

**Big Cypress Creek Watershed**

The 887 square mile Big Cypress Creek Watershed extends upstream from Ferrell’s Bridge Dam, constructed on Big Cypress Creek to impound Lake O’ the Pines, to the westernmost extreme of the Cypress Creek Basin. This watershed encompasses Lake O’ the Pines (Segment 0403) and its immediate tributaries; the reach of Big Cypress Creek upstream to Fort Sherman Dam (Segment 0404); Lake Bob Sandlin (Segment 0408); Lake Cypress Springs (Segment 0405); and their tributaries. Two USGS streamflow gauges are located in this watershed. One on Big Cypress Creek at the US 271 crossing, and a second on Big Cypress Creek at the State Highway 11 crossing near the City of Pittsburg.

This is the most intensively developed watershed in the Cypress Creek Basin. Agricultural land and urban areas are substantially more common in this watershed

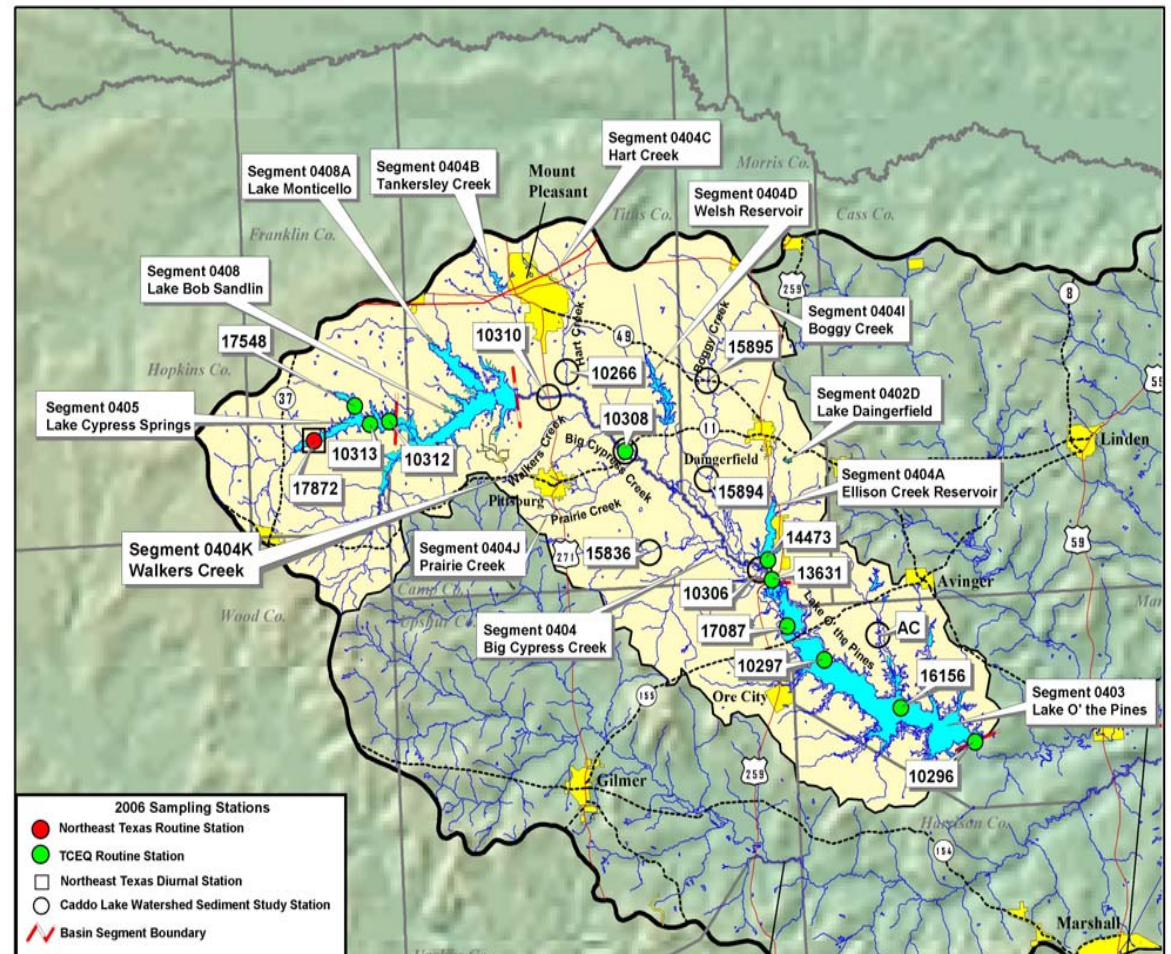
than in the other watersheds. Industrial facilities are found near the Cities of Mount Pleasant, Lone Star, Pittsburg, and Daingerfield. Electric power production facilities are located on Lake Monticello (0408A) and Welsh Reservoir (0404D) in the upper watershed; and Ellison Creek Reservoir (0404A) and Johnson Creek Reservoir in the lower watershed. Shoreline residential development is present on Lake Cypress Springs and substantial low-density retirement and recreational residential development surrounds Lake O’ the Pines. Population growth in this watershed is higher than that of the other watersheds in the Basin.

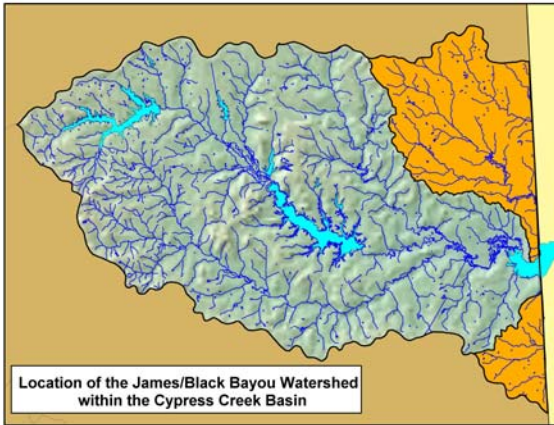
**Segments:** 0403-Lake O’ the Pines, 0404-Big Cypress Creek upstream to Fort Sherman Dam, 0408-Lake Bob Sandlin, and 0405-Lake Cypress Springs.

