	1	1	1	1	1	1	1	1	1
283.9	1	1	1	1	1	1	1	1	1	1
284	1	1	1	1	1	1	1	1	1	1
284.1	1	1	1	1	2	2	2	2	2	2
284.2	2	2	2	2	2	2	2	2	2	2
284.3	2	2	2	2	2	2	2	2	2	2
284.4	2	2	2	2	2	2	2	3	3	3
284.5	3	3	3	3	3	3	3	3	3	3
284.6	3	3	3	3	3	3	3	3	3	3
284.7	3	3	3	3	3	3	3	3	3	4
284.8	4	4	4	4	4	4	4	4	4	4
284.9	4	4	4	4	4	4	4	4	4	4
285	4	4	4	4	4	4	4	4	5	5
285.1	5	5	5	5	5	5	5	5	5	5
285.2	5	5	5	5	5	5	5	5	5	5
285.3	5	5	5	5	6	6	6	6	6	6
285.4	6	6	6	6	6	6	6	6	6	6
285.5	6	6	6	6	6	6	6	6	6	7
285.6	7	7	7	7	7	7	7	7	7	7
285.7	7	7	7	7	7	7	7	7	7	7
285.8	7	7	7	7	8	8	8	8	8	8
285.9	8	8	8	8	8	8	8	8	8	8
286	8	8	8	8	8	8	9	9	9	9
286.1	9	9	9	9	9	9	9	9	9	9
286.2	9	10	10	10	10	10	10	10	10	10
286.3	10	10	11	11	11	11	11	11	11	11
286.4	11	11	12	12	12	12	12	12	12	12
286.5	13	13	13	13	13	13	14	14	14	14
286.6	14	14	14	15	15	15	15	15	15	16
286.7	16	16	16	16	16	17	17	17	17	17
286.8	18	18	18	18	18	18	19	19	19	19
286.9	19	20	20	20	20	20	21	21	21	21
287	21	22	22	22	22	22	23	23	23	23
287.1	23	24	24	24	24	24	25	25	25	25
287.2	25	26	26	26	27	27	27	27	28	28
287.3	28	29	29	29	30	30	31	31	31	32
287.4	32	32	33	33	33	34	34	34	35	35
287.5	35	36	36	36	37	37	38	38	38	39
287.6	39	39	40	40	40	41	41	42	42	42
287.7	43	43	44	44	45	45	45	46	46	47
287.8	47	48	48	49	49	49	50	50	51	51
287.9	52	52	53	53	54	54	55	55	56	56
288	57	57	58	58	59	60	60	61	61	62
288.1	63	63	64	65	65	66	67	67	68	69
288.2	70	70	71	72	72	73	74	75	76	77
288.3	77	78	79	80	81	82	83	84	86	87
288.4	88	89	90	91	92	93	95	96	97	98
288.5	99	100	101	103	104	105	106	108	109	110
288.6	111	112	113	115	116	117	118	119	120	122
288.7	123	124	125	126	128	129	130	131	133	134
288.8	135	136	137	139	140	141	142	144	145	146
288.9	148	149	151	152	153	154	156	157	158	159

Appendix J (continued)

Lake Bob Sandlin

RESERVOIR AREA TABLE

TEXAS WATER DEVELOPMENT BOARD — February 2018 Survey

AREA IN ACRES — Conservation Pool Elevation 337.5 feet NGVD 29

ELEVATION INCREMENT IS ONE HUNDREDTH FOOT

ELEVATION in Feet	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
289	160	161	163	164	165	167	168	169	171	172
289.1	173	174	176	177	178	179	180	182	183	184
289.2	186	187	188	190	191	192	194	195	196	198
289.3	199	200	202	203	204	206	207	208	210	211
289.4	212	213	214	216	217	218	219	220	222	224
289.5	225	226	228	229	230	231	232	233	235	236
289.6	237	238	240	241	242	244	245	246	248	249
289.7	251	252	253	255	256	258	259	261	262	264
289.8	265	267	268	270	271	273	275	276	278	280
289.9	281	283	284	286	287	289	290	292	293	295
290	296	298	299	300	302	303	304	305	307	308
290.1	309	310	311	313	314	315	316	317	318	320
290.2	321	322	323	324	326	327	328	329	330	332
290.3	333	334	335	336	338	339	340	341	342	344
290.4	345	346	347	348	349	350	352	353	354	355
290.5	356	358	359	360	361	362	363	365	366	367
290.6	368	369	370	371	373	374	375	376	378	379
290.7	380	381	383	384	385	387	388	389	391	392
290.8	393	395	396	398	399	401	402	404	405	407
290.9	409	411	413	415	417	419	421	424	426	428
291	430	432	434	436	438	441	443	446	449	451
291.1	453	455	458	461	464	466	468	471	473	475
291.2	477	479	481	484	486	488	491	493	496	498
291.3	501	503	506	508	510	512	514	516	517	519
291.4	521	523	525	527	529	531	533	535	536	538
291.5	540	542	544	545	547	549	551	553	554	556
291.6	558	559	561	563	564	566	567	569	570	571
291.7	573	574	575	577	578	579	581	582	583	584
291.8	585	587	588	589	590	591	593	594	595	596
291.9	597	598	599	601	602	604	605	606	607	608
292	609	610	611	612	613	614	615	616	617	618
292.1	619	620	621	622	623	624	625	625	626	627
292.2	628	629	631	632	633	634	635	636	637	638
292.3	639	640	641	642	643	644	645	646	647	648
292.4	648	649	651	652	653	654	655	656	656	657
292.5	658	659	660	661	662	663	664	665	666	667
292.6	668	669	670	671	672	673	675	676	677	678
292.7	679	680	682	683	684	685	686	688	689	690
292.8	692	693	695	696	697	699	700	702	703	704
292.9	706	707	708	710	711	713	714	715	717	718
293	720	721	723	724	725	726	728	729	730	732
293.1	733	735	736	737	739	740	741	743	744	746
293.2	747	748	750	751	752	754	755	756	758	759
293.3	760	762	764	765	766	768	769	771	772	774
293.4	776	777	779	780	781	783	784	785	787	788
293.5	789	791	792	794	795	796	798	799	800	801
293.6	803	804	805	806	808	809	810	811	813	814
293.7	816	817	818	820	821	823	824	825	826	828
293.8	829	830	831	832	834	835	836	837	838	840
293.9	841	842	844	845	846	847	848	850	851	852
294	853	855	856	858	859	861	862	864	865	867
294.1	869	871	872	874	876	878	880	882	884	886
294.2	887	889	891	892	894	896	897	899	901	902
294.3	904	906	907	909	911	913	914	916	917	919
294.4	920	922	923	925	926	928	929	931	933	934
294.5	936	937	939	940	942	943	945	946	948	949
294.6	951	952	954	955	957	958	960	961	963	964
294.7	966	967	969	970	972	973	975	976	978	979
294.8	980	982	983	984	986	987	989	990	991	993
294.9	994	996	997	999	1,000	1,002	1,003	1,005	1,006	1,008

Appendix J (continued)

Lake Bob Sandlin

RESERVOIR AREA TABLE

TEXAS WATER DEVELOPMENT BOARD — February 2018 Survey

AREA IN ACRES — Conservation Pool Elevation 337.5 feet NGVD 29

ELEVATION INCREMENT IS ONE HUNDREDTH FOOT

ELEVATION in Feet	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
295	1,009	1,011	1,012	1,013	1,015	1,016	1,018	1,019	1,021	1,022
295.1	1,023	1,025	1,026	1,027	1,029	1,030	1,031	1,033	1,034	1,035
295.2	1,037	1,038	1,040	1,042	1,043	1,045	1,046	1,048	1,049	1,050
295.3	1,052	1,053	1,055	1,056	1,057	1,059	1,060	1,062	1,063	1,065
295.4	1,066	1,068	1,069	1,071	1,072	1,074	1,076	1,078	1,079	1,081
295.5	1,082	1,084	1,086	1,087	1,089	1,091	1,093	1,094	1,096	1,098
295.6	1,100	1,102	1,104	1,106	1,108	1,109	1,111	1,113	1,115	1,117
295.7	1,119	1,122	1,124	1,126	1,127	1,129	1,131	1,133	1,134	1,136
295.8	1,138	1,139	1,141	1,143	1,145	1,146	1,148	1,150	1,152	1,153
295.9	1,155	1,157	1,159	1,160	1,162	1,164	1,165	1,167	1,169	1,170
296	1,172	1,174	1,175	1,177	1,179	1,181	1,182	1,184	1,186	1,188
296.1	1,190	1,192	1,194	1,196	1,198	1,200	1,202	1,204	1,206	1,208
296.2	1,210	1,212	1,214	1,216	1,218	1,220	1,221	1,223	1,225	1,227
296.3	1,229	1,231	1,233	1,235	1,236	1,238	1,240	1,242	1,244	1,246
296.4	1,247	1,249	1,251	1,254	1,256	1,258	1,259	1,261	1,263	1,265
296.5	1,266	1,268	1,270	1,271	1,273	1,275	1,276	1,278	1,280	1,281
296.6	1,283	1,285	1,286	1,288	1,290	1,291	1,293	1,295	1,297	1,298
296.7	1,300	1,302	1,304	1,305	1,307	1,309	1,311	1,312	1,314	1,316
296.8	1,317	1,319	1,320	1,322	1,324	1,325	1,327	1,329	1,330	1,332
296.9	1,334	1,335	1,337	1,338	1,340	1,341	1,343	1,344	1,346	1,348
297	1,349	1,351	1,352	1,354	1,355	1,357	1,358	1,360	1,362	1,363
297.1	1,365	1,366	1,368	1,370	1,371	1,373	1,374	1,376	1,377	1,379
297.2	1,380	1,382	1,383	1,385	1,386	1,388	1,390	1,391	1,393	1,394
297.3	1,396	1,397	1,399	1,400	1,402	1,403	1,405	1,407	1,408	1,410
297.4	1,411	1,413	1,414	1,416	1,417	1,419	1,420	1,422	1,423	1,425
297.5	1,426	1,428	1,429	1,431	1,432	1,434	1,435	1,437	1,438	1,440
297.6	1,442	1,443	1,445	1,446	1,448	1,449	1,451	1,452	1,454	1,455
297.7	1,457	1,458	1,460	1,461	1,463	1,464	1,466	1,467	1,468	1,470
297.8	1,471	1,473	1,474	1,476	1,477	1,478	1,480	1,481	1,482	1,484
297.9	1,485	1,487	1,488	1,489	1,491	1,492	1,493	1,495	1,496	1,497
298	1,499	1,500	1,501	1,503	1,504	1,506	1,507	1,509	1,510	1,512
298.1	1,513	1,515	1,516	1,518	1,519	1,520	1,521	1,523	1,524	1,525
298.2	1,527	1,528	1,530	1,531	1,532	1,534	1,535	1,537	1,538	1,540
298.3	1,541	1,543	1,544	1,546	1,547	1,549	1,550	1,552	1,553	1,555
298.4	1,556	1,558	1,560	1,561	1,563	1,564	1,566	1,567	1,568	1,570
298.5	1,571	1,572	1,573	1,575	1,576	1,577	1,579	1,580	1,581	1,582
298.6	1,583	1,585	1,586	1,587	1,588	1,590	1,591	1,592	1,594	1,595
298.7	1,596	1,598	1,599	1,601	1,602	1,603	1,605	1,606	1,607	1,609
298.8	1,610	1,612	1,614	1,615	1,617	1,619	1,621	1,623	1,625	1,627
298.9	1,629	1,630	1,632	1,634	1,635	1,637	1,639	1,641	1,643	1,645
299	1,647	1,649	1,651	1,652	1,654	1,656	1,657	1,659	1,661	1,663
299.1	1,664	1,666	1,668	1,670	1,672	1,673	1,675	1,677	1,679	1,681
299.2	1,683	1,685	1,687	1,689	1,690	1,692	1,694	1,695	1,697	1,699
299.3	1,700	1,702	1,704	1,705	1,707	1,708	1,710	1,711	1,713	1,714
299.4	1,715	1,717	1,718	1,720	1,721	1,722	1,724	1,725	1,726	1,728
299.5	1,729	1,730	1,731	1,733	1,734	1,735	1,736	1,738	1,739	1,740
299.6	1,742	1,743	1,744	1,745	1,747	1,748	1,750	1,751	1,752	1,754
299.7	1,755	1,756	1,757	1,759	1,760	1,761	1,763	1,764	1,765	1,767
299.8	1,768	1,769	1,771	1,772	1,774	1,775	1,776	1,778	1,779	1,781
299.9	1,782	1,783	1,785	1,786	1,788	1,790	1,791	1,793	1,794	1,796
300	1,797	1,799	1,801	1,802	1,804	1,805	1,807	1,808	1,810	1,811
300.1	1,813	1,814	1,815	1,817	1,818	1,820	1,821	1,823	1,825	1,827
300.2	1,829	1,831	1,834	1,836	1,837	1,839	1,841	1,843	1,845	1,846
300.3	1,848	1,849	1,851	1,852	1,854	1,856	1,857	1,859	1,860	1,862
300.4	1,863	1,865	1,866	1,868	1,869	1,871	1,872	1,874	1,875	1,876
300.5	1,878	1,879	1,881	1,882	1,884	1,885	1,886	1,888	1,889	1,890
300.6	1,892	1,893	1,895	1,896	1,898	1,899	1,901	1,902	1,904	1,905
300.7	1,907	1,908	1,910	1,911	1,913	1,914	1,916	1,917	1,919	1,920
300.8	1,922	1,924	1,925	1,927	1,929	1,930	1,932	1,934	1,936	1,937
300.9	1,939	1,941	1,943	1,944	1,946	1,948	1,949	1,951	1,952	1,954

