

Cypress Creek Basin Highlights Report

Texas Clean Rivers Program - 2015 Update

Update on Invasive Aquatic Plants in the Cypress Creek Basin

Water bodies in the Cypress Creek Basin are among the most beautiful in Texas attracting boaters and recreational users to its reservoirs throughout the year. Unfortunately, boaters and recreational users are among the most common ways invasive aquatic plants spread from one water body to another. Once an invasive plant enters a new ecosystem that is suitable for its growth, the plant spreads rapidly and out-competes local, native vegetation which can bring about disastrous consequences. Common invasive aquatic plants in the Basin include:

- Alligatorweed
- Giant Salvinia
- Water hyacinth
- Hydrilla
- Crested floating heart



Photo Credit: USDA, Scott Bauer

Figure 1: *Giant Salvinia Weevil*

Alligatorweed has been present in Caddo Lake for some time now. The latest coverage map provided by the TPWD estimates a total of 493 acres of coverage as of September 2014. Back in the spring of 2014, 3,500 flea beetles were released in an effort to control its growth. Giant Salvinia is another invasive plant that is very difficult to manage once it is established. Its coverage area boomed in 2013 up to 6,000 acres! Fortunately, it has fallen to almost one-third of that in 2014 and recent total coverage is estimated at 2,405 acres. Attempts to manage Giant Salvinia using herbicide treatments are being conducted by the TPWD and the Cypress Valley Navigation District (CVND). Giant Salvinia weevils are also being grown and released in attempts to administer biological control. Climate can prove to be a factor as the weevil population is sensitive to cold temperatures. Water hyacinth has shown a steady decline since its

peak in 2007. A survey conducted in 2014 identified very little coverage down to as few as 20 acres. Hydrilla has ranged between 2,500 acres to just over 4,500 acres since 2005. A 2014 survey of its range shows the second lowest coverage area for the period at 1,843 acres.

Crested floating heart (*Nymphoides cristata*), or Banana Lily, was newly identified in 2014. The plant is native to Asia and is commonly found in water gardens. It was first introduced in Florida back in the late 1990's and is spreading through the US. It has been identified in the main channel of Big Cypress Creek entering Caddo Lake. Two rounds of herbicide treatment were administered shortly after it was surveyed in October 2014.

Figure 2: *Crested Floating Heart*



Crested floating heart
Nymphoides cristata
Photo by Ann Murray
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You can help prevent this potentially dangerous aquatic plant by learning how to identify it in the wild, by removing and disposing of small patches before they have the opportunity to grow, and by reporting locations where it is identified to the TWPD at (903) 938-1007.

Lake O' the Pines TMDL Update

A Total Maximum Daily Load (TMDL) Study was developed for Lake O' the Pines under the guidance of TCEQ and the U.S. Environmental Protection Agency (EPA). The final project report was approved by EPA in June 2006. A TMDL implementation plan was designed to achieve a 56% phosphorus reduction by watershed stakeholders, and approved by TCEQ in July 2008. Project milestones include tracking implementation activities in several categories. For additional details, please see the *2014 Cypress Creek Basin Summary Report*.

With the revisions made to the Implementation Plan (I-Plan), the stakeholder review process was extended. The TCEQ reviewed and approved the I-plan in 2014, and so the next phase began the same year. A joint permit with seven permittees who discharge into the waters of the Cypress Creek Basin were issued permit limits to reduce the amount of nutrients each would discharge. Each permittee is responsible for routinely monitoring their phosphorous levels and reporting them on a periodic basis.

The next step in the process is to monitor the water quality throughout Lake O' the Pines to assess the I-plan effectiveness. Routine sampling will be conducted and the data will be evaluated. A decision will then be made to continue with the management practices in place, or begin the process to see what additional practices can help reduce phosphorous levels.

What Happened to My Basin?!

If you spend any time reviewing water quality in the Cypress Creek Basin, you may have noticed Black Cypress Bayou is no longer identified as Segment 0402A. Black Cypress Bayou lies between the Lake O' the Pines and James'/Black Bayou watersheds and feeds directly into Caddo Lake just east of Jefferson. This watershed was formerly associated with Segment 0402: Big Cypress Creek below Lake O' the Pines. Relax, don't worry, it is still there. The TCEQ assessment team made the decision to characterize Black Cypress Bayou as a classified water body; meaning it will no longer be an unclassified sub-watershed of Big Cypress Creek in Segment 0402. It will now be recognized as Segment 0410: Black Cypress Bayou.

CRP Biological Monitoring in Segment 0406: Black Bayou

CRP biological monitoring took place in 2013 and 2014 on Black Bayou at State Highway 43 and at FM 4659. Personnel from Water Monitoring Solutions, Inc., NETMWD, the CLI, and Texas Parks and Wildlife gathered together on May 21st and July 31st to assess the fish community, aquatic insects, riparian and aquatic habitat, flow, and 24-hour dissolved oxygen levels. CRP biological monitoring had not been conducted in previous years due to the USGS Environmental Flows Project taking place in the basin.

The results were typical for the Basin. Fish communities scored high and intermediate. The aquatic insect community scored intermediate along with the riparian habitat. Fish scoring metrics are specific to the local ecoregion which give a fair representation of the actual fish community. However, aquatic insect and habitat metrics are scored on statewide metrics which do not account for conditions typical in the Cypress Creek watershed. The TCEQ continues to develop regional metrics for aquatic insects and once they are released for use, it is expected that results will improve.



Figure 3: Flea beetles eat Alligatorweed

Table 1: Impairments and Concerns for the Cypress Creek Basin in the 2012 Integrated Report

Segment	Description	Parameter
0401	Caddo Lake	Low DO, Low pH, Mercury in Tissue, Ammonia*, Iron in Sediment*, Manganese in Sediment
0401A	Harrison Bayou	Low DO, <i>E. coli</i> *
0402	Big Cypress Bayou below Lake O' the Pines	Low DO, Low pH, Mercury in Tissue, Macrobenthic Community*
0402B	Hughes Creek	DO*
0402E	Kelly Creek	DO*
0403	Lake O' the Pines	Low DO, Nitrate*
0404	Big Cypress Creek below Lake Bob Sandlin	<i>E. coli</i> , Chlorophyll- <i>a</i> *, DO*, Nitrate*, Total Phosphorous*
0404A	Ellison Creek Reservoir	PCBs in Tissue, Sediment Toxicity, Metals in Sediment**
0404B	Tankersley Creek	<i>E. coli</i> , Ammonia*, Impaired Habitat*, Nitrate*, Total Phosphorous*
0404C	Hart Creek	<i>E. coli</i> , DO*, Nitrate
0404E	Dry Creek	Nitrate*
0404J	Prairie Creek	DO*
0404N	Lake Daingerfield	Mercury in Tissue
0405	Lake Cypress Springs	pH, Chlorophyll- <i>a</i> *
0405A	Big Cypress Creek	<i>E. coli</i> *
0405B	Panther Creek	Impaired Habitat*
0406	Black Bayou	DO, <i>E. coli</i>
0407	James' Bayou	DO, pH, <i>E. coli</i> , Impaired Fish Community*
0407A	Beach Creek	<i>E. coli</i> *, DO*
0407B	Frazier Creek	DO*
0408C	Brushy Creek	Impaired Habitat*, Impaired Macrobenthic Community*
0409	Little Cypress Bayou (Creek)	DO, <i>E. coli</i> , DO*
0409B	South Lilly Creek	<i>E. coli</i>
0409E	Clear Creek	Impaired Habitat*, Impaired Macrobenthic Community
0410	Black Cypress Bayou	DO, <i>E. coli</i> , Mercury in Tissue, Chlorophyll- <i>a</i> *, Copper in Water*

* - Listed as a concern; ** - Metals in Sediment include: Cadmium, Iron, Manganese, Nickel, and Zinc

Delistings Removed from the *TCEQ 2012 Texas Integrated Report*

Having parameters delisted from the *TCEQ 2012 Texas Integrated Report* is a sign that water quality is improving in the Cypress Creek Basin. The *Water Bodies and Parameters Removed from the 303(d) List* show the following parameters are no longer impairments to their respective water bodies:

- **Low pH – Segment 0406: Black Bayou – Meets Criterion for Delisting**
 - Black Bayou is assessed in two parts called Assessment Units (AU). One AU extends 11.8 miles from the state line with Louisiana to the confluence with Hurricane Creek. The upper part of the segment reaches 17.7 miles from the confluence with Hurricane Creek to near FM 96. Enough data have been collected in both AU's for pH to reach the range set by the TCEQ to ensure the creek's designated use.
- ***E. coli* – Segment 0409: Little Cypress Creek - Meets Criterion for Delisting**
 - The section of Little Cypress Creek that runs just east of Gilmer upstream to its confluence with Kelsey Creek has shown reduced levels of *E. coli* that support removing bacteria as an impairment.

Water bodies can be delisted in a number of ways. Two common reasons are conditions change and water quality improves to meet standards. The designated use of a water body can be reevaluated, which can impact the standards that must be met, thereby justifying removal of an impairment or concern. Additionally, the channel flow status of a water body can be reclassified. For example, rivers and creeks can change from perennial flowing streams that always have water to intermittent with perennial pools. Streams that do not flow continuously most of the time are not held to the same criteria as perennial water bodies.

There are also many things that happen to change water quality. Rainfall runoff, new construction, leaking septic systems, wildlife population growth, dumping, business operations, and surrounding land uses all have an effect on the quality of our Basin.

How Can You Get Involved to Improve the Cypress Creek Basin?

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. Your involvement helps the development and support of the program. Gathering recommendations and concerns from the public is an important aspect of the CRP. You can get involved through steering committee meetings and volunteer activities! If you are already a member of the CRP Steering Committee, have your voice heard at the annual CRP Steering Committee meeting and participate in the open exchange of information about the basin.

Our goal is to provide readily accessible information about local environmental issues to the public, which we hope will encourage citizens of our basin to get involved. If you are interested in participating on the CRP Steering Committee or would like to receive more information about surface water quality issues within the Cypress Creek Basin, please contact the Northeast Texas Municipal Water District at 903-639-7538 or visit our web site at www.netmwd.com.

Our Mission:

The mission of the Northeast Texas Municipal Water District is to protect the water quality in the Cypress Basin and to provide a sufficient supply of water to Northeast Texas.

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