**Water Bodies:** This watershed contains Lake Cypress Springs, Lake Bob Sandlin, Lake Monticello, Welsh Reservoir, and Tankersley Lake in the upper watershed; and Lake O’ the Pines, Ellison Creek Reservoir, Lake Daingerfield, and Johnson Creek Reservoir in the lower watershed.

**Cities:** Mount Pleasant (pop. 13,935), Pittsburg (pop. 4,347), Daingerfield (pop. 2,517), Lone Star (pop. 1,631), and Ore City (pop. 1,106).

**Counties:** Portions of Hopkins, Franklin, Titus, Morris, Camp, Upshur, Marion, Harrison and Cass Counties.





**James/Black Bayou Watershed**

The drainage basins of James, Black, Paw Paw, and Cross Bayous compose the James/Black Bayou Watershed. Paw Paw and Cross Bayous are located in an area below Caddo Lake where drainage is directed to the State of Louisiana, and do not contribute to the water quality of the Cypress Creek Basin. There are no USGS gage stations on these segments. The James/Black Bayou Watershed as a whole, including the area south of Caddo lake, consists predominately of forested (81%) hills. Landscapes within this watershed typically consist of wide, flat, heavily wooded bottom lands along the major streams, and sandy clay upland hills that are dissected by small intermittent streams.

**Segments:** 0400 (Paw Paw and Cross Bayous), 0406 (Black Bayou), 0407 (James Bayou), and 0407B (Frazier Creek).

**Water Bodies:** No large water bodies are found in this watershed.

**Cities:** Atlanta (pop. 5,700), Linden (pop. 2256), and Waskom (pop. 2068).

**Counties:** Portions of this watershed are in Cass, Marion and Harrison Counties.

**Land Use:** Agricultural lands occupy less than twenty percent of the James/Black Bayou Watershed, but are much more common in the area of Black Bayou. Continuous and well developed riparian woodlands cover a large portion of James Bayou.

**Vegetation:** The James/Black Bayou Watershed is entirely located in the pineywoods vegetational region. Post oak, blackjack oak, and loblolly and shortleaf pine constitute the dominant climax overstory vegetation in uplands, while bottomlands are dominated by water oak, willow oak, sweet gum, black gum, birch, and cypress.

**Soils:** Soils of the James/Black Bayou Watershed floodplain are of the moderately well to poorly drained Kullit-Wrightsville association. These grayish-brown, fine sandy loam soils are considered moderately to slowly permeable. Upland soils of the area are primarily of the Kirvin-Bowie and Fuquay-Bowie-Kirvin association, which are typically slightly to strongly acidic, well-drained sandy, and loamy soils.

**Permitted Discharges:** Black Bayou (Segment 0406) has two permitted dischargers which include the City of Atlanta municipal treated wastewater plant and one industrial discharge site. James' Bayou (Segment 0407) contains three permitted dischargers including: one municipal wastewater treatment plant, a timber company, and a Texas Department of Transportation rest stop. Permitted dischargers within Paw Paw and Cross Bayous (Segment 0400) include one industrial permit and two municipal wastewater treatment facilities.

**Superfund Sites:** There is a state superfund site at the Double R Plating Company above the City of Atlanta near the headwaters of Black Bayou. Another federal superfund site which includes a truck cleaning facility (Stewco, Inc.) is located near the City of Waskom in the Paw Paw Bayou.

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## James/Black Bayou Watershed cont.

### Water Quality Issues:

This watershed displays generally low to moderate levels of conductivity and dissolved solids; a pH which is slightly acidic, low hardness, moderate levels of nitrogen and phosphorus, and moderate to high concentrations of chlorophyll-*a*. James Bayou (Segment 0407) tends to exhibit higher levels of dissolved solids than Black Bayou. Frazier Creek, an unclassified tributary to James Bayou, serves as an ecoregion reference stream in this watershed. It represents a relatively low level of human disturbance. Frazier Creek water is soft, with low levels of dissolved solids, alkalinity and hardness. It tends to exhibit lower nutrient, chlorophyll-*a*, and bacterial loads than either James or Black Bayou. In addition, dissolved oxygen concentrations in Frazier Creek are consistently adequate to support a high aquatic life use.

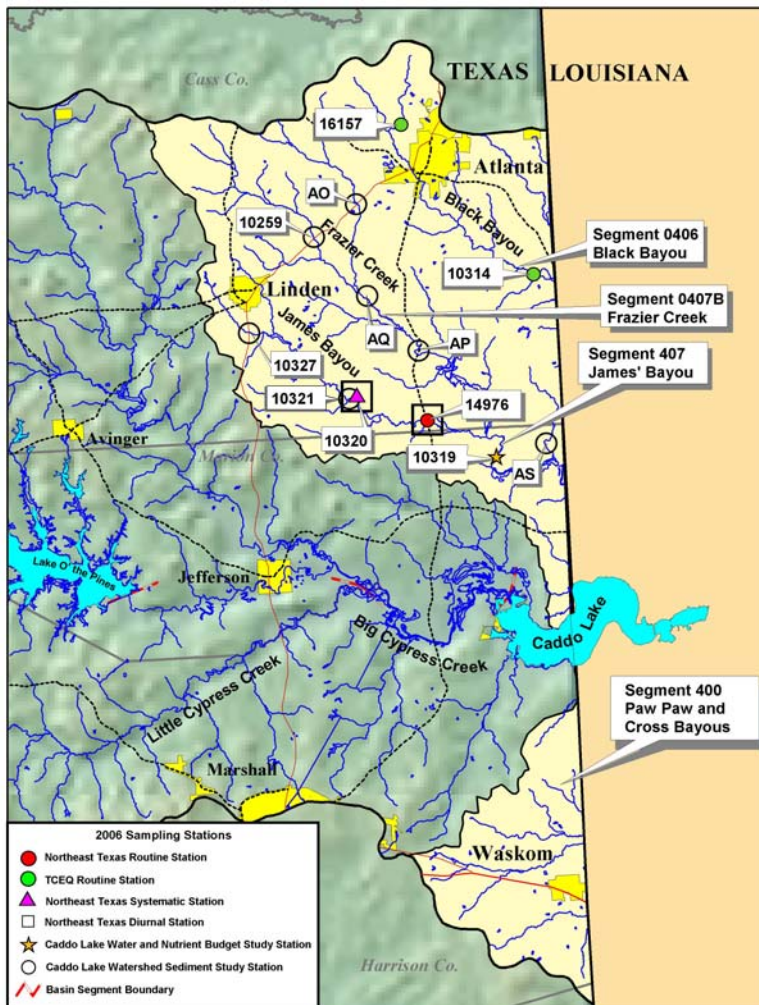
Paw Paw and Cross Bayous (Segment 0400) have no listings for water quality issues within the Cypress Creek Basin. The water flowing from this portion of the watershed drains into Louisiana and has no water quality impact on our basin.

