

# **Texas Integrated Report for Clean Water Act Sections 305(b) and 303(d): Overview and Results for Upper Neches Basin**

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# What is the Texas Integrated Report (IR)?

- Previously referred to as the “Texas Water Quality Inventory and 303(d) List”
- Required by Sections 305(b) and 303(d) of the Federal Clean Water Act (CWA)
- Agency’s primary surface water quality assessment and planning tool.
- Summarizes the status of the state's surface waters.
- Published every two years in even-number years.

## 2008 303(d) List

- [2008 Texas 303\(d\) List](#) (PDF)

The list was submitted to the U.S. Environmental Protection Agency on April 1, 2008; approved by the EPA July 9, 2008, with the exception of Corpus Christi Bay. The EPA has added Corpus Christi Bay to the 303(d) List for bacteria.

For more information, please go to the following EPA web site: <http://www.epa.gov/region6/water/npdes/tmdl/index.htm> [Exit...](#)

## 2008 Summary Documents

- [2008 Water Bodies Evaluated](#) (PDF)
- [2008 Water Body Assessments by Basin](#)
- [2008 Index of Water Quality Impairments](#) (PDF)
- [2008 Concerns](#) (PDF)
- [2008 Sources of Pollution for Impairments and Concerns](#) (PDF)
- [2008 New Listings](#) (PDF)
- [2008 Delistings](#) (PDF)
- (Help with [PDF](#).)

## 2008 Inventory and List of Impaired Waters

(also known as the CCWA Sections 305(b)/303(d) Integrated Report)

### Overview

- [Executive Summary](#) (PDF)
- [Water Pollution Control Program](#) (PDF)
- [Cost / Benefit Assessment](#) (PDF)

### Surface Water Monitoring and Assessment

- [Monitoring Program](#) (PDF)
- [Wetlands Program](#) (PDF)
- [Groundwater Assessment](#) (PDF)
- [Statistically-Based Monitoring in Texas](#)
- [Volunteer Monitoring in Texas](#) [Exit...](#)
- [Texas Beach Watch Program](#) (PDF)
- [Endangered Species](#) [Exit...](#)
- [Assessment Methodology and Appendices](#) (PDF)
- [Water Quality Inventory Summary of Uses](#) (PDF)
- [Trophic Assessment of Texas Reservoirs](#)

### Public Participation

- [Public Comment and Response](#) (PDF)
- [Changes to the Draft Following Public Comments, December 21, 2007 - January 31, 2008](#) (PDF)

# 2008 EPA Approved Assessment Reports, Plus Additional Reports= IR

[http://www.tceq.state.tx.us/compliance/monitoring/water/quality/data/wqm/305\\_303.html](http://www.tceq.state.tx.us/compliance/monitoring/water/quality/data/wqm/305_303.html)

# Water Quality Data

## **The IR includes:**

- Evaluation of all “readily available and reliable” water quality monitoring data.
- Evaluation of all water body types: streams, rivers, reservoirs, bays, estuaries, and wetlands.

## **Number of routine monitoring stations state-wide included in the 2010 period of record (11/30/2001 to 12/01/2008):**

- TCEQ-973
- CRP-1560 (47 Stations sampled by ANRA)
- USGS-397
- Other-302

**Special study data that do not over-represent a specific season or condition are also considered for the assessment.**

# Coordinated Monitoring Schedule (CMS)

- Annual basin CMM; data collectors meet to discuss which stations should be sampled the following fiscal year. Prioritization is based on several criteria, reviewing the impairments and concerns and sampling history report as tools.
- Web-based , created and maintained by LCRA and TCEQ staff.
- Can select Basin, Region or Fiscal Year on front page.
- Available to public and all data collectors.
- This tool improves communication and coordination of sampling and reduces duplication of sampling effort and assists with ensuring proper coverage.

CRP SCHEDULE HOME

Google Calendar

Special Projects

Log In

## Coordinated Monitoring Schedule

Clean Rivers Program partners and Texas Commission on Environmental Quality routinely monitor the water quality of rivers, lakes, bays and the Gulf of Mexico to determine if state standards are met. This site displays an interactive database that contains more than 1,800 sites monitored in Texas. Select a basin on the map to begin.

Click here to view all sites.

Choose Schedule FY:  
(Fiscal Year is September 1-August 31)

2011



Basin

ID Name

- 1 Canadian River Basin
- 2 Red River Basin
- 3 Sulphur River Basin
- 4 Cypress River Basin
- 5 Sabine River Basin
- 6 Neches River Basin
- 7 Neches-Trinity Coastal Basin
- 8 Trinity River Basin
- 9 Trinity-San Jacinto Coastal Basin
- 10 San Jacinto River Basin
- 11 San Jacinto-Brazos Coastal Basin
- 12 Brazos River Basin
- 13 Brazos-Colorado Coastal Basin
- 14 Colorado River Basin
- 15 Colorado-Lavaca Coastal Basin
- 16 Lavaca River Basin
- 17 Lavaca-Guadalupe Coastal Basin
- 18 Guadalupe River Basin
- 19 San Antonio River Basin
- 20 San Antonio-Nueces Coastal Basin
- 21 Nueces River Basin
- 22 Nueces-Rio Grande Coastal Basin
- 23 Rio Grande River Basin
- 24 Bays and Estuaries
- 25 Gulf of Mexico

TCEQ Region

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

<http://cms.lcra.org>



# Map Features of the CMS

More query options

CRP SCHEDULE HOME

Basin: 6 FY: 2011

(hold down CTRL to select more than one):

Description (key word)

Station

Region  
5  
10

Segment  
601  
602  
603

Submitting Entity  
AN  
LV  
WC

Collecting Entity  
AN  
FO  
LV

Monitoring Type  
BS  
RT

Legend  
Special Projects  
Map  
Submit Query

Site Description	Station	Region	Submitting Entity	Collecting Entity	Monitoring Type	24hr	Aq	Water	Metal	Water	Metal	Organic	Conv	Amb Tox Water	Amb Tox Sed	Bacteria	Flow	Fish Tissue	Field	Comments
Segment 604 Neches River Below Lake Palestine   Map   Hide/Show Header Bar																				
CEDAR CREEK AT FM 2497 NORTH OF DIBOLL   Map	10478	10	AN	AN	RT			3					4			4	4		4	
JACK CREEK AT FM 2497 SOUTHWEST OF LUFKIN   Map	10492	10	AN	AN	RT			4					4			4	4		4	
BILOXI CREEK AT ANGELINA CR216, SE OF LUFKIN, 1.4KM DOWNSTREAM OF US69   Map	10499	10	AN	AN	RT											6	6			
NECHES RIVER AT US 69, 1.5 MI. NW OF ROCKLAND IN TYLER COUNTY   Map	10585	10	AN	AN	RT								4			4	4		4	
CEDAR CREEK AT CR 1336   Map	13528	10	AN	AN	RT								4			4	4		4	
HURRICANE CREEK AT SH 324, 1MI SOUTH OF LUFKIN   Map	13529	10	AN	AN	RT			3					4			4	4		4	
PINEY CREEK AT FM1987, 3 MI. NE OF CORRIGAN   Map	16087	10	AN	AN	RT			4											4	
PINEY CREEK AT FM358, 6 MI. EAST OF PENNINGTON   Map	16096	10	AN	AN	RT								4			4	4		4	
BILOXI CREEK AT FM1818, 9 MI. EAST OF DIBOLL   Map	16097	10	AN	AN	RT			4					4			4	4		4	
BUCK CREEK AT FM1818, 11 MI. EAST OF DIBOLL   Map	16098	10	AN	AN	RT			4					4			4	4		4	
LAKE RATCLIFF WHERE NORTHWEST ARM OF LAKE JOINS MAIN BODY APPROXIMATELY 400 M. NORTHWEST OF	17339	10	AN	AN	RT								4			4			4	

All Basin 6  
ANRA  
stations

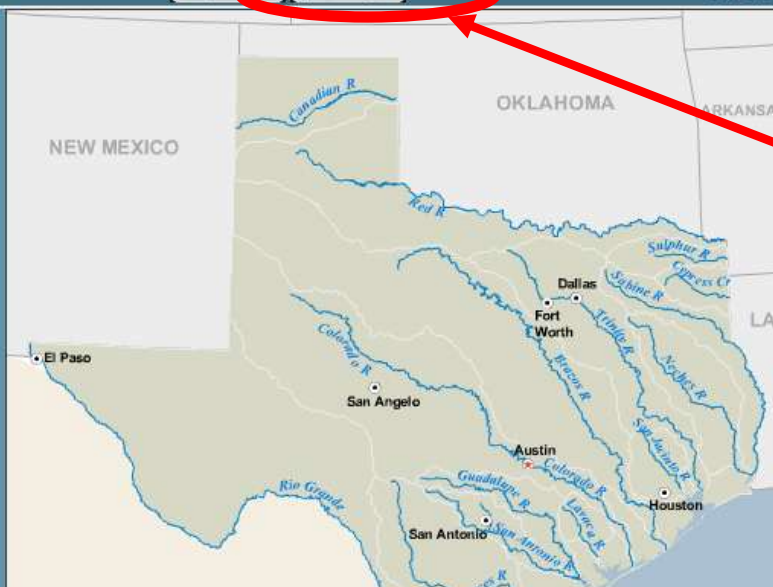
Street Map

Satellite Map Hybrid

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[Click here to view all sites.](#)



# Special Projects Feature of the CMS

CRP SCHEDULE HOME

River Basin: 6 FY: 2011

(hold down CTRL to select more than one):

Description (key word)

Station

Region  
5  
10Segment  
601  
602  
603Submitting Entity  
AN  
LV  
WCCollecting Entity  
AN  
FO  
LVMonitoring Type  
BS  
RT

Legend  
Special Projects  
Map  
Submit Query

Site Description	Station	Region	Submitting Entity	Collecting Entity	Monitoring Type	24hr DO	AqHab	Benthics	Nekton	Metal Water	Organic Water	Metal Sed	Organic Sed	Conv	Amb Tox Water	Amb Tox Sed	Bacteria	Flow	Fish Tissue	Field	Comments
Segment 604 Neches River Below Lake Palestine   <a href="#">Map</a>   <a href="#">Hide/Show Header Bar</a>																					
CEDAR CREEK AT FM 2497 NORTH OF DIBOLL   <a href="#">Map</a>	10478	10	AN	AN	RT					3				4			4	4		4	
JACK CREEK AT FM 2497 SOUTHWEST OF LUFKIN   <a href="#">Map</a>	10492	10	AN	AN	RT					4				4			4	4		4	
BILOXI CREEK AT ANGELINA CR216, SE OF LUFKIN, 1.4KM DOWNSTREAM OF US69   <a href="#">Map</a>	10499	10	AN	AN	RT												6	6			
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PINEY CREEK AT FM358, 6 MI. EAST OF PENNINGTON   <a href="#">Map</a>	16096	10	AN	AN	RT									4			4	4		4	
BILOXI CREEK AT FM1818, 9 MI. EAST OF DIBOLL   <a href="#">Map</a>	16097	10	AN	AN	RT					4				4			4	4		4	
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LAKE RATCLIFF WHERE NORTHWEST ARM OF LAKE JOINS MAIN BODY APPROXIMATELY 400 M NORTHWEST OF THE SOUTHWEST CORNER OF DAM   <a href="#">Map</a>	17339	10	AN	AN	RT									4			4			4	

## CRP SCHEDULE HOME

## Special Projects for River Basin: 6

Project	Target Complete	Group	Status	Contact	Segments
Aquatic Life Assessment (ALA) of Little Pine Island Bayou.	10/01/2009	SWQM	Sampling	Bill Harrison	0607B
Booger Branch Use Attainability Analysis		WQS	Completed	Jason Godeaux	0602A
Criteria Evaluation	08/31/2008	WQS	Submitted to EPA for Approval	Jason Godeaux	0608, 1227, 1238, 1240, 2116
Diurnal Dissolved Oxygen (DO) Dynamics in Selected Least Disturbed Streams.		SWQM	Sampling	Bill Harrison	0402, 0604, 0804, 0823, 1217, 1403, 1414, 1415, 1424, 2107, 2111, 2310, 2453
East Texas RUAA	08/31/2012	TMDL	Sampling	Russell Kotara	0303B, 0502A, 0502B, 0505B, 0512A, 0512B, 0603A, 0603B, 0604A, 0604B, 0604C, 0604M, 0608A, 0608B, 0608C, 0610A, 0611, 0611A, 0602B, 0615A
Implementation Support Project in the Sam Rayburn Reservoir and Toledo Bend Reservoir Watersheds	08/31/2007	NPS	Completed	Lee Munz	0504, 0610
Lake Palestine Continuous Water Quality Monitoring (CWQM) Project.		SWQM	Completed	Pat Bohannon	0605
Lake Palestine Diurnal Survey	09/01/2007	SWQM	Completed	Shawna Simpson	0605
Modeling Nutrient Loads from Poultry Operations in the Toledo Bend and Sam Rayburn Reservoir Watershed	03/31/2008	TSSWCB	Completed	Pamela Casebolt	0504, 0610
Pine Island Bayou Continuous Water Quality Monitoring (CWQM) Project.		SWQM	Sampling	Shawna Simpson	0607
Pine Island Bayou Use Attainability Analysis (UAA) Project.	10/15/2007	WQS	Sampling	Lori Hamilton	0607
Recreational Use-Attainability Analyses	08/31/2010	TSSWCB	Planning	TJ Helton	0404, 0404B, 0404C, 0612, 1242I, 1242K, 1242L, 1242M, 1242O, 1431
Sam Rayburn Reservoir Continuous Water Quality Monitoring (CWQM) Project		SWQM	Deleted	TBD	0615
Statewide Fish Tissue Monitoring Program Tier 1	08/01/2007	SWQM	Completed	Pat Bohannon	0199A, 0202, 0203, 0208, 0212, 0213, 0214, 0217, 0223, 0228, 0303, 0303A, 0403, 0405, 0409D, 0502, 0505, 0506, 0506H, 0514, 0515, 0604, 0605, 0610, 0611, 0802, 0804, 0809, 0811, 0812, 0814, 0816, 0817, 0818, 0820, 0823, 0828, 1004, 1006, 1206, 1207, 1208A, 1209I, 1212, 1216, 1221, 1222, 1224, 1225, 1231, 1232, 1233, 1234, 1235, 1240, 1241B, 1247, 1252, 1253A, 1254, 1256, 1403, 1405, 1407, 1412, 1418, 1420, 1421, 1422, 1423, 1426A, 1428, 1433, 1434C, 1804, 1805, 1806, 1807, 1808, 1901, 1911, 2106, 2112, 2116, 2304
Statewide Polycyclic Aromatic Hydrocarbon (PAH) Survey.	08/31/2004	SWQM	Completed	Robin Cypher	0102, 0209, 0229, 0303, 0509, 0608, 0815, 1012, 1113, 1203, 1210, 1212, 1222, 1234, 1242, 1415, 1418, 1502, 1805, 1809, 1811, 1812, 1814, 1905, 2113, 2306, 2311, 2451, 2471, 2481, 2491, 2501
The National Rivers and Streams Assessment (NRSA)	10/01/2014	SWQM	Sampling	Bill Harrison	0101, 0103, 0202A, 0207, 0211, 0226, 0503, 0604, 0802, 0826A, 1203, 1222B, 1232, 1242, 1409, 1410, 1426, 1803B, 1903, 2002, 2101, 2103, 2105, 2117, 2301, 2302, 2304, 2306, 2307, 2311
Tier 2 Mercury in East Texas Water Bodies Project.	08/01/2009	SWQM	Completed	Pat Bohannon	0204B, 0504, 0505, 0604, 0608, 0611, 0803, 0804, 1003
Twenty-four hour Dissolved Oxygen and Biological Assessment of 5b/5c listed water bodies throughout Texas	11/01/2009	SWQM	Sampling	Bill Harrison	0201A, 0501B, 0505B, 0604M, 0605A, 0608E, 1006, 1110, 1421, 1803C
Twenty-four hour Dissolved Oxygen and Use Attainment Initiative	04/01/2006	SWQM	Completed	Brenda Archer	0306, 0401A, 0402, 0402A, 0409, 0502, 0502A, 0505, 0505B, 0505G, 0507A, 0607A, 0608A, 0608C, 0701, 0704, 0821, 1013A, 1014M, 1016D, 1110, 1202, 1209I, 1211, 1242D
Willow, Cypress, and Boggy Creek Use Attainability Analysis		WQS	Sampling	Jason Godeaux	0607A, 0607C, 0608C

# Special Projects Feature of the CMS



## CRP SCHEDULE HOME

## Special Projects for River Basin: 6

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Implementation Support Project in the Sam Rayburn Reservoir and Toledo Bend Reservoir Watersheds	08/31/2007	NPS	Completed	Lee Munz	0504, 0610
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Recreational Use-Attainability Analyses	08/31/2010	TSSWCB			
Sam Rayburn Reservoir Continuous Water Quality Monitoring (CWQM) Project		SWQM			
Statewide Fish Tissue Monitoring Program Tier 1	08/01/2007	SWQM			
Statewide Polycyclic Aromatic Hydrocarbon (PAH) Survey.	08/31/2004	SWQM			
The National Rivers and Streams Assessment (NRSA)	10/01/2014	SWQM			
Tier 2 Mercury in East Texas Water Bodies Project.	08/01/2009	SWQM			
Twenty-four hour Dissolved Oxygen and Biological Assessment of 5b/5c listed water bodies throughout Texas	11/01/2009	SWQM			
Twenty-four hour Dissolved Oxygen and Use Attainment Initiative	04/01/2006	SWQM			
Willow, Cypress, and Boggy Creek Use Attainability Analysis		WQS			


# Special Projects Feature of the CMS

Pine Island Bayou Continuous Water Quality Monitoring (CWQM) Project.		SWQM
Pine Island Bayou Use Attainability Analysis (UAA) Project.	10/15/2007	WQS
Recreational Use-Attainability Analyses	08/31/2010	TSSWCB
Sam Rayburn Reservoir Continuous Water Quality Monitoring (CWQM) Project		SWQM
Statewide Fish Tissue Monitoring Program Tier 1	08/01/2007	SWQM
Statewide Polycyclic Aromatic Hydrocarbon (PAH) Survey.	08/31/2004	SWQM
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Twenty-four hour Dissolved Oxygen and Biological Assessment of 5b/5c listed water bodies throughout Texas	11/01/2009	SWQM
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Willow, Cypress, and Boggy Creek Use Attainability Analysis		WQS

CRP SCHEDULE HOME		Special Projects			
CatTrack Id	Project Title	TCEQ Program Group			
278	Lake Palestine Continuous Water Quality Monitoring (CWQM) Project.	SWQM			
Project Type	Project Description	TCEQ Program Contact			
CWQMN	Seasonal dissolved oxygen stratification and increased pH and nutrient concentrations have been identified in the upper and middle portions of Lake Palestine. Raw water from Lake Palestine, located approximately ten (10) miles southwest of Tyler, is pumped to Lake Palestine Water Treatment Plant where it is treated, filtered, and disinfected before distribution. Historically, the City of Tyler Public Water Supply (CoT PWS) staff have received complaints about the taste and odor of the public water. Seasonal taste and odor problems are typically caused by algal blooms resulting from increased nutrient concentrations, internal nutrient recycling due to temperature and DO stratification, and decreased water movement. The CoT PWS water intake structure contains three pumps, each at a different depth. Based on the degree of stratification, raw water may be collected at an appropriate depth. Water quality data (temperature, pH, specific conductivity, and DO) will be collected at various depths. The extent of DO stratification may be considered to manage the timing and volume of water withdrawn from Lake Palestine. Additionally, pH data may be used to address the pH impairments in the mid-lake area.	Pat Bohannon			
Date Modified	Target Start	Actual Start	Target End	Actual End	
1/26/2010	1/24/2008	2/20/2008		10/7/2009	
Project Status	Project Comments				
Completed	Site was deployed 2/20/2008. Project was completed and equipment removed 10/7/2009.				
Segment	Project Notes for Segment	Sampling Category - Impairment			
0605 - Lake Palestine	Deployed in mid-lake between the city of Tyler raw water intake facility and SH 155 bridge. Verticle profiles of the water column will be performed hourly to include water temperature, depth, specific conductivity, DO and pH.	CWQMN - depressed dissolved oxygen CWQMN - high pH			

# Assessment Data

- Data is collected following the Surface Water Quality Monitoring Procedures, Vol 1 & 2
- Following strict guidelines outlined in Water Quality Assurance Project Plan (QAPP) specific to each entity.
- