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# Lake Texoma

Lake Texoma is one of the largest <u>reservoirs</u> in the United States, the 12th largest <u>US Army Corps of Engineers</u>' (USACE) lake, and the largest in USACE <u>Tulsa District.<sup>[1]</sup> Lake Texoma is formed by Denison Dam on the Red River in</u> <u>Bryan County</u>, <u>Oklahoma</u>, and <u>Grayson County</u>, <u>Texas</u>, about 726 miles (1,168 km) upstream from the mouth of the river. It is located at the confluence of the Red and <u>Washita Rivers</u>. The project was completed in 1944. The damsite is about 5 miles (8.0 km) northwest of <u>Denison</u>, <u>Texas</u>, and 15 miles (24 km) southwest of <u>Durant</u>, <u>Oklahoma</u>. Lake Texoma is the most developed and most popular lake within the USACE Tulsa District, attracting around 6 million visitors a year.<sup>[1]</sup> Oklahoma has more of the lake within its boundaries than Texas.

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# Hydrology

#### Tributaries and outlet

Lake Texoma's two main sources are the Red River from the west and Washita River from the north. Other notable sources include <u>Big Mineral Creek</u>, Little Mineral Creek, Buncombe Creek, Rock Creek, and Glasses Creek. Lake Texoma drains into the Red River at the Denison Dam.

#### Lake Texoma The Oklahoma shores slope toward the water's edge Location Oklahoma-Texas border. United States Coordinates 33°49'55"N 96°34'16"W Lake type reservoir Primary inflows Red River, Washita River Primary Red River outflows Catchment area 39,719 sq mi $(102,870 \text{ km}^2)$ Basin countries United States Surface area 89,000 acres (36,000 ha) Water volume 2,525,568 acre.ft (3.115242 km<sup>3</sup>) Surface 615 to 619 ft (187 to elevation 189 m) Settlements Denison, Sherman, Gainesville (Texas);,

Kingston, (Oklahoma)

#### Water levels

Normal elevation of the conservation pool varies from 615 to 619 ft (187 to 189 m) <u>National Geodetic Vertical Datum</u> (NGVD) depending on the time of year. The flood control pool extends to elevation 645 ft (197 m) NGVD. The lake has crested the dam's <u>spillway</u> at a height of 640 ft (200 m) five times: once in 1957, again in 1990, 2007, May 24, 2015, and most recently on June 18, 2015.<sup>[2]</sup> (USACE 2003a) The lake's previously highest elevation was recorded on May 6, 1990, at 644.76 feet.<sup>[3]</sup> This record was broken on May 29, 2015, and the lake crested on June 1, 2015, at a new record elevation of 645.72 feet. The top of Denison Dam is *a* 670 feet.

#### Saltwater from the Red River

The Red River that formed Lake Texoma is a saltwater river due to salt deposits left over from a 250 million year old former sea that was in the current Texas-Oklahoma border region. As time passed, that sea evaporated, leaving salt deposits — mostly sodium chloride. Rock and silt eventually buried the deposits, but the salt continues to leech through natural seeps in tributaries above Lake Texoma, sending as much as 3,450 tons of salt per day flowing down the Red River. The problem with the water in the Red River is much of it is too salty and requires costly treatment, if it is usable at all. Due to this phenomenon <u>striped bass</u>, a saltwater fish, thrive in Lake Texoma. Lake Texoma is home to the only self-sustaining population of striped bass in Texas.<sup>[4][5]</sup>



Salt beds in the Red River

### Geography

Lake Texoma is situated on the border between the states of Oklahoma and Texas in the Oklahoma counties of <u>Bryan</u>, <u>Marshall</u>, <u>Johnston</u>, and <u>Love</u>, and the Texas counties of <u>Grayson</u> and <u>Cooke</u>.<sup>[6]</sup> It has a surface area of 93,000 acres (360 km<sup>2</sup>), a conservation water volume of 2,525,568 <u>acre·ft</u> (3.115242 km<sup>3</sup>), and a flood-control volume of 5,194,163 acreft (6.406906 km<sup>3</sup>).<sup>[7]</sup>

#### Cities

Notable cities surrounding the lake in Texas are Denison, Sherman, and Gainesville. In Oklahoma, the most notable city is Durant.

Other towns and cities near the lake in Bryan County, Oklahoma, include <u>Cartwright</u>, <u>Colbert</u>, <u>Calera</u>, Platter, and <u>Mead</u>. In Marshall County, Oklahoma, Madill and Kingston are the nearest cities with many notable communities near the lake including Enos, Little City Cumberland, <u>Kingston</u>, <u>Woodville</u>, <u>McBride</u>, Willis, and the unsubmerged portion of Avlesworth. Most of Avlesworth was submerged

under the water of the lake. Other towns and cities in Txas include Gordonville, Locust, Fink, Pottsboro, and Preston.

#### Islands

Several small islands on Lake Texoma are accessible only by means of water transportation. Some of the island names include, in order from west to east, West Island, Wood Island, Hog Island, Teasure Island, Little Island, and North Island.

#### Parks

Lake Texoma features two state parks and 54 USACE-managed parks. The northern and southern reaches of the lake each terminate within a national wildlife refuge.



Map of Lake Texoma

### History

According to the U.S. Army Corps of Engineers, George Moulton, a businessman from Denison, Texas, first talked publicly about damming the Red River at Baer's Ferry in 1925. He began lobbying the Chambers of Commerce in Denison and Durant. <sup>[a]</sup> Congressman <u>Sam Rayburn</u> became interested in the project in the early 1930s, and helped bring Federal funding and the Corps of Engineers to make Lake Texoma a reality.<sup>[8]</sup>

Denison Dam and Lake Texoma were authorized for construction by the Flood Control Act approved June 28, 1938, (Public Law 75-791) for flood control and generation of <u>hydroelectric</u> power. The dam, <u>spillway</u>, and outlet works were started in August 1939 and completed in February 1944. By 1942, much of the labor on the facilities was provided by German prisoners of war (POWs). These men were members of the<u>Afrika Korps</u>, who had been captured by the U.S. Army in North Africa. They were the first POWs used in labor camps by the U.S. Initially they were housed in camps nea**T**ishomingo and Powell, Oklahoma<sup>[8]</sup>

At that time, Denison Dam was the largest rolled, earthfilled dam in the United States. The project was put into operation for flood control in January 1944. The first hydroelectric turbine was placed in operation in March 1945, while a second unit became operational in September 1949. The town of <u>Woodville</u>, <u>Oklahoma</u>, was submerged by the lake. The site was later exposed by a <u>severe drought in 2011</u>.<sup>[9]</sup> Most of the town of Aylesworth was submerged by the construction of the lake. Lake Texoma is also the only lake in the contiguous United States to have its own independent government known as Lake Texoma Indian Territory. North of <u>Gainesville</u>, <u>Texas</u> Camp Howze was constructed for military training. German prisoners were sent there. Some were used to clearcut the timber below the flood line for Lake **F**exoma. The lake was pristine until flood waters rose ab**v**e the clear cut line in 1957.

The lake attracted worldwide media attention in June 2015 when water was drained following a flood, causing a vortex with 2.5-m-wide hole to form.<sup>[10]</sup>

# Popularity

Lake Texoma's popularity is largely attributed to its sheer size and proximity to the <u>Dallas-Fort Worth Metroplex</u>. The lake is about an hour's drive north from the metropolitan area. The Lake Texoma area, known simply as <u>Texoma</u> or Texomaland, is experiencing rapid economic growth due to heavy tourist use.

# Recreation

Diverse recreational opportunities include two wildlife refuges, two state parks, 54 USACE-managed parks, 12 marinas, 26 resorts, hundreds of campgrounds, and a variety of excellent golf courses. Power boating, <u>sailing</u>, personal watercraft, water skiing, and <u>wind</u> surfing are all popular. The lake has become a major sailing center based on its size, depth, and miles of sailing shoreline.

During the spring break and Fourth of July holidays, many college students home for the holidays gather in an area called "Fobb Bottom" on the Oklahoma side.

Lake Texoma is also home to the Lakefest Regatta,<sup>[11]</sup> widely considered to be the first inland charity regatta in the United States. The event typically attracts up to 100 <u>keelboats</u> and more than 500 <u>sailors</u> each spring. Since its inception, Lakefest<sup>[12]</sup> has raised more than \$2 million in support of various children's charities in North Texas. The current beneficiary is the Make-A-Wish Foundation® of North Texas.<sup>[13]</sup>

Former professional funny car race driver "Flash" Gordon Mineo organized many "<u>poker run</u>" events on Lake Texoma. Gordon and his wife, Ann Mineo, along with three others, died September 2, 2006, in a boating accident on Lake Toma.<sup>[14]</sup>

#### Fishing

Management of the fishery resources at Lake Texoma is the responsibility of the Oklahoma Department of Wildlife Conservation (ODWC) and the Texas Parks and Wildlife Department (TPWD). Lake Texoma provides habitat for at least 70 species of fish, several of which were introduced by the ODWC and TPWD. These agencies maintain a supplemental stocking program to improve the

fishery resource. Those species popular for recreational fishing include largemouth, spotted, white, and striped bass (*Micropterus salmoides*, *M. punctulatus*, *Morone chrysops*, and *M. saxatilis*); white crappie (*Pomoxis annularis*); and <u>channel</u>, <u>blue</u>, and <u>flathead catfish</u> (*Ictalurus punctatus*, *I. furcatus*, and *Pylodictis olivaris*). The striped bass fishery in particular is very popular and is considered one most successful in the nation. In addition, downstream of the dam is a tailwater fishery that supports the species and the three local catfish. <u>American gizzard shad</u>(*Dorosoma cepedianum*), threadfin shad(*D. petenense*), and <u>inland silverside</u> (*Menidia beryllina*) are important forage species. <u>Freshwater drum</u> (*Aplodinotus grunniens*), <u>common carp</u> (*Cyprinus carpio*), gars (*Lepisosteus* spp.), buffaloes (*Ictiobus* spp.), and <u>river carpsucker</u> (*Carpiodes carpio*) also inhabit the lake.

The lake was stocked with striped bass in the late 1960s, and has proven to be an excellent habitat for them. It is one of the seven U.S. inland lakes where the striped bass reproduce naturally, instead of being farmed and released into the waters. The "stripers" feed on large schools of <u>shad</u>, and often reach sizes of 12 to 20 pounds (5.4 to 9.1 kilograms), with a lake record of 35.12 pounds (15.93 kg) caught April 25, 1984. The town of <u>Kingston</u> celebrates the importance of fishing to the local area with the annual Kingston Sandbass Festival each June.

In 2004, a blue catfish was pulled from the lake that weighed 121.5 pounds (55.1 kg), temporarily setting a world weight record for <u>rod-and-reel</u>-caught catfish.<sup>[15]</sup> The fish was moved to a freshwater aquarium in <u>Athens, Texas</u>. More commonly, catfish in Lake Texoma weigh between 5 and 70 pounds (2.3 and 31.8 kilograms).

Historically, Texas and Oklahoma have not had a reciprocal fishing license agreement, which hasqued a problem for anglers. Recent boundary resolutions have given Oklahoma jurisdiction over most of the fishing in Lake Texoma. An Oklahoma fishing license allows fishing most of the lake, up to within 400 yards (370 m) of Denison Dam. To fish the entire lake, a Lake Texoma fishing license was established and made available in 1979.

#### Camping

Many campgrounds, both public and private, exist along the shores of Lake Texoma. Among these are <u>Eisenhower State Park</u> named for President Dwight Eisenhower, who was born in nearby Denison and Camp All Saints owned by the Episcopal Diocese of Dallas

#### **Private development initiatives**

Recently, several large transfers of public land to private developers have been authorized by the federal government.

Water going over emergency spillway for the third time in the dam's history July, 2007

The Water Resources Development Act of 1999 (Public Law 106-53 113 Stat. 359), authorized USACE to sell to the state of Oklahoma about 1,580 acres (6.4 km<sup>2</sup>) of federally owned land on the north shore of Lake Texoma in Marshall County, Oklahoma, under lease at that time to the Oklahoma Tourism and Recreation Department. The land was part of the Lake Texoma State Park, a conglomerate of state-owned and federally owned lands leased to the state, totaling around 1,882 acres (7.62 km<sup>2</sup>). The park was home to numerous state- and concession-operated facilities and activities, including a resort lodge with 106 guest rooms and suites.