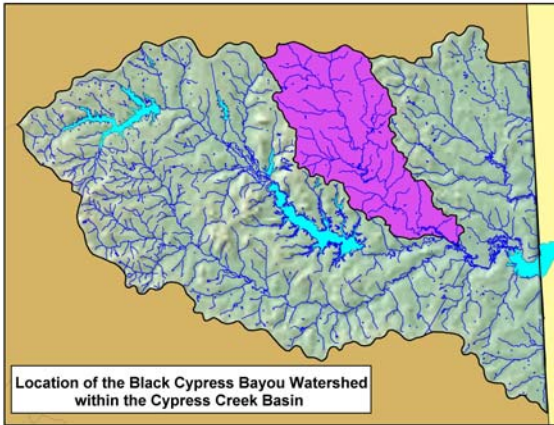
Black Bayou (Segment 0406) is included on the 2004 Texas §303(d) List for depressed dissolved oxygen concentrations along its entire length. The 2004 Texas Water Quality Inventory also lists this segment as partially or not supporting for this same parameter.

James Bayou (Segment 0407) is included on the 2004 Texas §303(d) List for depressed dissolved oxygen concentrations along the entire segment, and dissolved copper in the upper 25 miles of the segment. The 2004 Texas Water Quality Inventory also lists this segment as partially supporting the aquatic life use due to the same parameters.

Frazier Creek (Segment 0407B), an unclassified water body, is listed in the 2004 Texas Water Quality Inventory as supporting its aquatic life and contact recreation uses.

Routine sampling within this watershed during fiscal year 2006 included two stations on Black Bayou and one location on James Bayou. Two stations included diurnal sampling during the last year. Intensive sampling was limited to one station on James Bayou in FY 2006. In August 2006, seven stations of the Caddo Lake Watershed Sediment Study were sampled in this watershed. The focus of this sediment study is to identify watershed reaches where there are large concentrations of phosphorus and organic carbons present in the sediment. Results from this study will be used to determine where the high flow surface water sampling proposed in the Caddo Lake Water and Nutrient Budget Study should focus to identify the source of nutrient flows into Caddo Lake. One station (10309) located on James Bayou near the county line is included in this study.





### **Black Cypress Bayou Watershed**

The Black Cypress Bayou Watershed is the third largest in the Cypress Creek Basin, draining approximately 380 square miles within the upper central portion of the Basin. Black Cypress Bayou flows approximately 55 miles from its headwaters in Morris County to its confluence with Big Cypress Creek below Jefferson in Marion County. Considered a major perennial tributary of Big Cypress Creek, this water body can become intermittent during late summer above its junction with Kelly Creek and has an intermediate aquatic life use designation. Its usual water color is the characteristic orange-brown of the Cypress Creek Basin, however during periods of low flow it can take on a black color which may be the origin of its name. The USGS maintains a flow gage on this water body at the US59 crossing in Jefferson.

The Black Cypress Bayou Watershed may represent one of the least-impacted watersheds within the South Central Plains Ecoregion of Texas. It has a low nutrient input from either point or nonpoint sources although it should be noted that its main sample sites are located upstream of the City of Jefferson wastewater treatment plant.

**Segments:** 0402A (Black Cypress Bayou—unclassified water body)

**Water Bodies:** No large water bodies are found in this watershed. Lake Pruitt, a natural lake, is located between Hwy 155 and FM 1578 five miles northeast of the City of Avinger.

**Cities:** Jefferson (pop. 2024), Avinger (pop. 464), Hughes Springs (pop. 1856), Naples (Pop. 1410), and Marietta (pop. 112).

**Counties:** Portions of Morris, Cass, and Marion Counties.

**Land Use:** Largely forested with woodland and native pines, this watershed exhibits relatively little urban and agricultural development. The dominant land use is forest, with agricultural use and clearing, particularly in the northwestern portion, occupying about a quarter of the watershed.

**Soils:** Acidic sands and sandy loams.

**Permitted Discharges:** Although there are no large industrial facilities located in this watershed there are four municipal wastewater treatment facilities.

### **Water Quality Issues:**

Black Cypress Bayou water is characterized by a nearly neutral pH, and low to moderate conductivity and total dissolved solids. These conditions are common within the forested streams of this region. Average dissolved oxygen concentrations are generally adequate for aquatic life use in Black Cypress Bayou and its tributaries; although there may be negative biological impacts when lower dissolved oxygen conditions are present in the streams.