Appendix J (continued)

Lake Bob Sandlin

RESERVOIR AREA TABLE

TEXAS WATER DEVELOPMENT BOARD — February 2018 Survey

AREA IN ACRES — Conservation Pool Elevation 337.5 feet NGVD 29

ELEVATION INCREMENT IS ONE HUNDREDTH FOOT

ELEVATION in Feet	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
301	1,955	1,957	1,958	1,960	1,961	1,962	1,964	1,965	1,966	1,968
301.1	1,969	1,971	1,972	1,974	1,975	1,976	1,978	1,979	1,981	1,982
301.2	1,983	1,985	1,986	1,988	1,989	1,990	1,991	1,992	1,994	1,995
301.3	1,996	1,997	1,999	2,000	2,001	2,002	2,004	2,005	2,006	2,007
301.4	2,008	2,010	2,011	2,012	2,014	2,015	2,016	2,017	2,019	2,020
301.5	2,021	2,022	2,023	2,025	2,026	2,027	2,028	2,029	2,031	2,032
301.6	2,033	2,034	2,035	2,037	2,038	2,039	2,040	2,041	2,043	2,044
301.7	2,045	2,046	2,047	2,049	2,050	2,051	2,052	2,054	2,055	2,056
301.8	2,058	2,059	2,060	2,062	2,063	2,064	2,065	2,067	2,068	2,069
301.9	2,071	2,072	2,073	2,075	2,076	2,078	2,080	2,081	2,083	2,084
302	2,086	2,087	2,089	2,091	2,092	2,094	2,096	2,098	2,099	2,101
302.1	2,103	2,105	2,106	2,108	2,110	2,112	2,114	2,116	2,117	2,119
302.2	2,120	2,122	2,123	2,125	2,127	2,128	2,130	2,131	2,133	2,134
302.3	2,136	2,137	2,139	2,141	2,142	2,144	2,145	2,146	2,148	2,150
302.4	2,151	2,153	2,155	2,156	2,158	2,160	2,161	2,163	2,165	2,166
302.5	2,168	2,169	2,171	2,173	2,174	2,176	2,177	2,179	2,181	2,182
302.6	2,184	2,185	2,187	2,188	2,190	2,191	2,193	2,194	2,196	2,197
302.7	2,199	2,201	2,202	2,204	2,205	2,207	2,208	2,210	2,212	2,213
302.8	2,215	2,216	2,218	2,220	2,221	2,223	2,224	2,226	2,228	2,229
302.9	2,231	2,232	2,234	2,236	2,237	2,239	2,241	2,242	2,244	2,245
303	2,247	2,248	2,250	2,252	2,253	2,255	2,256	2,258	2,260	2,261
303.1	2,263	2,265	2,266	2,268	2,270	2,272	2,273	2,275	2,277	2,278
303.2	2,280	2,281	2,283	2,284	2,286	2,287	2,288	2,290	2,291	2,293
303.3	2,294	2,296	2,297	2,299	2,301	2,302	2,304	2,305	2,307	2,308
303.4	2,309	2,311	2,312	2,314	2,315	2,316	2,318	2,319	2,321	2,322
303.5	2,324	2,325	2,327	2,329	2,330	2,332	2,334	2,335	2,337	2,338
303.6	2,340	2,341	2,343	2,344	2,346	2,347	2,349	2,350	2,352	2,353
303.7	2,355	2,356	2,358	2,359	2,361	2,362	2,364	2,365	2,367	2,368
303.8	2,370	2,371	2,373	2,374	2,376	2,377	2,379	2,380	2,382	2,383
303.9	2,385	2,386	2,388	2,390	2,391	2,393	2,394	2,396	2,397	2,399
304	2,401	2,402	2,404	2,405	2,407	2,408	2,410	2,412	2,413	2,415
304.1	2,416	2,418	2,420	2,421	2,423	2,425	2,426	2,428	2,430	2,432
304.2	2,434	2,435	2,437	2,438	2,440	2,442	2,443	2,445	2,447	2,448
304.3	2,450	2,451	2,453	2,455	2,456	2,458	2,459	2,461	2,462	2,464
304.4	2,465	2,466	2,468	2,469	2,470	2,472	2,473	2,474	2,476	2,477
304.5	2,478	2,480	2,481	2,482	2,484	2,485	2,486	2,488	2,489	2,490
304.6	2,491	2,493	2,494	2,495	2,496	2,498	2,499	2,500	2,501	2,503
304.7	2,504	2,505	2,506	2,508	2,509	2,510	2,511	2,512	2,514	2,515
304.8	2,516	2,517	2,518	2,520	2,521	2,522	2,523	2,524	2,526	2,527
304.9	2,528	2,530	2,531	2,532	2,534	2,535	2,537	2,538	2,539	2,541
305	2,542	2,543	2,545	2,546	2,547	2,549	2,550	2,552	2,553	2,554
305.1	2,556	2,557	2,558	2,560	2,561	2,562	2,564	2,565	2,566	2,568
305.2	2,569	2,570	2,571	2,573	2,574	2,575	2,577	2,578	2,579	2,580
305.3	2,582	2,583	2,584	2,586	2,587	2,588	2,590	2,591	2,592	2,594
305.4	2,595	2,596	2,598	2,599	2,600	2,602	2,603	2,604	2,605	2,607
305.5	2,608	2,609	2,610	2,612	2,613	2,614	2,615	2,617	2,618	2,619
305.6	2,620	2,622	2,623	2,624	2,625	2,626	2,628	2,629	2,630	2,632
305.7	2,633	2,634	2,635	2,637	2,638	2,640	2,641	2,642	2,643	2,645
305.8	2,646	2,647	2,648	2,649	2,651	2,652	2,653	2,655	2,656	2,657
305.9	2,658	2,659	2,661	2,662	2,663	2,664	2,666	2,667	2,668	2,669
306	2,671	2,672	2,673	2,674	2,676	2,677	2,678	2,679	2,681	2,682
306.1	2,683	2,684	2,685	2,687	2,688	2,689	2,691	2,692	2,693	2,695
306.2	2,696	2,698	2,699	2,701	2,702	2,704	2,705	2,707	2,709	2,711
306.3	2,713	2,715	2,716	2,718	2,720	2,721	2,723	2,724	2,726	2,727
306.4	2,729	2,730	2,732	2,733	2,735	2,736	2,737	2,739	2,740	2,742
306.5	2,743	2,745	2,746	2,748	2,750	2,751	2,753	2,754	2,756	2,757
306.6	2,759	2,760	2,762	2,763	2,765	2,766	2,767	2,769	2,770	2,771
306.7	2,773	2,774	2,775	2,776	2,778	2,779	2,780	2,782	2,783	2,785
306.8	2,786	2,787	2,789	2,790	2,791	2,793	2,794	2,795	2,797	2,798
306.9	2,800	2,801	2,803	2,804	2,805	2,807	2,808	2,809	2,811	2,812

Appendix J (continued)

Lake Bob Sandlin

RESERVOIR AREA TABLE

TEXAS WATER DEVELOPMENT BOARD — February 2018 Survey

AREA IN ACRES — Conservation Pool Elevation 337.5 feet NGVD 29

ELEVATION INCREMENT IS ONE HUNDREDTH FOOT

ELEVATION in Feet	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
307	2,813	2,814	2,816	2,817	2,818	2,820	2,821	2,822	2,824	2,825
307.1	2,827	2,828	2,829	2,831	2,832	2,834	2,835	2,836	2,838	2,839
307.2	2,841	2,842	2,843	2,845	2,846	2,848	2,849	2,850	2,852	2,854
307.3	2,855	2,857	2,858	2,860	2,862	2,863	2,865	2,867	2,869	2,871
307.4	2,873	2,875	2,876	2,878	2,880	2,881	2,883	2,885	2,887	2,888
307.5	2,890	2,892	2,893	2,895	2,896	2,898	2,899	2,901	2,902	2,904
307.6	2,905	2,907	2,908	2,910	2,911	2,913	2,915	2,916	2,918	2,919
307.7	2,921	2,922	2,924	2,926	2,927	2,929	2,930	2,932	2,933	2,935
307.8	2,936	2,938	2,939	2,940	2,942	2,944	2,945	2,947	2,949	2,950
307.9	2,952	2,953	2,955	2,956	2,958	2,959	2,961	2,962	2,963	2,965
308	2,966	2,967	2,969	2,970	2,971	2,972	2,974	2,975	2,976	2,977
308.1	2,979	2,980	2,981	2,982	2,984	2,985	2,986	2,988	2,989	2,990
308.2	2,991	2,993	2,994	2,995	2,997	2,998	2,999	3,001	3,002	3,003
308.3	3,004	3,006	3,007	3,008	3,010	3,011	3,012	3,013	3,015	3,016
308.4	3,017	3,018	3,019	3,021	3,022	3,023	3,025	3,026	3,027	3,029
308.5	3,030	3,031	3,032	3,033	3,034	3,036	3,037	3,038	3,039	3,040
308.6	3,042	3,043	3,044	3,045	3,046	3,048	3,049	3,050	3,051	3,053
308.7	3,054	3,055	3,056	3,058	3,059	3,060	3,061	3,062	3,064	3,065
308.8	3,066	3,067	3,068	3,070	3,071	3,072	3,073	3,075	3,076	3,077
308.9	3,078	3,079	3,080	3,082	3,083	3,084	3,085	3,086	3,087	3,088
309	3,090	3,091	3,092	3,093	3,094	3,096	3,097	3,098	3,100	3,101
309.1	3,102	3,103	3,105	3,106	3,107	3,109	3,110	3,111	3,113	3,114
309.2	3,116	3,117	3,118	3,120	3,121	3,122	3,124	3,125	3,126	3,128
309.3	3,129	3,130	3,132	3,133	3,134	3,135	3,136	3,138	3,139	3,140
309.4	3,141	3,142	3,144	3,145	3,146	3,147	3,149	3,150	3,151	3,152
309.5	3,153	3,154	3,156	3,157	3,158	3,159	3,161	3,162	3,163	3,165
309.6	3,166	3,167	3,168	3,170	3,171	3,172	3,173	3,174	3,176	3,177
309.7	3,178	3,180	3,181	3,182	3,184	3,185	3,187	3,188	3,190	3,191
309.8	3,193	3,194	3,196	3,197	3,199	3,201	3,202	3,204	3,205	3,207
309.9	3,208	3,209	3,211	3,212	3,213	3,215	3,216	3,217	3,219	3,220
310	3,222	3,223	3,224	3,226	3,227	3,229	3,230	3,231	3,233	3,234
310.1	3,236	3,237	3,238	3,240	3,241	3,243	3,244	3,246	3,247	3,249
310.2	3,250	3,252	3,253	3,255	3,256	3,258	3,260	3,262	3,263	3,265
310.3	3,267	3,268	3,270	3,272	3,273	3,275	3,277	3,278	3,280	3,281
310.4	3,283	3,285	3,286	3,288	3,290	3,291	3,293	3,294	3,296	3,298
310.5	3,299	3,301	3,302	3,304	3,305	3,307	3,308	3,310	3,311	3,313
310.6	3,314	3,315	3,317	3,318	3,320	3,321	3,323	3,324	3,325	3,327
310.7	3,328	3,330	3,331	3,332	3,334	3,335	3,336	3,338	3,339	3,341
310.8	3,342	3,343	3,345	3,346	3,348	3,349	3,350	3,352	3,353	3,355
310.9	3,356	3,358	3,359	3,361	3,362	3,364	3,366	3,367	3,369	3,370
311	3,372	3,374	3,375	3,377	3,378	3,380	3,382	3,383	3,385	3,387
311.1	3,389	3,390	3,392	3,394	3,396	3,398	3,399	3,401	3,404	3,406
311.2	3,408	3,410	3,412	3,414	3,416	3,418	3,420	3,422	3,423	3,425
311.3	3,427	3,429	3,431	3,432	3,434	3,436	3,437	3,439	3,441	3,443
311.4	3,444	3,446	3,448	3,450	3,452	3,454	3,456	3,458	3,460	3,462
311.5	3,464	3,466	3,467	3,469	3,471	3,473	3,475	3,477	3,479	3,481
311.6	3,483	3,484	3,486	3,488	3,490	3,492	3,494	3,496	3,498	3,499
311.7	3,501	3,503	3,505	3,507	3,509	3,511	3,512	3,514	3,516	3,518
311.8	3,520	3,523	3,525	3,527	3,529	3,531	3,533	3,535	3,537	3,539
311.9	3,541	3,543	3,545	3,547	3,549	3,551	3,553	3,555	3,557	3,559
312	3,561	3,563	3,564	3,566	3,568	3,570	3,571	3,573	3,575	3,577
312.1	3,579	3,581	3,582	3,584	3,586	3,588	3,590	3,592	3,594	3,596
312.2	3,598	3,599	3,601	3,603	3,605	3,607	3,608	3,610	3,612	3,614
312.3	3,615	3,617	3,619	3,621	3,622	3,624	3,626	3,628	3,630	3,631
312.4	3,633	3,635	3,637	3,639	3,641	3,643	3,645	3,648	3,650	3,652
312.5	3,654	3,656	3,658	3,661	3,663	3,665	3,667	3,669	3,671	3,673
312.6	3,676	3,678	3,680	3,683	3,685	3,688	3,690	3,692	3,695	3,697
312.7	3,699	3,702	3,704	3,707	3,709	3,711	3,714	3,716	3,718	3,721
312.8	3,723	3,725	3,728	3,730	3,733	3,736	3,738	3,740	3,743	3,745
312.9	3,748	3,750	3,753	3,755	3,758	3,760	3,762	3,765	3,767	3,770

Appendix J (continued)

Lake Bob Sandlin

RESERVOIR AREA TABLE

TEXAS WATER DEVELOPMENT BOARD — February 2018 Survey

AREA IN ACRES — Conservation Pool Elevation 337.5 feet NGVD 29

ELEVATION INCREMENT IS ONE HUNDREDTH FOOT

ELEVATION in Feet	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
313	3,772	3,774	3,777	3,779	3,782	3,785	3,787	3,790	3,793	3,795
313.1	3,798	3,800	3,803	3,805	3,807	3,810	3,812	3,815	3,817	3,819
313.2	3,821	3,823	3,826	3,828	3,831	3,833	3,836	3,838	3,840	3,842
313.3	3,844	3,846	3,848	3,850	3,852	3,854	3,856	3,858	3,859	3,861
313.4	3,863	3,865	3,867	3,869	3,871	3,873	3,875	3,877	3,879	3,882
313.5	3,884	3,886	3,888	3,890	3,892	3,895	3,897	3,899	3,902	3,904
313.6	3,907	3,909	3,911	3,913	3,916	3,918	3,920	3,923	3,925	3,927
313.7	3,930	3,932	3,934	3,937	3,939	3,942	3,944	3,947	3,949	3,952
313.8	3,955	3,957	3,960	3,962	3,965	3,967	3,970	3,972	3,975	3,977
313.9	3,980	3,982	3,985	3,987	3,990	3,992	3,994	3,996	3,998	4,000
314	4,003	4,005	4,007	4,009	4,011	4,013	4,016	4,018	4,020	4,022
314.1	4,024	4,026	4,028	4,030	4,032	4,034	4,036	4,038	4,041	4,043
314.2	4,045	4,047	4,050	4,052	4,054	4,057	4,059	4,061	4,063	4,066
314.3	4,068	4,070	4,073	4,075	4,077	4,080	4,082	4,085	4,087	4,089
314.4	4,091	4,094	4,096	4,098	4,101	4,103	4,106	4,108	4,111	4,113
314.5	4,116	4,118	4,121	4,123	4,126	4,128	4,130	4,132	4,134	4,136
314.6	4,139	4,141	4,143	4,145	4,148	4,150	4,152	4,153	4,155	4,157
314.7	4,159	4,161	4,163	4,165	4,167	4,169	4,171	4,173	4,175	4,177
314.8	4,179	4,181	4,183	4,185	4,187	4,189	4,191	4,193	4,195	4,197
314.9	4,199	4,201	4,203	4,205	4,207	4,209	4,211	4,212	4,214	4,216
315	4,218	4,220	4,221	4,223	4,225	4,227	4,229	4,230	4,232	4,234
315.1	4,235	4,237	4,239	4,241	4,242	4,244	4,246	4,248	4,250	4,251
315.2	4,253	4,255	4,257	4,259	4,261	4,262	4,264	4,266	4,267	4,269
315.3	4,271	4,273	4,275	4,276	4,278	4,280	4,282	4,283	4,285	4,287
315.4	4,289	4,291	4,293	4,295	4,296	4,298	4,300	4,302	4,304	4,306
315.5	4,308	4,310	4,312	4,314	4,316	4,318	4,320	4,322	4,324	4,326
315.6	4,328	4,330	4,332	4,335	4,337	4,339	4,341	4,343	4,345	4,347
315.7	4,349	4,351	4,352	4,354	4,356	4,358	4,360	4,362	4,364	4,365
315.8	4,367	4,369	4,371	4,373	4,374	4,376	4,378	4,380	4,381	4,383
315.9	4,385	4,387	4,389	4,391	4,393	4,395	4,397	4,399	4,401	4,403
316	4,405	4,407	4,409	4,411	4,413	4,415	4,417	4,419	4,420	4,422
316.1	4,424	4,426	4,428	4,430	4,432	4,434	4,436	4,437	4,439	4,441
316.2	4,443	4,445	4,447	4,449	4,451	4,453	4,455	4,457	4,459	4,461
316.3	4,462	4,464	4,466	4,468	4,470	4,472	4,474	4,476	4,478	4,479
316.4	4,481	4,483	4,485	4,487	4,489	4,491	4,493	4,495	4,497	4,499
316.5	4,502	4,504	4,506	4,508	4,509	4,511	4,513	4,515	4,517	4,519
316.6	4,521	4,523	4,525	4,527	4,529	4,531	4,533	4,535	4,537	4,539
316.7	4,541	4,543	4,545	4,546	4,548	4,550	4,552	4,554	4,556	4,558
316.8	4,560	4,562	4,564	4,565	4,567	4,569	4,571	4,573	4,575	4,577
316.9	4,579	4,581	4,582	4,584	4,586	4,588	4,590	4,592	4,593	4,595
317	4,597	4,599	4,601	4,603	4,605	4,607	4,609	4,611	4,613	4,615
317.1	4,617	4,619	4,621	4,623	4,625	4,627	4,629	4,631	4,633	4,635
317.2	4,638	4,640	4,642	4,644	4,647	4,649	4,651	4,653	4,656	4,658
317.3	4,660	4,663	4,665	4,668	4,670	4,673	4,676	4,679	4,682	4,685
317.4	4,688	4,692	4,695	4,698	4,701	4,704	4,707	4,710	4,714	4,717
317.5	4,720	4,723	4,726	4,729	4,732	4,735	4,738	4,741	4,744	4,747
317.6	4,750	4,753	4,756	4,758	4,762	4,765	4,768	4,771	4,774	4,778
317.7	4,781	4,785	4,788	4,792	4,795	4,798	4,801	4,805	4,808	4,810
317.8	4,813	4,816	4,819	4,822	4,825	4,828	4,831	4,833	4,836	4,839
317.9	4,842	4,844	4,847	4,850	4,852	4,855	4,858	4,860	4,863	4,866
318	4,868	4,871	4,874	4,876	4,879	4,882	4,884	4,887	4,890	4,892
318.1	4,895	4,898	4,901	4,903	4,906	4,908	4,911	4,913	4,916	4,919
318.2	4,921	4,924	4,926	4,929	4,931	4,934	4,937	4,939	4,942	4,945
318.3	4,947	4,950	4,952	4,954	4,956	4,959	4,961	4,963	4,965	4,967
318.4	4,970	4,972	4,974	4,976	4,978	4,981	4,983	4,985	4,987	4,990
318.5	4,992	4,994	4,996	4,998	5,000	5,002	5,005	5,007	5,009	5,011
318.6	5,014	5,017	5,019	5,022	5,025	5,027	5,030	5,032	5,035	5,038
318.7	5,040	5,043	5,045	5,048	5,051	5,053	5,056	5,059	5,062	5,064
318.8	5,067	5,070	5,072	5,075	5,078	5,080	5,083	5,086	5,088	5,091
318.9	5,093	5,096	5,098	5,101	5,103	5,106	5,108	5,111	5,113	5,116