Initially, the State of Oklahoma Commissioners of the Land Office purchased only

558 acres (2.26 km<sup>2</sup>) from USACE in March 2007. Soon after, the state reached an agreement with Pointe Vista Development, LLC, for the sale of roughly 750 acres (to include the land purchased from USACE and land already owned by the state) for the development of home sites and an upscale resort. Pointe **W** ta is a partnership between Mark Fischerpresident and chief executive of Chaparral Energy, and <u>Aubrey McClendon</u>, chairman and chief executive of <u>Chesapeake Energy</u>. Also in 2007, the Governor of Oklahoma, <u>Brad Henry</u>, indicated that the state would likely purchase all or most of the remaining land at Texoma State Park under lease from USACE to transfer to Pointe Vista for further development. The new development is proposed to include 18–36 holes of championship golf, a club house and practice facility, aquatic center, outdoor recreation center, <u>nature parks</u>, <u>campgrounds</u>, retail

shops, and an <u>amphitheater</u>. The new development will cost an estimated \$360 million, which will also include housing, as well as a full-service hotel with <u>restaurants</u>, gym, business center, multiple <u>swimming pools</u>, <u>spa</u>, and meeting rooms. The proposed <u>private</u> <u>community</u> will have 250–350 high-end homes, ranging in size from 1,500 to 4,000 square feet (140 to 370<sup>2</sup>m).

The Lake Texoma Lodge, built in 1951, officially closed its doors on December 1, 2006. The lodge was in poor repair, resulting in a steady decline in the facility's use. The lodge has since been demolished.<sup>16</sup>]

Section 3182(j) of the <u>Water Resources Development Act of 2007</u>, authorized USACE to convey approximately 900 acres (3.6 km<sup>2</sup>) of land at Lake Texoma to the city of Denison, Texas. The provision was backed by U.S. Congressman <u>Ralph Hall</u> (R) as an economic development initiative. The sale is to be at fair market value and the city of Denison is responsible for all costs associated with the transaction (costs for completing <u>NEPA</u> compliance documentation, surveys, appraisals, USACE administrative costs, etc.). The city in turn intends to sell the property to George Schuler, a local developer, for the creation of a private residential and recreational development on the conveyed land and adjacent land already owned by Mr. Schuler. The eventual development may result in as many as 10,000 residents locating in the Grandpappy Point area.

The city and Mr. Schuler attempted to lease the same land from the Corps of Engineers in 2004, but abandoned those attempts in favor of legislation mandating the transfer, due to the inability to use the land for the intended purposes under a lease without an update of the Corps Shoreline Management Plan (SMP) for Lake Texoma. The majority of the land is currently zoned as Limited Development, Protected Area(suitable for nature hiking, birdwatching, etc.) and Aesthetic or Scenic areas. The Corps has previously stated that any revision of the SMP will require the completion of a Supplemental Environmental Impact Statement (SEIS) for the entire Lake Texoma project that will consider the cumulative impacts of the extensive developmental thas occurred around the Lake since the original EIS was conducted in the 1970s. Completion of a lake-wde SEIS has been estimated by the Corps to take up to 2 years to complete at a cost of approximately \$2.5 million. Since Section 3182(j) contained no provisions exempting the sale from the requirements of NEPA, it is expected that completion of the SEIS and revision of the SMP will also be required prior to completion of the sale, and that the city of Denison will be required to bear that as a cost associated with the transaction.

# **Proposed park closure in 2018**

In March 2017, the <u>Oklahoma Department of Tourism and Recreation</u> published a list of 16 state parks that may be closed to help offset a reduction in its budget for 2018. Lake Texoma State Park is on this list. This list represents approximately one-half of the parks remaining after the department closed seven parks in 2011.<sup>[17]</sup>

### Notes

a. USACE called Moulton,"... the father of the Denison Dam.[8]

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### **External links**

- Army Corps of Engineers: lake level
- Lake Texoma State Park info, photos and video on TravelOK.com Official travel and tourism website for the State of Oklahoma
- Lake Texoma from the Handbook of Texas Online
- Denison, Texas
- Sherman, Texas
- Lakefest Regatta
- U.S. Geological Survey Geographic Names Information System: Lakeexoma
- Oklahoma Digital Maps: Digital Collections of Oklahoma and Indianerritory

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