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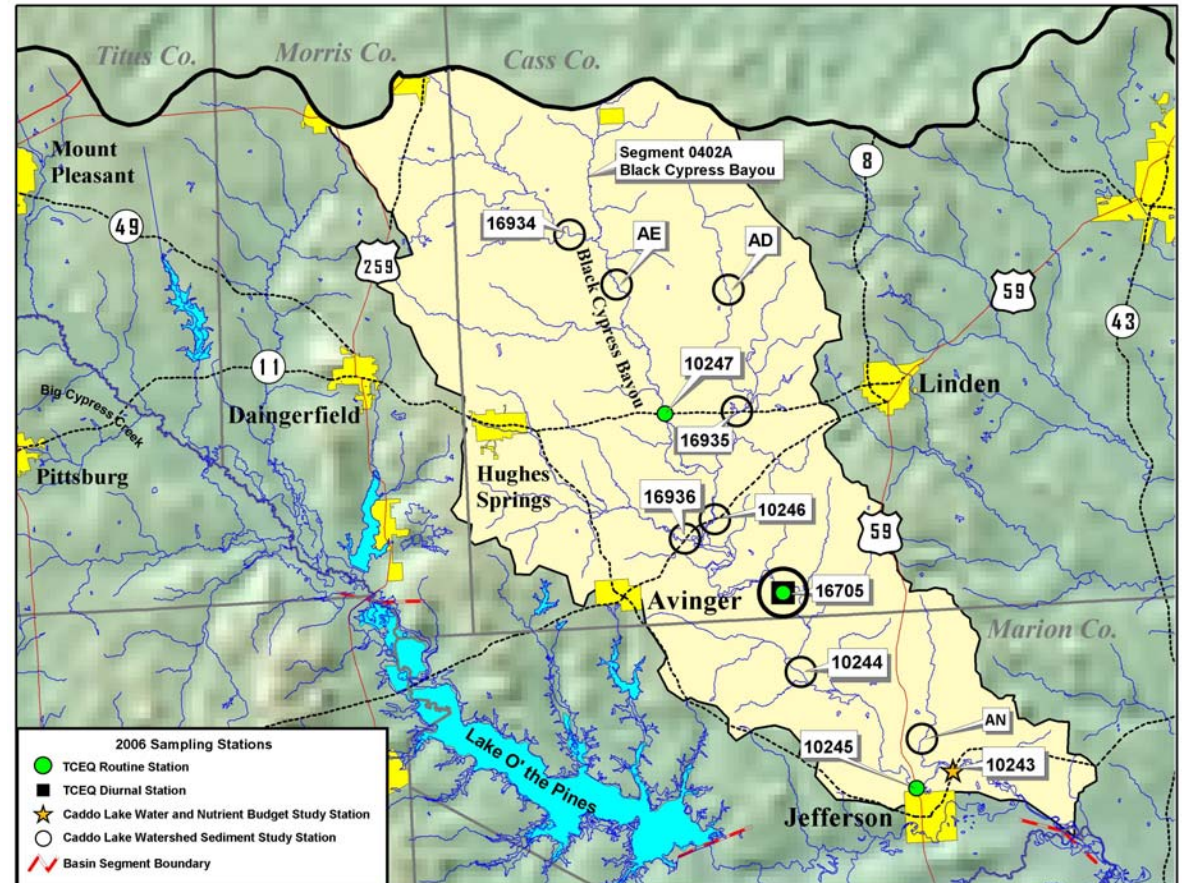
## Black Cypress Bayou Watershed cont.

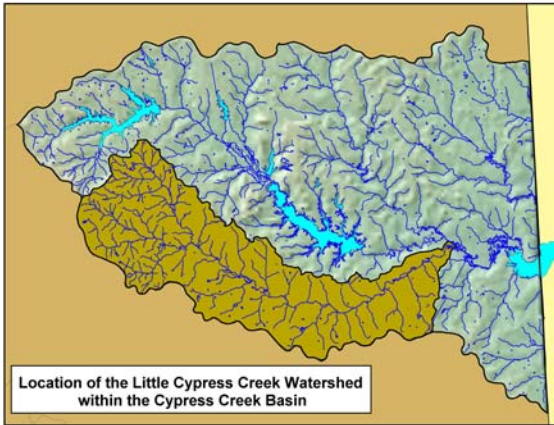
The 2004 Texas §303(d) List indicates that there are concerns for depressed dissolved oxygen in the lower 15 miles of this water body, in Pruitt Lake, in the middle 17 miles near CR 1617, and in the upper 10 miles. Mercury in fish tissue is also listed as a concern for Pruitt Lake.

The 2004 Texas Water Quality Inventory describes the status of Aquatic Life Use in Black Cypress Bayou as partially supporting due to depressed dissolved oxygen concentrations in all but the middle 13-mile section near FM 250. In the lower 15 miles of this water body, and in Pruitt Lake, metals in water are limited data use concerns. In Pruitt Lake there is an additional concern for mercury in fish tissue and metals in sediments. A limited consumption advisory has been issued by for fish taken from this water body by the Texas Department of Health although overall human health criteria are fully supported.

*A Biological, Physical, and Chemical Survey of a Least-Impacted Watershed: Black Cypress Bayou (Creek), Texas, 1998-2005* by Arthur Crowe and Charles Bayer of TCEQ was published in November 2005. This survey showed that although dissolved oxygen concentrations in this stream may fall to low levels during summer low flow conditions, fish assemblages were found to consistently exhibit high or exceptional aquatic life uses (ALU), higher than the present segment designation of intermediate for Black Cypress Bayou. Macroinvertebrate assemblages indicated intermediate ALUs, consistent with the current segment designation, but higher than expected on the basis of summer dissolved oxygen concentrations. These findings are consistent with observations made throughout the Cypress Creek Basin during CRP aquatic life monitoring surveys.

Routine sampling within the Black Cypress Bayou Watershed during fiscal year 2006 was limited to two stations monitored by TCEQ. Diel sampling was completed at one station by TCEQ during the last year. New sampling within fiscal year 2006 included eight stations of the Caddo Lake Watershed Sediment Study, and one station contained in the Caddo Lake Water and Nutrient Budget Study. The goal of the sediment study is to identify watershed reaches where large concentrations of phosphorus and organic carbon are present in the sediment. Results from this study will be used to help decide where to focus the high flow surface water sampling proposed in the Caddo Lake Water and Nutrient Budget Study which has been developed to determine the source of nutrient flows into Caddo Lake.





### **Little Cypress Creek Watershed**

Little Cypress Creek Watershed is located south of the Lake O' the Pines Watershed and forms much of the southern boundary of the Cypress Creek Basin. It encompasses the entire drainage area of Little Cypress Creek (Segment 0409), which joins Big Cypress Creek east of the City of Jefferson. Two USGS streamflow gages are found on this segment, one near its confluence with Big Cypress (Segment 0402) at the U.S. Highway 59 crossing and a second located further upstream near Ore City at the U.S. Highway 259 crossing.

**Segments:** 0409-Little Cypress Creek

**Water Bodies:** Two reservoirs constructed on tributaries include Ferndale Lake on South Lilly Creek, and Lake Gilmer on Kelsey Creek.

**Cities:** Marshall (pop. 23,935), Gilmer (pop. 4799), and Nesbitt (pop. 302).

**Counties:** Portions of Camp, Wood, Upshur, Gregg, Harrison, and Marion Counties.

**Land Use:** The Little Cypress Creek Watershed contains large areas of forest, but is also home to significant agricultural operations in the upper watershed near the City of Pittsburg. Although agricultural land use levels are similar to that of the other watersheds of the Cypress Creek Basin, they are more uniformly distributed across the watershed. Poultry production facilities are concentrated in the Lilly Creek watershed located in the upper reaches to the south and west of the City of Pittsburg.

**Vegetation:** The Little Cypress Creek Watershed lies within the South Central Plains Ecoregion. The watershed is largely forested with native pines.

**Soils:** Upland soils of the watershed are typically gently sloping to steep, well and moderately well drained loamy and gravelly soils of the Bowie-Cuthbert-Kirvin association. Soils of the Little Cypress Creek floodplain and major tributaries are nearly level, somewhat poorly and moderately drained, loamy soils of the Mantachie-Iuka and Iuka-Socagee-Sardis soil associations.

**Permitted Discharges:** There are nine permitted dischargers in this watershed including five domestic and three industrial wastewater dischargers, and one permitted power plant. The City of Gilmer operates the largest permitted wastewater discharge in this watershed. Two permitted hazardous waste sites are located near Marshall, Monarch Tile Manufacturing Inc. and Witco Chemical.

**Superfund Sites:** There is a state superfund site at Marshall Wood Preserving.

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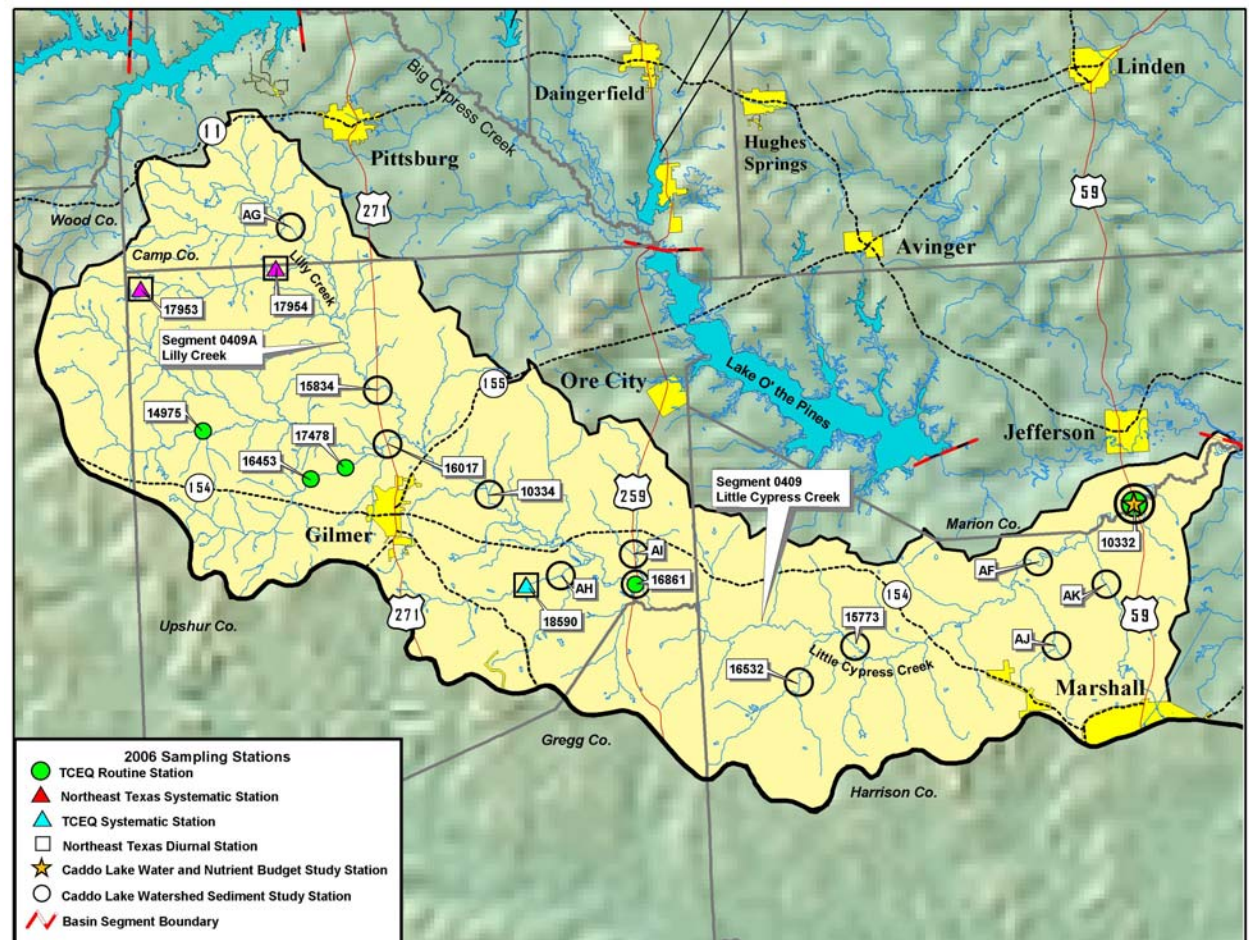
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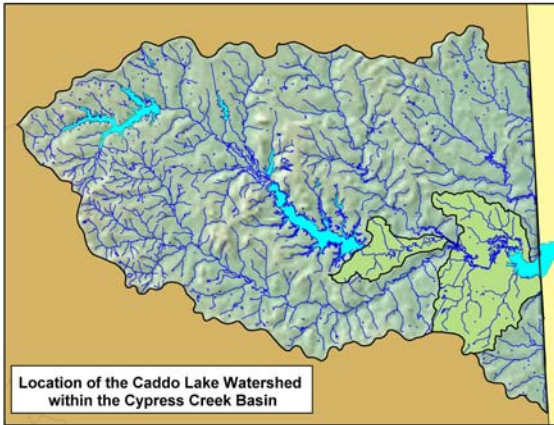
**Water Quality Issues:**

Little Cypress Creek (Segment 0409) tends to exhibit long periods of low flow interrupted by rainfall-runoff events that result in flooding of its broad, heavily wooded floodplain.