Appendix J (continued)

Lake Bob Sandlin

RESERVOIR AREA TABLE

TEXAS WATER DEVELOPMENT BOARD — February 2018 Survey

AREA IN ACRES — Conservation Pool Elevation 337.5 feet NGVD 29

ELEVATION INCREMENT IS ONE HUNDREDTH FOOT

ELEVATION in Feet	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
319	5,118	5,121	5,123	5,126	5,128	5,130	5,133	5,135	5,137	5,140
319.1	5,142	5,145	5,147	5,150	5,152	5,155	5,158	5,160	5,162	5,165
319.2	5,167	5,170	5,172	5,175	5,177	5,180	5,182	5,185	5,187	5,190
319.3	5,192	5,194	5,197	5,199	5,201	5,204	5,206	5,208	5,211	5,213
319.4	5,215	5,217	5,219	5,222	5,224	5,226	5,228	5,230	5,233	5,235
319.5	5,237	5,240	5,242	5,244	5,246	5,249	5,251	5,253	5,255	5,257
319.6	5,259	5,261	5,263	5,265	5,267	5,269	5,271	5,274	5,276	5,278
319.7	5,280	5,282	5,285	5,287	5,289	5,291	5,293	5,295	5,298	5,300
319.8	5,302	5,304	5,306	5,309	5,311	5,314	5,316	5,319	5,321	5,323
319.9	5,326	5,328	5,330	5,332	5,334	5,337	5,339	5,341	5,343	5,346
320	5,348	5,350	5,352	5,354	5,356	5,358	5,360	5,363	5,365	5,367
320.1	5,369	5,371	5,374	5,376	5,379	5,381	5,383	5,385	5,388	5,390
320.2	5,393	5,395	5,397	5,399	5,401	5,403	5,405	5,407	5,409	5,412
320.3	5,414	5,416	5,419	5,421	5,423	5,425	5,427	5,429	5,431	5,433
320.4	5,435	5,437	5,439	5,441	5,443	5,445	5,447	5,449	5,451	5,453
320.5	5,455	5,457	5,459	5,461	5,463	5,464	5,466	5,468	5,470	5,472
320.6	5,474	5,476	5,478	5,480	5,482	5,484	5,486	5,489	5,491	5,493
320.7	5,495	5,497	5,499	5,501	5,503	5,506	5,508	5,510	5,512	5,514
320.8	5,517	5,519	5,520	5,522	5,524	5,526	5,528	5,530	5,532	5,533
320.9	5,535	5,537	5,539	5,541	5,543	5,544	5,546	5,548	5,550	5,552
321	5,554	5,556	5,558	5,560	5,562	5,565	5,567	5,569	5,571	5,573
321.1	5,575	5,577	5,579	5,581	5,583	5,585	5,587	5,589	5,591	5,594
321.2	5,596	5,598	5,600	5,602	5,604	5,606	5,608	5,610	5,612	5,613
321.3	5,615	5,617	5,619	5,621	5,623	5,625	5,627	5,629	5,631	5,633
321.4	5,635	5,637	5,639	5,641	5,643	5,645	5,647	5,649	5,651	5,653
321.5	5,654	5,656	5,658	5,660	5,662	5,664	5,666	5,668	5,670	5,672
321.6	5,674	5,676	5,677	5,679	5,681	5,683	5,685	5,687	5,689	5,690
321.7	5,692	5,694	5,696	5,698	5,700	5,702	5,704	5,705	5,707	5,709
321.8	5,711	5,713	5,714	5,716	5,718	5,719	5,721	5,723	5,725	5,727
321.9	5,728	5,730	5,732	5,734	5,735	5,737	5,739	5,741	5,742	5,744
322	5,746	5,748	5,749	5,751	5,753	5,754	5,756	5,758	5,760	5,762
322.1	5,763	5,765	5,767	5,769	5,770	5,772	5,774	5,776	5,777	5,779
322.2	5,781	5,783	5,785	5,787	5,788	5,790	5,792	5,794	5,796	5,797
322.3	5,799	5,801	5,803	5,805	5,806	5,808	5,810	5,813	5,815	5,817
322.4	5,819	5,821	5,823	5,825	5,827	5,829	5,831	5,832	5,834	5,836
322.5	5,838	5,840	5,841	5,843	5,845	5,847	5,848	5,850	5,852	5,854
322.6	5,855	5,857	5,859	5,861	5,862	5,864	5,866	5,868	5,870	5,871
322.7	5,873	5,875	5,877	5,879	5,881	5,883	5,885	5,887	5,888	5,890
322.8	5,892	5,894	5,896	5,898	5,899	5,901	5,903	5,905	5,907	5,908
322.9	5,910	5,912	5,914	5,916	5,918	5,920	5,922	5,923	5,925	5,927
323	5,929	5,931	5,933	5,935	5,936	5,938	5,940	5,942	5,943	5,945
323.1	5,947	5,949	5,950	5,952	5,954	5,955	5,957	5,959	5,961	5,962
323.2	5,964	5,966	5,968	5,969	5,971	5,973	5,975	5,976	5,978	5,980
323.3	5,981	5,983	5,985	5,987	5,989	5,990	5,992	5,994	5,995	5,997
323.4	5,999	6,001	6,003	6,004	6,006	6,008	6,010	6,012	6,013	6,015
323.5	6,017	6,019	6,021	6,022	6,024	6,026	6,028	6,029	6,031	6,033
323.6	6,035	6,036	6,038	6,040	6,041	6,043	6,045	6,047	6,048	6,050
323.7	6,052	6,053	6,055	6,057	6,058	6,060	6,062	6,063	6,065	6,067
323.8	6,069	6,070	6,072	6,074	6,076	6,077	6,079	6,081	6,083	6,085
323.9	6,087	6,089	6,090	6,092	6,094	6,096	6,098	6,099	6,101	6,103
324	6,104	6,106	6,108	6,110	6,112	6,113	6,115	6,117	6,119	6,120
324.1	6,122	6,124	6,126	6,127	6,129	6,131	6,133	6,135	6,137	6,138
324.2	6,140	6,142	6,144	6,146	6,148	6,150	6,152	6,153	6,155	6,157
324.3	6,159	6,161	6,163	6,165	6,166	6,168	6,170	6,172	6,174	6,176
324.4	6,178	6,180	6,182	6,184	6,186	6,188	6,190	6,192	6,194	6,196
324.5	6,198	6,200	6,202	6,204	6,206	6,208	6,210	6,212	6,214	6,215
324.6	6,217	6,219	6,221	6,223	6,225	6,227	6,229	6,231	6,233	6,235
324.7	6,237	6,239	6,241	6,242	6,244	6,247	6,249	6,251	6,253	6,255
324.8	6,257	6,259	6,261	6,263	6,266	6,268	6,271	6,273	6,275	6,277
324.9	6,279	6,281	6,283	6,286	6,288	6,290	6,292	6,294	6,296	6,298

Appendix J (continued)

Lake Bob Sandlin

RESERVOIR AREA TABLE

TEXAS WATER DEVELOPMENT BOARD — February 2018 Survey

AREA IN ACRES — Conservation Pool Elevation 337.5 feet NGVD 29

ELEVATION INCREMENT IS ONE HUNDREDTH FOOT

ELEVATION in Feet	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
325	6,300	6,302	6,304	6,306	6,308	6,310	6,312	6,314	6,316	6,318
325.1	6,320	6,323	6,325	6,327	6,329	6,331	6,334	6,336	6,338	6,340
325.2	6,343	6,345	6,347	6,349	6,352	6,354	6,356	6,358	6,361	6,363
325.3	6,365	6,367	6,370	6,372	6,374	6,376	6,378	6,381	6,383	6,385
325.4	6,387	6,389	6,392	6,394	6,396	6,399	6,401	6,404	6,406	6,409
325.5	6,411	6,414	6,416	6,419	6,422	6,424	6,427	6,429	6,432	6,434
325.6	6,437	6,439	6,442	6,444	6,447	6,449	6,451	6,454	6,456	6,459
325.7	6,461	6,463	6,466	6,468	6,471	6,473	6,475	6,478	6,480	6,483
325.8	6,485	6,487	6,490	6,492	6,494	6,497	6,499	6,501	6,504	6,506
325.9	6,509	6,511	6,514	6,516	6,518	6,521	6,523	6,526	6,528	6,531
326	6,533	6,536	6,538	6,541	6,544	6,546	6,549	6,551	6,554	6,557
326.1	6,559	6,562	6,564	6,567	6,569	6,572	6,574	6,577	6,579	6,582
326.2	6,585	6,587	6,590	6,593	6,596	6,598	6,601	6,604	6,607	6,610
326.3	6,612	6,615	6,618	6,620	6,623	6,626	6,628	6,631	6,634	6,636
326.4	6,639	6,642	6,645	6,647	6,650	6,652	6,655	6,657	6,660	6,662
326.5	6,665	6,667	6,669	6,672	6,674	6,676	6,679	6,681	6,683	6,685
326.6	6,687	6,690	6,692	6,694	6,696	6,699	6,701	6,703	6,706	6,708
326.7	6,710	6,712	6,715	6,717	6,719	6,721	6,724	6,726	6,728	6,730
326.8	6,733	6,735	6,737	6,740	6,742	6,744	6,747	6,749	6,751	6,753
326.9	6,756	6,758	6,760	6,762	6,764	6,766	6,768	6,770	6,773	6,775
327	6,777	6,779	6,781	6,783	6,786	6,788	6,790	6,792	6,795	6,797
327.1	6,799	6,801	6,804	6,806	6,808	6,810	6,813	6,815	6,817	6,820
327.2	6,822	6,825	6,827	6,830	6,832	6,835	6,837	6,840	6,843	6,845
327.3	6,848	6,851	6,853	6,856	6,859	6,862	6,865	6,868	6,870	6,873
327.4	6,876	6,879	6,881	6,884	6,887	6,890	6,893	6,895	6,898	6,901
327.5	6,903	6,906	6,909	6,911	6,914	6,916	6,919	6,922	6,924	6,927
327.6	6,930	6,932	6,935	6,938	6,940	6,943	6,946	6,949	6,951	6,954
327.7	6,957	6,959	6,962	6,964	6,967	6,970	6,972	6,975	6,977	6,980
327.8	6,982	6,985	6,988	6,990	6,993	6,995	6,998	7,001	7,003	7,006
327.9	7,008	7,011	7,013	7,016	7,018	7,021	7,023	7,025	7,028	7,030
328	7,032	7,035	7,037	7,039	7,042	7,044	7,046	7,049	7,051	7,053
328.1	7,056	7,058	7,060	7,063	7,065	7,067	7,070	7,072	7,074	7,076
328.2	7,079	7,081	7,083	7,085	7,088	7,090	7,092	7,095	7,097	7,099
328.3	7,102	7,104	7,106	7,108	7,111	7,113	7,116	7,118	7,120	7,123
328.4	7,125	7,127	7,130	7,132	7,134	7,137	7,139	7,141	7,143	7,145
328.5	7,148	7,150	7,152	7,154	7,157	7,159	7,162	7,165	7,167	7,169
328.6	7,171	7,174	7,176	7,178	7,180	7,182	7,185	7,187	7,189	7,191
328.7	7,193	7,196	7,198	7,200	7,202	7,205	7,207	7,209	7,212	7,214
328.8	7,216	7,218	7,220	7,223	7,225	7,227	7,229	7,231	7,233	7,235
328.9	7,238	7,240	7,242	7,244	7,247	7,249	7,251	7,254	7,256	7,258
329	7,260	7,262	7,265	7,267	7,269	7,271	7,274	7,276	7,278	7,281
329.1	7,283	7,285	7,288	7,290	7,292	7,295	7,297	7,299	7,301	7,303
329.2	7,305	7,307	7,310	7,312	7,314	7,316	7,318	7,320	7,322	7,324
329.3	7,326	7,328	7,330	7,332	7,334	7,336	7,338	7,340	7,342	7,344
329.4	7,346	7,349	7,351	7,353	7,355	7,357	7,359	7,361	7,363	7,366
329.5	7,368	7,370	7,372	7,374	7,376	7,378	7,380	7,382	7,384	7,387
329.6	7,389	7,391	7,393	7,395	7,397	7,399	7,401	7,403	7,405	7,407
329.7	7,409	7,411	7,413	7,415	7,417	7,419	7,421	7,423	7,425	7,427
329.8	7,428	7,430	7,432	7,434	7,436	7,438	7,440	7,442	7,444	7,446
329.9	7,447	7,449	7,451	7,453	7,455	7,457	7,458	7,460	7,462	7,464
330	7,466	7,467	7,469	7,471	7,473	7,475	7,476	7,478	7,480	7,482
330.1	7,484	7,486	7,487	7,489	7,491	7,493	7,495	7,496	7,498	7,500
330.2	7,502	7,504	7,506	7,508	7,509	7,511	7,513	7,515	7,517	7,519
330.3	7,521	7,522	7,524	7,526	7,528	7,530	7,531	7,533	7,535	7,537
330.4	7,539	7,541	7,542	7,544	7,546	7,548	7,550	7,552	7,554	7,556
330.5	7,557	7,559	7,561	7,563	7,565	7,567	7,569	7,571	7,573	7,574
330.6	7,576	7,578	7,580	7,582	7,584	7,586	7,588	7,590	7,591	7,593
330.7	7,595	7,597	7,599	7,601	7,603	7,605	7,607	7,609	7,611	7,613
330.8	7,614	7,616	7,618	7,620	7,622	7,624	7,626	7,628	7,630	7,632
330.9	7,633	7,635	7,637	7,639	7,641	7,643	7,645	7,647	7,649	7,650

Appendix J (continued)

Lake Bob Sandlin

RESERVOIR AREA TABLE

TEXAS WATER DEVELOPMENT BOARD — February 2018 Survey

AREA IN ACRES — Conservation Pool Elevation 337.5 feet NGVD 29

ELEVATION INCREMENT IS ONE HUNDREDTH FOOT

ELEVATION in Feet	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
331	7,652	7,654	7,656	7,658	7,660	7,662	7,664	7,666	7,667	7,669
331.1	7,671	7,673	7,675	7,677	7,679	7,681	7,683	7,685	7,687	7,689
331.2	7,691	7,692	7,694	7,696	7,698	7,700	7,702	7,704	7,706	7,708
331.3	7,710	7,712	7,713	7,715	7,717	7,719	7,721	7,723	7,725	7,727
331.4	7,729	7,731	7,733	7,735	7,737	7,739	7,741	7,742	7,744	7,746
331.5	7,748	7,750	7,752	7,754	7,756	7,758	7,760	7,762	7,764	7,766
331.6	7,768	7,770	7,772	7,774	7,776	7,778	7,780	7,782	7,784	7,786
331.7	7,788	7,790	7,792	7,794	7,796	7,798	7,800	7,802	7,804	7,806
331.8	7,808	7,810	7,812	7,814	7,816	7,818	7,820	7,822	7,824	7,825
331.9	7,827	7,829	7,831	7,833	7,835	7,837	7,839	7,841	7,843	7,845
332	7,847	7,849	7,851	7,853	7,854	7,856	7,858	7,860	7,862	7,864
332.1	7,866	7,868	7,870	7,872	7,874	7,876	7,878	7,880	7,882	7,883
332.2	7,885	7,887	7,889	7,891	7,893	7,894	7,896	7,898	7,900	7,902
332.3	7,904	7,905	7,907	7,909	7,911	7,912	7,914	7,916	7,918	7,920
332.4	7,922	7,923	7,925	7,927	7,929	7,931	7,933	7,935	7,936	7,938
332.5	7,940	7,942	7,944	7,946	7,948	7,950	7,951	7,953	7,955	7,957
332.6	7,959	7,961	7,963	7,965	7,967	7,969	7,971	7,972	7,974	7,976
332.7	7,978	7,980	7,982	7,985	7,987	7,989	7,991	7,993	7,995	7,997
332.8	7,999	8,001	8,003	8,005	8,007	8,009	8,011	8,013	8,015	8,016
332.9	8,018	8,020	8,022	8,024	8,026	8,028	8,030	8,031	8,033	8,035
333	8,037	8,039	8,041	8,043	8,045	8,047	8,049	8,051	8,053	8,054
333.1	8,056	8,058	8,060	8,062	8,064	8,066	8,068	8,070	8,072	8,074
333.2	8,076	8,078	8,079	8,081	8,083	8,085	8,087	8,089	8,091	8,092
333.3	8,094	8,096	8,098	8,100	8,102	8,104	8,105	8,107	8,109	8,111
333.4	8,113	8,115	8,116	8,118	8,120	8,122	8,124	8,126	8,127	8,129
333.5	8,131	8,133	8,135	8,137	8,138	8,140	8,142	8,144	8,146	8,148
333.6	8,149	8,151	8,153	8,155	8,156	8,158	8,160	8,162	8,163	8,165
333.7	8,167	8,169	8,170	8,172	8,174	8,175	8,177	8,179	8,181	8,182
333.8	8,184	8,186	8,188	8,189	8,191	8,193	8,195	8,197	8,198	8,200
333.9	8,202	8,204	8,205	8,207	8,209	8,211	8,212	8,214	8,216	8,217
334	8,219	8,221	8,222	8,224	8,226	8,227	8,229	8,231	8,233	8,234
334.1	8,236	8,238	8,239	8,241	8,243	8,245	8,246	8,248	8,250	8,252
334.2	8,254	8,256	8,257	8,259	8,261	8,263	8,265	8,267	8,269	8,271
334.3	8,273	8,274	8,276	8,278	8,280	8,282	8,284	8,285	8,287	8,289
334.4	8,291	8,293	8,295	8,296	8,298	8,300	8,302	8,304	8,306	8,308
334.5	8,310	8,311	8,313	8,315	8,317	8,319	8,321	8,322	8,324	8,326
334.6	8,328	8,329	8,331	8,333	8,335	8,336	8,338	8,340	8,342	8,343
334.7	8,345	8,347	8,349	8,351	8,352	8,354	8,356	8,358	8,360	8,361
334.8	8,363	8,365	8,367	8,369	8,370	8,372	8,374	8,376	8,378	8,380
334.9	8,381	8,383	8,385	8,387	8,389	8,391	8,392	8,394	8,396	8,398
335	8,399	8,401	8,403	8,405	8,407	8,409	8,411	8,413	8,415	8,417
335.1	8,419	8,421	8,423	8,425	8,427	8,429	8,431	8,433	8,435	8,437
335.2	8,439	8,441	8,442	8,444	8,446	8,448	8,450	8,452	8,454	8,456
335.3	8,458	8,460	8,462	8,464	8,466	8,468	8,470	8,472	8,474	8,476
335.4	8,478	8,480	8,482	8,484	8,485	8,487	8,489	8,491	8,493	8,495
335.5	8,497	8,499	8,501	8,503	8,505	8,507	8,509	8,511	8,513	8,515
335.6	8,517	8,519	8,521	8,523	8,525	8,527	8,529	8,530	8,532	8,534
335.7	8,536	8,538	8,540	8,542	8,544	8,546	8,548	8,550	8,552	8,554
335.8	8,556	8,558	8,560	8,562	8,564	8,566	8,568	8,570	8,572	8,574
335.9	8,575	8,577	8,579	8,581	8,583	8,585	8,587	8,589	8,591	8,593
336	8,595	8,597	8,599	8,601	8,603	8,605	8,607	8,609	8,611	8,613
336.1	8,615	8,617	8,618	8,620	8,622	8,624	8,626	8,628	8,630	8,632
336.2	8,634	8,636	8,638	8,640	8,642	8,644	8,646	8,648	8,650	8,652
336.3	8,654	8,656	8,658	8,660	8,662	8,663	8,665	8,667	8,669	8,671
336.4	8,673	8,675	8,677	8,679	8,681	8,683	8,685	8,687	8,689	8,691
336.5	8,693	8,695	8,697	8,699	8,701	8,703	8,705	8,707	8,708	8,710
336.6	8,712	8,714	8,716	8,718	8,720	8,722	8,724	8,726	8,728	8,730
336.7	8,732	8,734	8,736	8,738	8,740	8,742	8,744	8,746	8,748	8,750
336.8	8,751	8,753	8,755	8,757	8,759	8,761	8,763	8,765	8,767	8,769
336.9	8,771	8,773	8,775	8,777	8,779	8,781	8,783	8,785	8,787	8,789

Appendix J (continued)

Lake Bob Sandlin

RESERVOIR AREA TABLE

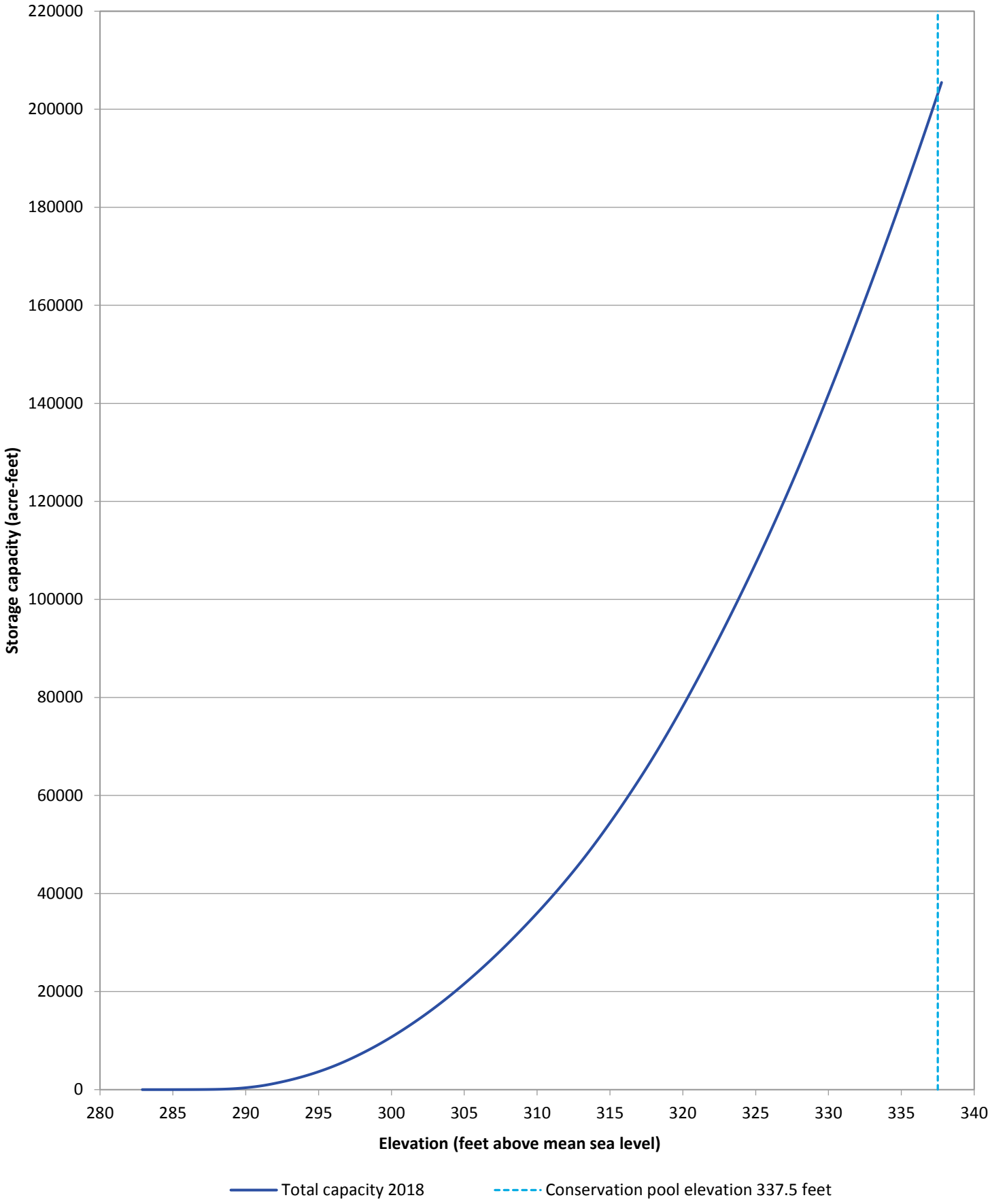
TEXAS WATER DEVELOPMENT BOARD — February 2018 Survey