Segment 0409 was placed on the 2004 Texas §303(d) List for dissolved oxygen concentrations in the lower and middle reaches where dissolved oxygen levels were below those established to protect a high aquatic life use. It was also listed on the 2004 Texas Water Quality Inventory as partially supporting its aquatic life use due to depressed dissolved oxygen. A major tributary, Lilly Creek, (Segment 0409A) is included on the 2004 303(d) list for nutrient enrichment concerns.

South Lilly Creek has been monitored at two locations in Upshur County since August 2003, to address concerns regarding nutrient and organic loading. These concerns were initiated by a separate sampling project that was conducted in FY2003 to study possible impacts of a large egg producing facility near this creek. Sampling in FY2006 was the last year of a three-year monitoring program designed to monitor the nutrient and organic levels of the creek.





### **Caddo Lake Watershed**

The 330 square mile Caddo Lake Watershed includes Caddo Lake (Segment 0401) and the segment of Big Cypress Creek below Lake O' the Pines dam (Segment 0402). This watershed consists mainly of forested hills with limited urban development. Thought to have been formed behind a logjam in the Red River, Caddo Lake was one of the largest natural lakes in the South before it was dammed in 1914. The ecosystem of Caddo Lake is more diverse than that of the reservoirs of the other watersheds due in part to the wide, shallow and highly productive nature of the lake.

**Segments:** 401-Caddo Lake, 0402-Big Cypress Creek below Lake O' the Pines dam.

**Water Bodies:** Caddo Lake

**Cities:** Jefferson (pop. 2,024), Karnack (pop. 770), and Uncertain (pop. 150).

**Counties:** Marion and Harrison Counties.

**Land Use:** The majority of land use within the Caddo Lake Watershed consists of forest, wetland, and water. In addition it contains a small amount of agricultural land use, and substantial retirement and recreational development.

**Vegetation:** The Caddo Lake Watershed consists predominately of forested hills in the South Central Plains Ecoregion. Vegetation of the Caddo Lake Watershed bottomland includes native pines, hickory, and cypress trees.

**Soils:** Soils of the nearly level to gently undulating Caddo Lake Watershed are typically moderately well and somewhat poorly drained, moderately and very slowly permeable loamy soils of the Scottsville and Kullit-Summerfield associations.

**Permitted Discharges:** There is only one permitted discharger located in the Caddo Lake Watershed. However, there is a permitted discharger (City of Jefferson) on Black Cypress Bayou just upstream of Segment 0402 of Big Cypress Creek, which impacts this watershed.

**Superfund Sites:** A federal superfund site is located at the Longhorn Army Ammunition Plant adjacent to the City of Karnack. In addition, a permitted industrial hazardous waste site is present on the southwestern shore of Caddo Lake.

### **Water Quality Issues:**

Caddo Lake is impounded by Caddo Dam in Caddo Parish, Louisiana, and extends into Harrison and Marion Counties; Texas. The largest tributary to Caddo Lake is Big Cypress Creek through which Caddo Lake receives runoff from Little Cypress Creek Watershed, Black Cypress Bayou Watershed, and Big Cypress Creek Watershed.

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Caddo Lake Watershed cont.

**Segment 0401: Caddo Lake**

Prior to the construction of the dam, Caddo Lake was one of the largest natural lakes in the southern United States. The upper half of Caddo Lake is wide, shallow, and swamp-like which has helped to produce an ecosystem more diverse than that of other reservoirs in the Cypress Creek Basin.

The 2004 Texas §303(d) List indicates that mercury in fish tissue is a concern in this segment, which is listed as partially supporting fish consumption use. In addition, the areas of Clinton Lake, Hells Half Acre, and the Harrison Bayou arm within Caddo Lake have been recognized as having low dissolved oxygen. The Goose Prairie arm of the Lake is listed for low pH concerns.

In the 2004 Texas Water Quality Inventory, Segment 0401 has been identified as not supporting the aquatic life use as a result of depressed dissolved oxygen concentrations. In addition, Caddo Lake has some areas that are of concern due to low pH or mercury in fish tissue. With the placement of permanent monitoring stations in 2003 at Caddo Lake by TCEQ, meteorological and water quality parameters have been recorded in the transitional and open water areas of Caddo Lake. The Caddo Lake Institute has operated and maintained these two sites Since October 2005.

The Caddo Lake Watershed Protection Plan, initiated in 2006, is a new program designed to protect the water quality and aquatic life of Caddo Lake. This effort is being lead by basin stakeholders, with the Northeast Texas Municipal Water District selected as watershed coordinator. Volunteer activity is a key element in this plan, although federal, state and local organizations are actively participating in the preparation and implementation. The current issues identified include pollution affecting water quality, drought and water withdrawals; threats to habitats; floodplain management; and managing of aquatic vegetation. Two special studies, the Caddo Lake Water and Nutrient Budget Study, and the Caddo Lake Watershed Sediment Study, have been designed, approved, and implemented to help begin the development of this plan.

Giant salvinia, an extremely invasive floating aquatic fern from southeastern Brazil, was found in Caddo Lake during May 2006. An initial survey revealed a well established population in Jeem’s Bayou on the Louisiana portion of the Lake of more than 150 acres. The presence of this species in one of the most sensitive regions of the state prompted an immediate, aggressive response from both Texas and Louisiana officials to contain the infestation and prevent further expansion. Chemical treatment of the infestation of Caddo Lake began within days of its discovery. An estimated 190 acres of giant salvinia were treated by vegetation control crews from the Texas Parks and Wildlife Department and Louisiana Department of Wildlife and Fisheries. Repeated treatments and surveys were scheduled throughout the summer to eliminate any remaining colonies.



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Giant salvinia (*Salvinia molesta*), whole plant (left—approximately 6” total length), and close-up of leaf surface showing characteristic “egg beater”-shaped hairs.

Please report any sightings of this plant to either the Texas Parks and Wildlife Department or Northeast Texas Municipal Water District.

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Caddo Lake Watershed cont.

**Segment 0402: Big Cypress Creek below the Lake O' the Pines**

The 2004 Texas §303(d) List indicates that dissolved lead concentrations exceeded the chronic criterion in the upper seven miles of Segment 0402. In addition it lists concerns for depressed dissolved oxygen, mercury in fish tissue, and low pH within this segment.