AREA IN ACRES — Conservation Pool Elevation 337.5 feet NGVD 29

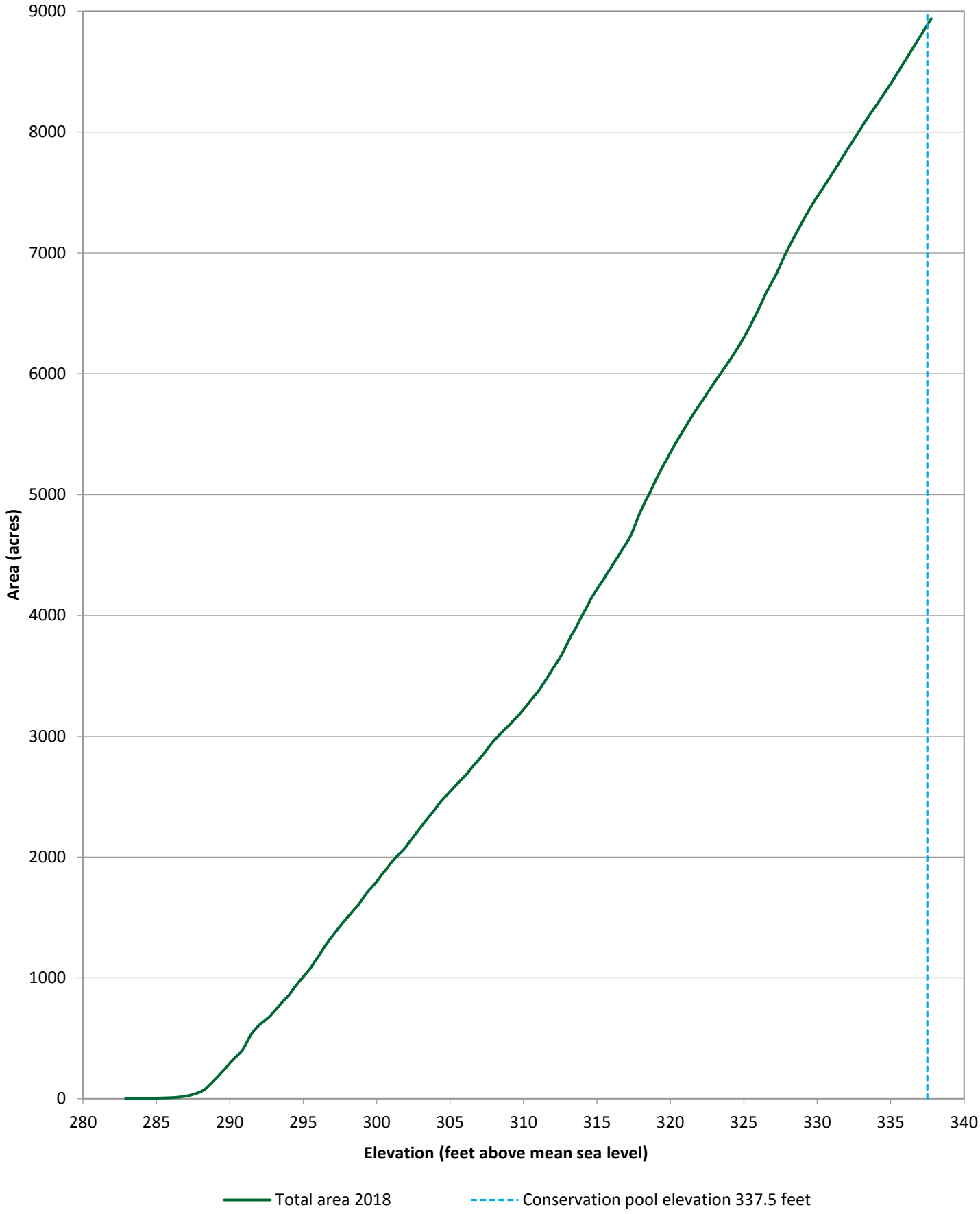
ELEVATION INCREMENT IS ONE HUNDREDTH FOOT

ELEVATION in Feet	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
337	8,791	8,793	8,795	8,796	8,798	8,800	8,802	8,804	8,806	8,808
337.1	8,810	8,812	8,814	8,816	8,818	8,820	8,822	8,824	8,826	8,828
337.2	8,830	8,832	8,834	8,836	8,838	8,840	8,841	8,843	8,845	8,847
337.3	8,849	8,851	8,853	8,855	8,857	8,859	8,861	8,863	8,865	8,867
337.4	8,869	8,871	8,873	8,875	8,877	8,879	8,881	8,883	8,884	8,886
337.5	8,888	8,890	8,892	8,894	8,896	8,898	8,900	8,902	8,904	8,906
337.6	8,908	8,910	8,912	8,914	8,916	8,918	8,920	8,922	8,924	8,926
337.7	8,928	8,929	8,931	8,933	8,935	8,937	8,939			

Note: Areas between elevations 335.0 and 337.76 feet linearly interpolated



Appendix K: Capacity curve



Lake Bob Sandlin
February 2018 Survey
Prepared by: TWDB

Appendix L: Area curve

Appendix M

Lake Bob Sandlin

Sediment range lines

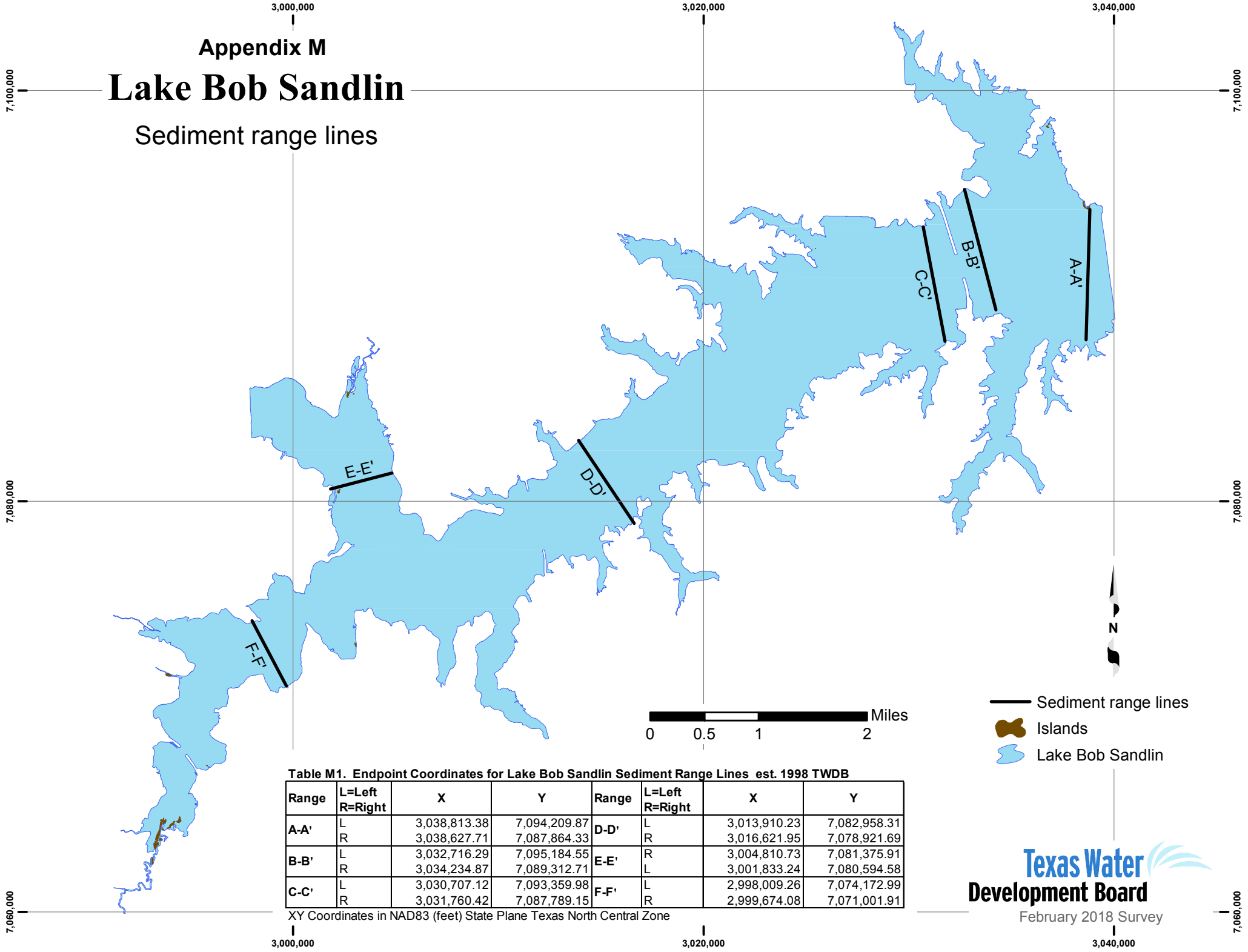


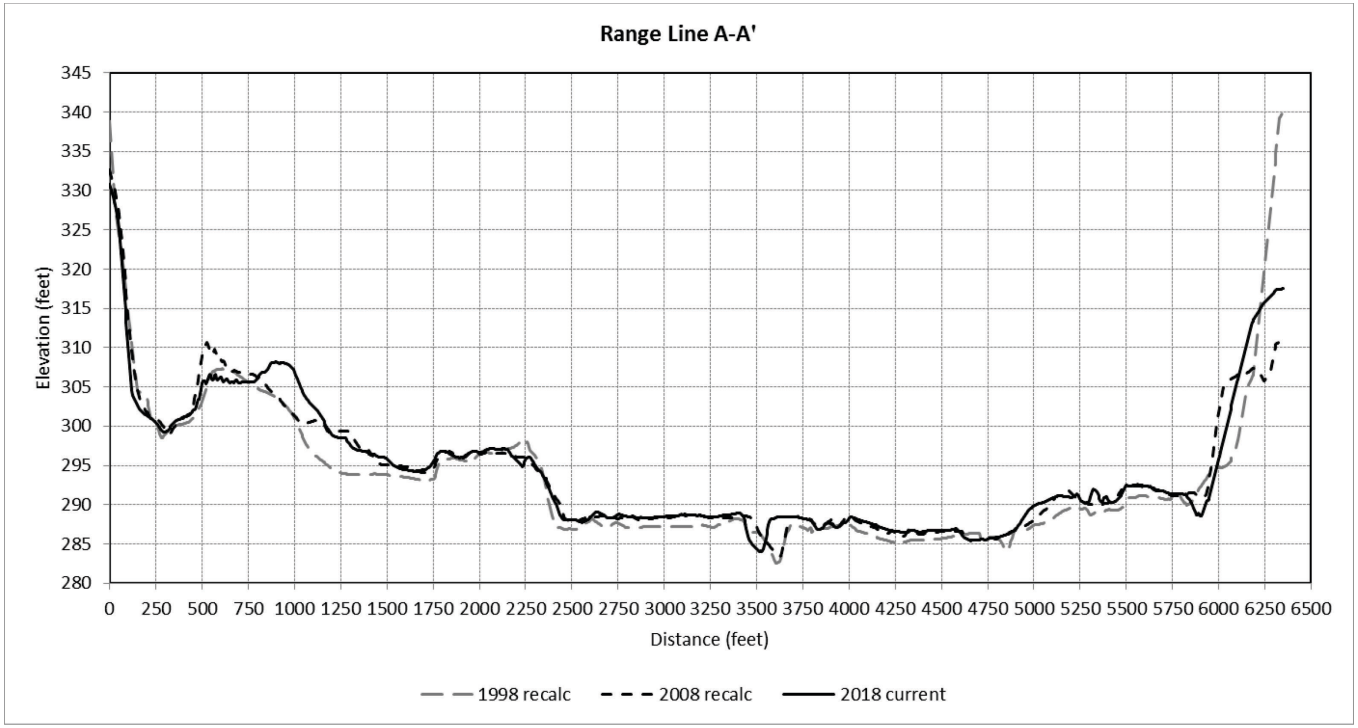
Table M1. Endpoint Coordinates for Lake Bob Sandlin Sediment Range Lines est. 1998 TWDB

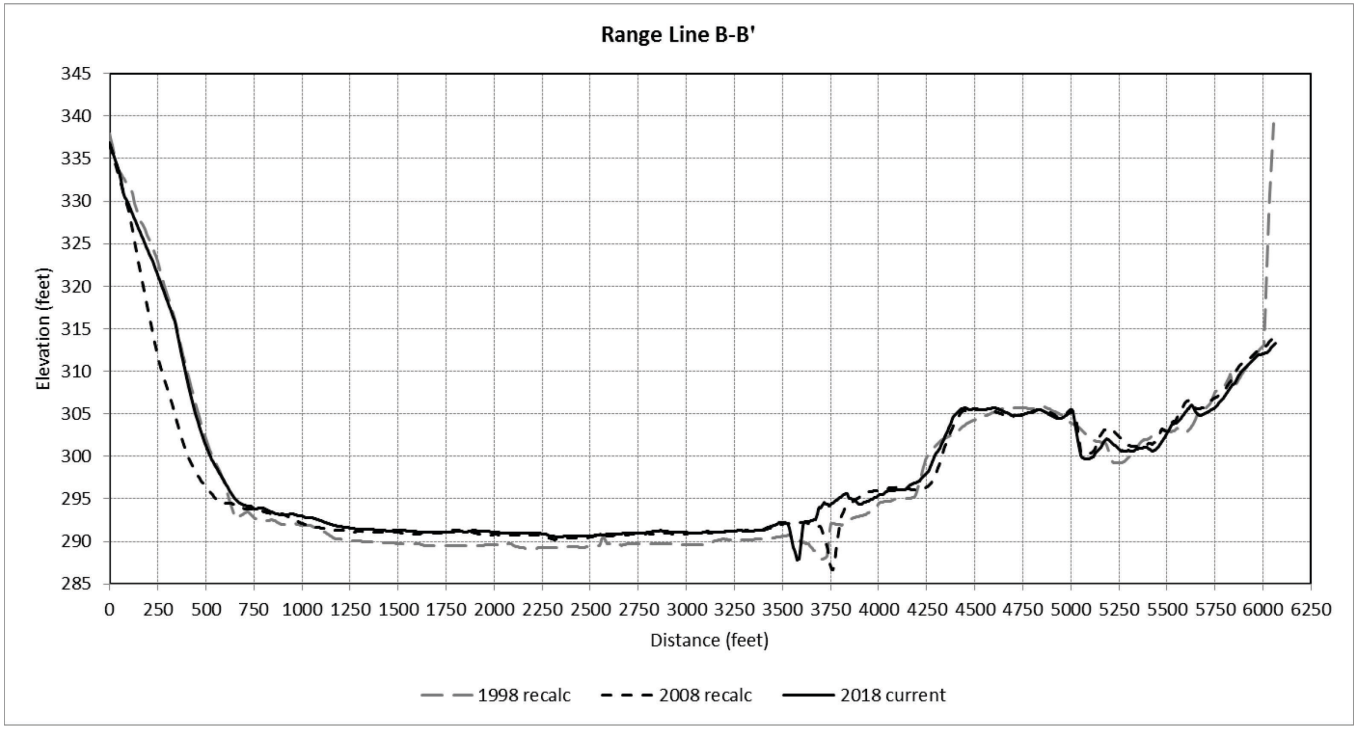
Range	L=Left R=Right	X	Y	Range	L=Left R=Right	X	Y
A-A'	L	3,038,813.38	7,094,209.87	D-D'	L	3,013,910.23	7,082,958.31
	R	3,038,627.71	7,087,864.33		R	3,016,621.95	7,078,921.69
B-B'	L	3,032,716.29	7,095,184.55	E-E'	R	3,004,810.73	7,081,375.91
	R	3,034,234.87	7,089,312.71		L	3,001,833.24	7,080,594.58
C-C'	L	3,030,707.12	7,093,359.98	F-F'	L	2,998,009.26	7,074,172.99
	R	3,031,760.42	7,087,789.15		R	2,999,674.08	7,071,001.91

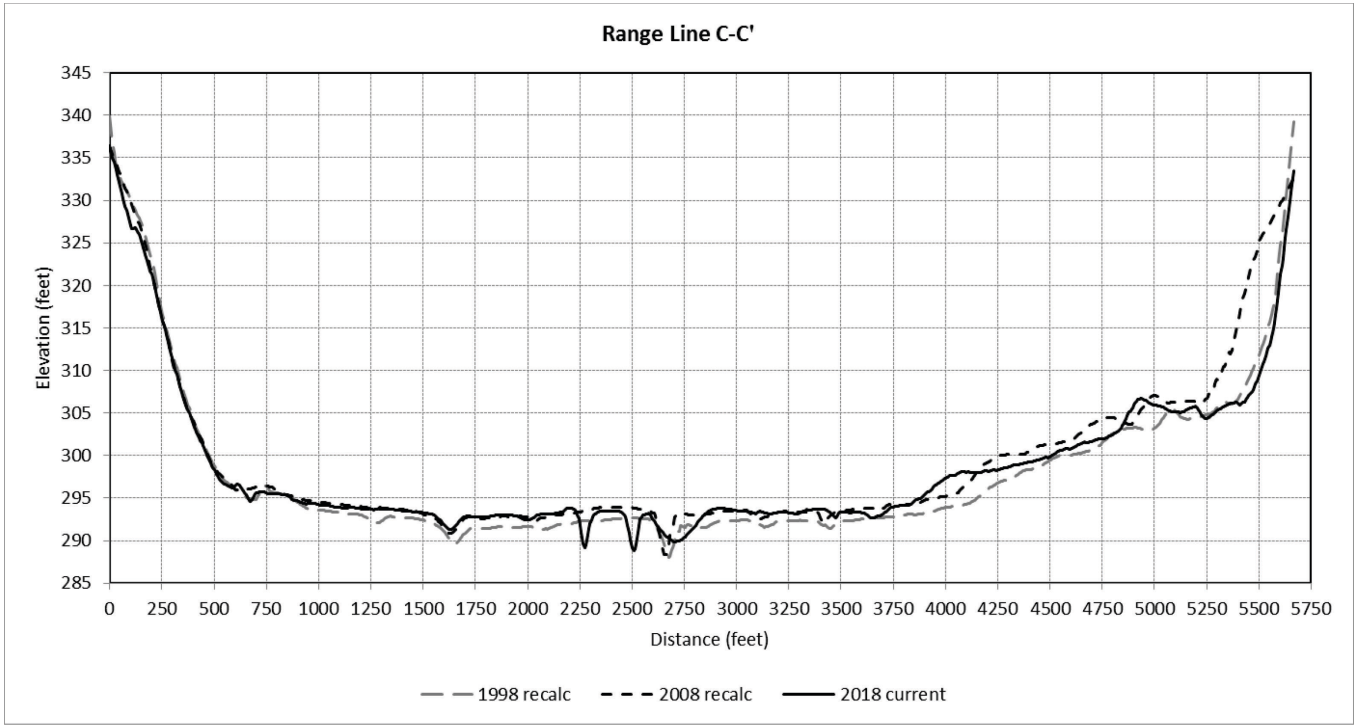
XY Coordinates in NAD83 (feet) State Plane Texas North Central Zone

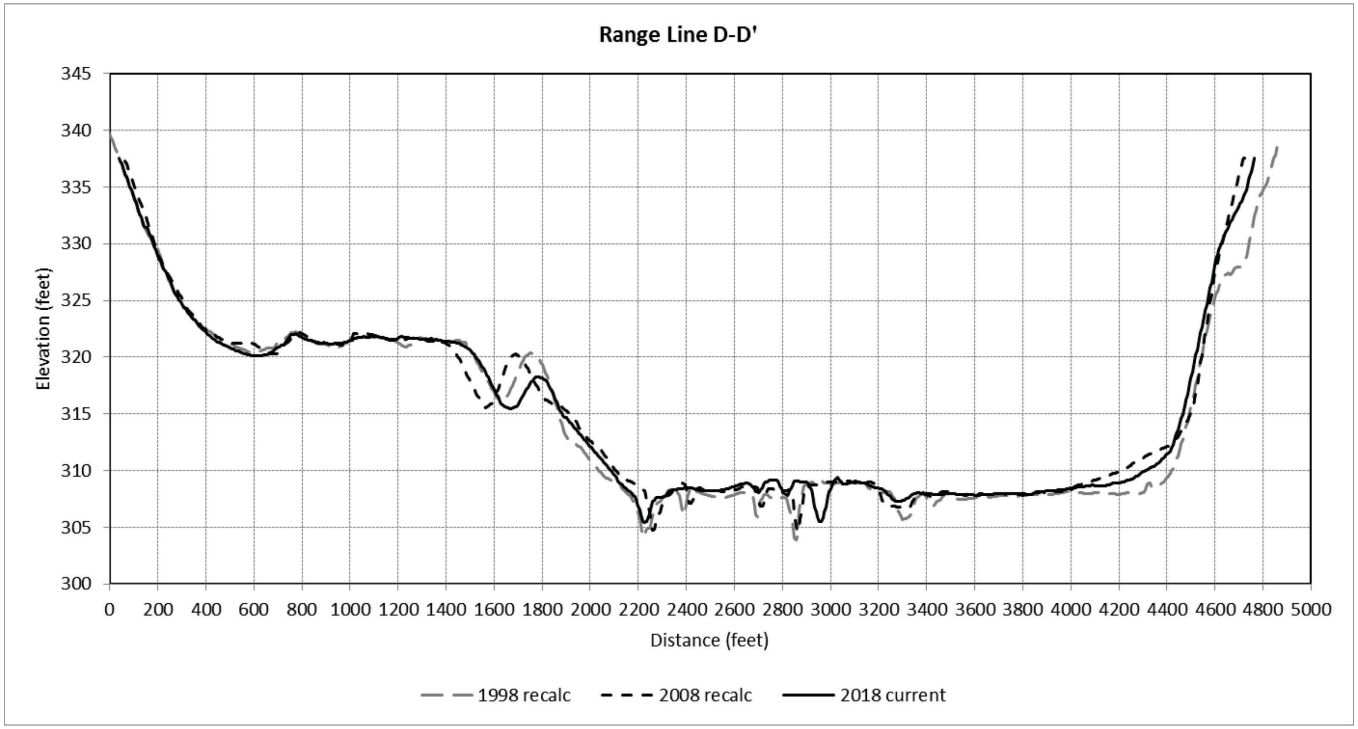
Texas Water Development Board

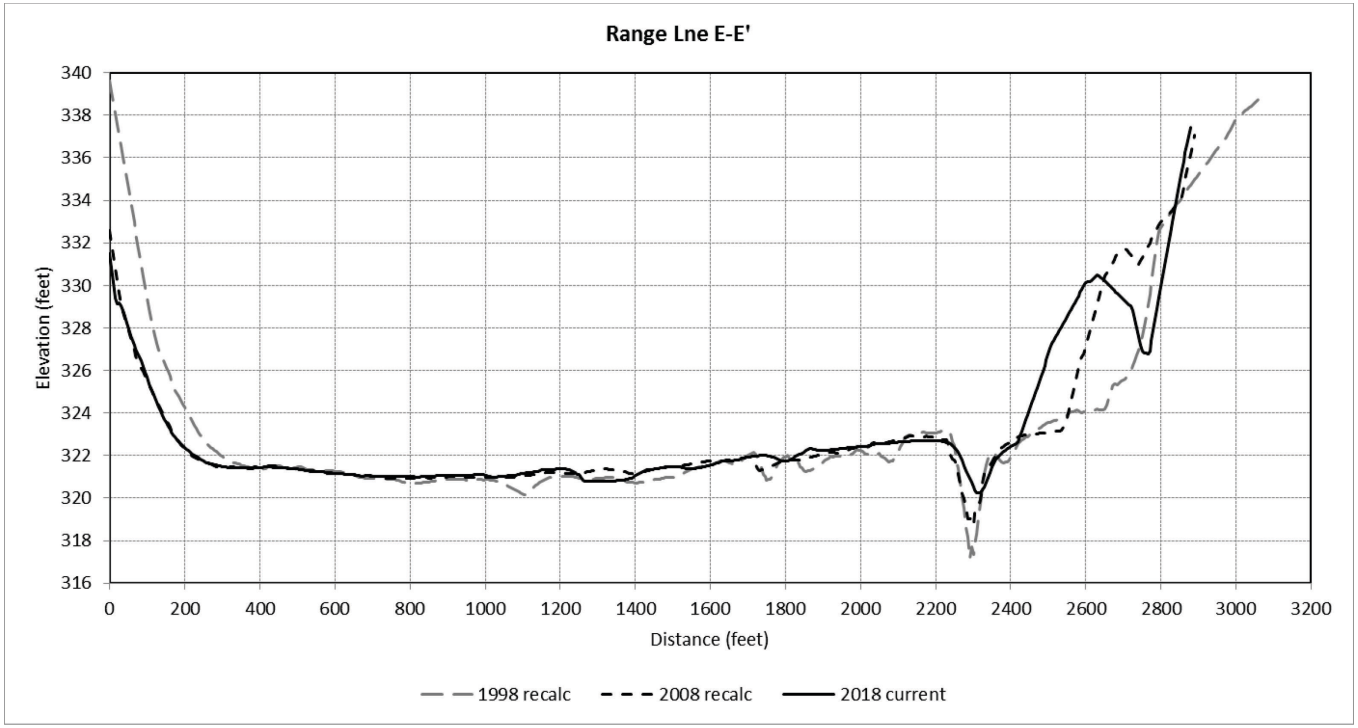
February 2018 Survey


Range Line A-A'
Elevation (feet)
345
340
335
330
325
320
315
310
305
300
295
290
285
280
0 250 500 750 1000 1250 1500 1750 2000 2250 2500 2750 3000 3250 3500 3750 4000 4250 4500 4750 5000 5250 5500 5750 6000 6250 6500
Distance (feet)
1998 recalc
2008 recalc
2018 current


Range Line B-B'
Elevation (feet)
345
340
335
330
325
320
315
310
305
300
295
290
285
0 250 500 750 1000 1250 1500 1750 2000 2250 2500 2750 3000 3250 3500 3750 4000 4250 4500 4750 5000 5250 5500 5750 6000 6250
Distance (feet)
1998 recalc
2008 recalc
2018 current


Range Line C-C'
Elevation (feet)
345
340
335
330
325
320
315
310
305
300
295
290
285
0 250 500 750 1000 1250 1500 1750 2000 2250 2500 2750 3000 3250 3500 3750 4000 4250 4500 4750 5000 5250 5500 5750
Distance (feet)
1998 recalc
2008 recalc
2018 current


Range Line D-D'
Elevation (feet)
345
340
335
330
325
320
315
310
305
300
0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400 3600 3800 4000 4200 4400 4600 4800 5000
Distance (feet)
1998 recalc
2008 recalc
2018 current


Range Lne E-E'
Elevation (feet)
340
338
336
334
332
330
328
326
324
322
320
318
316
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
2800
3000
3200
Distance (feet)
1998 recalc
2008 recalc
2018 current

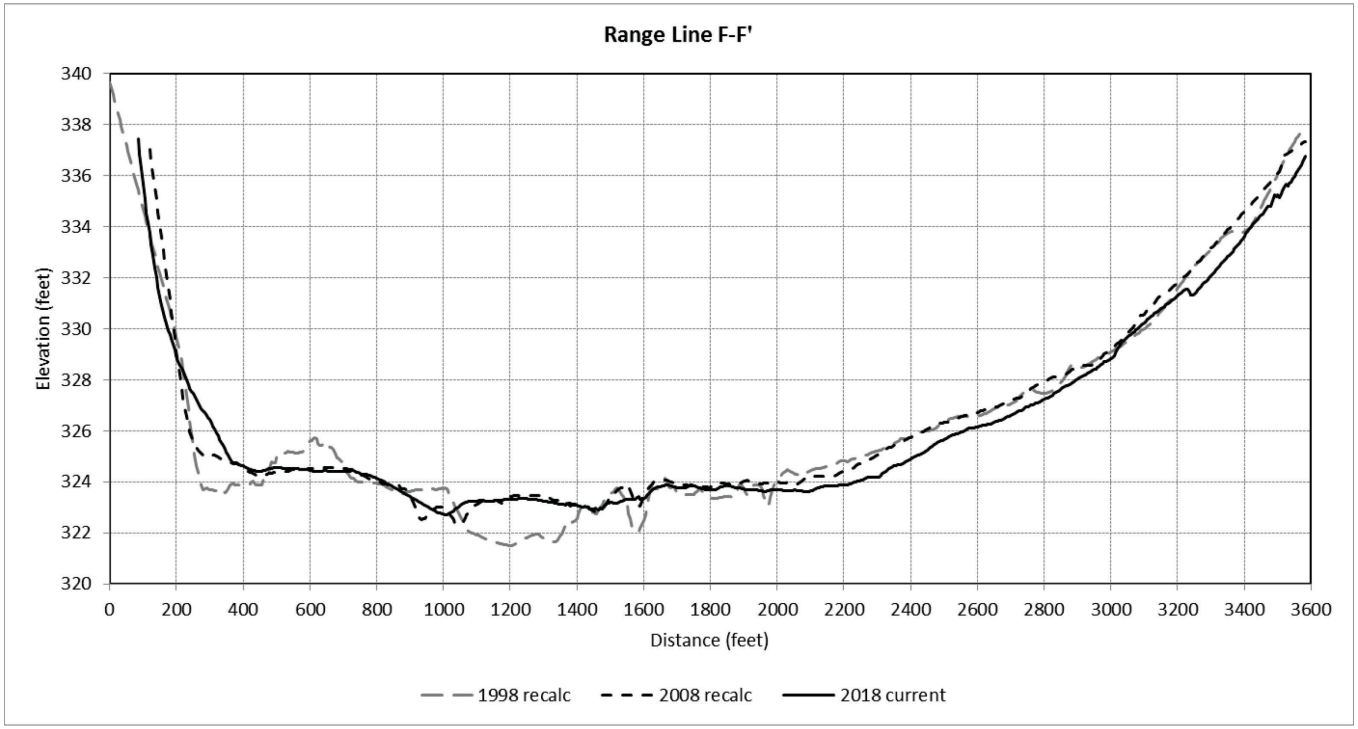

Range Line F-F'
Elevation (feet)
340
338
336
334
332
330
328
326
324
322
320
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
2800
3000
3200
3400
3600
Distance (feet)
1998 recalc
2008 recalc
2018 current

Figure 6

CONTOURS
(feet above mean sea level)

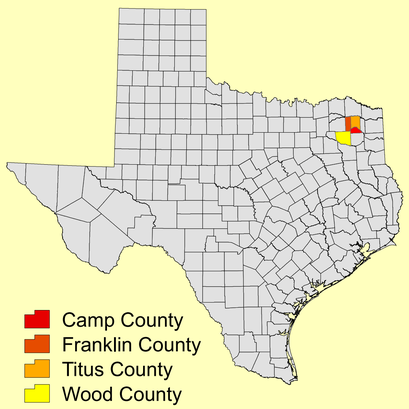
- 337.5
- 335
- 330
- 325
- 320
- 315
- 310
- 305
- 300
- 295
- 290
- 285

Islands

Lake Bob Sandlin
at elevation 337.76 feet

Conservation pool elevation
337.50 feet

Projection: NAD83
State Plane Texas
North Central Zone (feet)



- Camp County
- Franklin County
- Titus County
- Wood County

This map is the product of a survey conducted by the Texas Water Development Board's Hydrographic Survey Program to determine the capacity of Lake Bob Sandlin. The Texas Water Development Board makes no representations nor assumes any liability.

Lake Bob Sandlin

5' - contour map

3,000,000 3,020,000 3,040,000

7,100,000 7,080,000 7,060,000

N

0 0.5 1 2 Miles

Texas Water Development Board

February 2018 Survey