In the 2004 Texas Water Quality Inventory, Segment 0402 contains areas that are of concern due to low pH, depressed dissolved oxygen and mercury in fish tissue. This portion of Big Cypress Creek is generally wide and deep and supports a heavy recreational use. The Texas Parks and Wildlife Department has placed this segment within the target area for the recovery of the state threatened paddlefish, and identified an area of over five thousand acres east of the City of Jefferson as containing priority bottomland hardwood forest dominated by cypress-tupelo swamps.

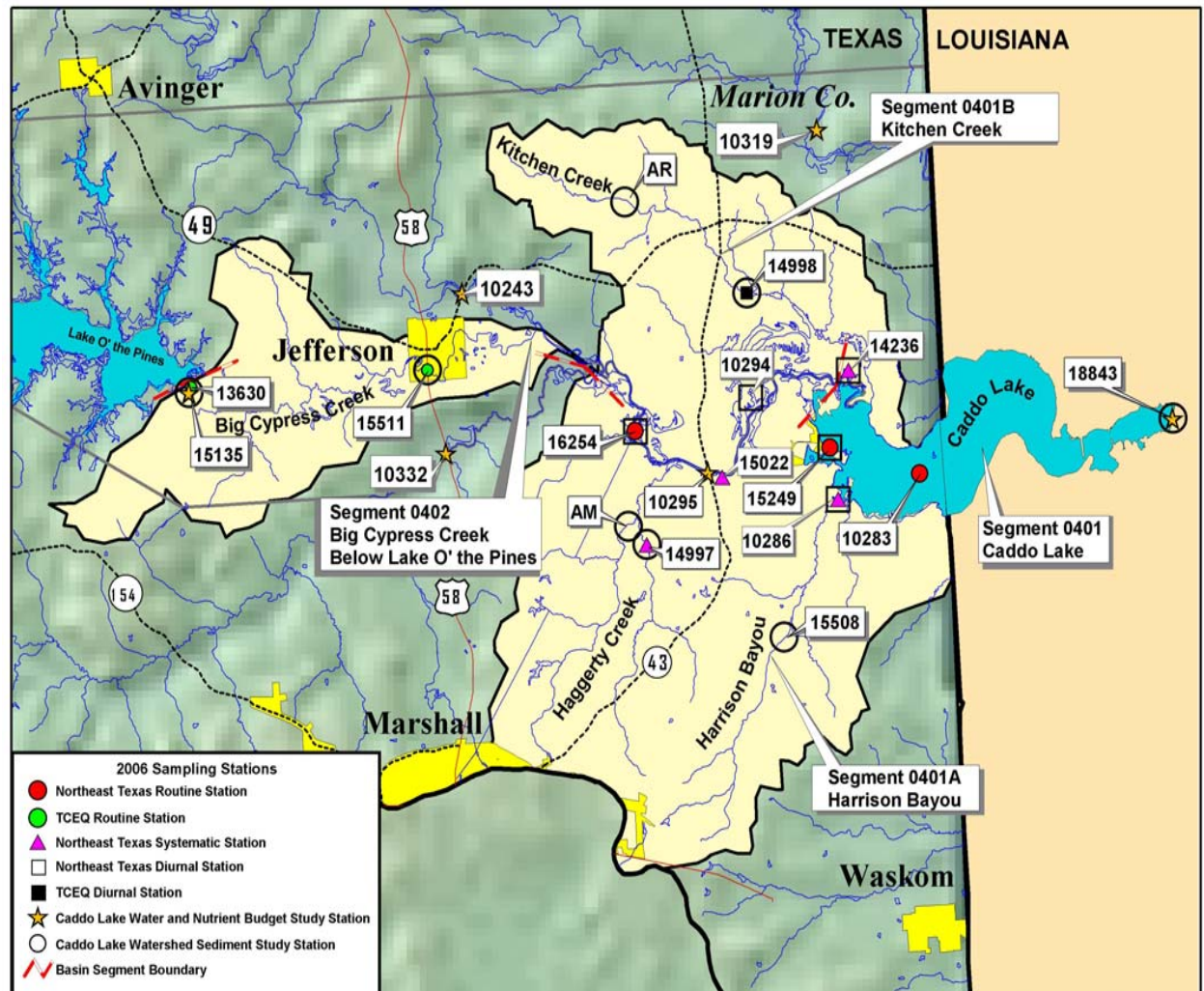
Four routine stations were sampled within the Caddo Lake Watershed in fiscal year 2006, as were five diurnal stations. Four systematic stations were included in the monitoring program for Segment 0401. Eight stations of the Caddo Lake Watershed Sediment Study and three stations included in the Caddo Lake Water and Nutrient Budget Study were also sampled.

**Special Studies:**

**Caddo Lake Water and Nutrient Budget Study**

The Caddo Lake Water and Nutrient Budget Special Study has been developed to determine the quantities, seasonal patterns, and source watersheds of nutrients including nitrogen and phosphorus presently being supplied to Caddo Lake over an annual cycle. This information will be used to support the development of

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### *Caddo Lake Watershed cont.*

a nutrient budget to assess the status of Caddo Lake in comparison with similar systems within the Cypress Creek Basin and surrounding areas. The basic data required for this special study includes stream flow measurements on the tributary streams of Caddo Lake, and the lake outlet at Caddo Lake Dam in Louisiana. Three of the existing drainage sources have working USGS gages for which discharge data is available; however, there is no recording gage on James Bayou, and Caddo Dam reports only daily water surface elevations. Although low to normal flow is well documented, there is a need to examine nutrient loading during the rising and receding phases of high flow events. The USGS recently installed an additional stream gage in Big Cypress Creek below the confluence of the three existing gauged streams to help in determining their relative contributions of water, nutrients and other materials to Caddo Lake. Twenty-eight sample sets will be collected per station over an annual cycle based on a schedule that is biased to more frequent sampling during the winter-spring wet period and the capture of multiple samples over the course of high flow events.

### *Caddo Lake Watershed Sediment Study*

The watershed of Caddo Lake consists of four major subbasins that provide a majority of surface inflow; Big Cypress Creek, Black Cypress Bayou, James Bayou and Little Cypress Creek. With the exception of James Bayou, which enters Caddo Lake on its northern shore in Louisiana, all of these watersheds have a USGS stream flow gauging station located upstream of Caddo Lake near the City of Jefferson. The primary focus of this study is to address the impacts of increased nutrient loading which spurs accelerated plant growth within the lake. Phosphorus is considered to be an important limiting nutrient factor for plant growth and is therefore important to monitor and control. Transportation of phosphorus in rivers is facilitated by its tendency to collect on sediment which is moved by water flow. Organic carbon is a second important water quality nutrient concern due to the major role it plays in the chemical processes and the transport of trace metals. Organic carbon is normally generated in streambed sediment from decaying vegetation, algae, and bacteria, but can indicate sources of sewage and manure. One method used to determine source areas of phosphorus and organic carbon is the collection and analysis of riverbed sediment samples. The identification of subbasin reaches where large concentrations of phosphorus and organic carbon are found within sediment will help researchers determine where to focus the high flow surface water sampling used to determine subbasin nutrient loads. This study will provide information which will enhance the Nutrient Budget Study on Caddo Lake. In August 2006, the United States Geological Survey collected bed sediment samples from 51 pre-selected sites which were then analyzed. The data from these sample sets was submitted to TCEQ in September 2006.



*Water Lilies on  
Caddo Lake*

## Watershed Recommendations

The recommendations for the Cypress Creek Basin are based on the findings of the Monitoring Priorities for Concerns and Non Supporting Parameters based on the *Draft 2004 Texas Water Quality Inventory* by stream segment and assessment unit.

### **Basin Concerns:**

#### **Lake O' the Pines TMDL**

In 1998, water quality testing showed that dissolved oxygen concentrations in the Lake O' the Pines were not optimal for the support of fish and other aquatic life, and it was subsequently listed on the *2004 Texas §303(d) List*. As a result, the TCEQ in cooperation with NETMWD initiated the *Lake O' the Pines Watershed TMDL* (Total Maximum Daily Load) *Project*. This study concluded that phosphorus was the primary factor responsible for the low dissolved oxygen values and that a reduction in phosphorus loadings in the watershed was necessary. The final project report was approved by EPA on June 7, 2006. The next step in this process will be initiation of work on the TMDL Implementation Plan which is now in progress.

#### **Caddo Lake Watershed Protection Plan**

The development of a Watershed Protection Plan (WPP) as an alternative to the TMDL process for solving water quality issues in the Caddo Lake Watershed has made progress. The WPP is a strategic plan for management, monitoring, and protection of Caddo Lake designed to help minimize pollutants in this watershed. The key to attaining this goal will be the identification of contamination sources and the creation of workable voluntary management practices. Stakeholder involvement is an integral part of this process which will take several years to develop.

#### **Fish Consumption Bans and Advisories**

The Texas Department of State Health Services (DSHS) monitors fish in the state for the presence of contaminants and alerts the public through bans or advisories when consumption may pose a threat to human health. These warnings are based on the collection and analysis of fish samples for long lasting contaminants found in fish tissue, such as PCBs, pesticides, and/or heavy metals (e.g., mercury). Fish consumption advisories and bans are issued where tissue testing indicates a potential threat to public health. The DSHS has issued a consumption ban on all fish species taken from Ellison Creek Reservoir due to elevated levels of PCBs in December 2005. The *2004 Texas Water Quality Inventory* contains concerns for PCBs in fish tissue in Ellison Creek Reservoir, and for mercury in fish tissue in Caddo Lake and Black Cypress Bayou.

#### **Timber Operation Impacts on Basin Water Quality**

Clear cutting activities in the Basin are still a concern. Logging activities can have both short-term and long-term impacts on water quality. Short-term impacts can include increased levels in total suspended solids, turbidity, total nitrogen, and total phosphorous. Long-term impacts can include stream phytoplankton blooms caused by relatively high nutrient levels combined with increased solar input as a result of a reduction in tree cover. Soil disruption and/or changes in land use can cause an increase in stream bacteria counts as water flows over an area following heavy rainfall events, carrying forest or animal waste.

### **Public Outreach and Webpage**

The main focus of the Cypress Creek Basin public outreach effort is the encouragement of public involvement concerning the Clean Rivers Program (CRP) and other basin activities. This involvement is important to the development of support for the program as a means of gathering recommendations and concerns from the public. The public can get involved through either the steering committee meetings or volunteer activities.

#### **Website:**

The primary purpose of our website [www.netmwd.com](http://www.netmwd.com) is to provide a focus for the Cypress Creek Basin and its water quality issues. It makes available to the citizens of our basin and other interested parties a useful tool which focuses on the basin. The Texas Commission on Environmental Quality (TCEQ) which manages the statewide Clean Rivers Program has as its partner the Northeast Texas Municipal Water District (NETMWD) in the Cypress Creek Basin. Within the guidelines of this program, the NETMWD has accepted a portion of the responsibility for monitoring the water quality and ecosystem health in the rivers and lakes of the basin. As the primary source of information used by those responsible for managing water quality information this monitoring is critical to understanding our waterways.

The NETMWD main webpage contains links to information concerning the CRP Program and specifics concerning activities within the basin. Some of the links available include:

- Basin Monitoring Schedule
- Monitoring Stations Maps
- Reports
- Steering Committee Members, Schedules, and Meeting Minutes
- Program Partners
- Contact Information
- Quality Assurance Project Plan (QAPP)
- Work Plan and Special Study Information

Our goal is to provide a readily available source of information about local environmental issues to the public, which we hope will encourage citizens of our basin to get involved. Questions or comments concerning any information found on the website are always welcome.

#### **Public Outreach:**

NETMWD sponsored Dr. Mary Hearron and her students from Northeast Texas Community College during FY2006. Funding and equipment were provided to the college for training in the use of multiparameter water probes and water quality sampling. During the November Steering Committee Meeting a discussion of the sampling events completed by students at the Big Cypress Creek crossings at Hwy. 11 near Cason, TX and at Hwy. 259 near Lone Star, TX was presented. In addition the students are hoping to share their findings at the national meeting of the American Chemical Society in Chicago in March of 2007.

Northeast Texas Municipal Water  
District  
P.O. Box 955  
Hughes Springs, TX: 75656

Phone: (903)-639-7538  
Fax: (903)-639-2208



Northeast Texas  
Municipal Water District

**HDR**  
HDR Engineering, Inc.

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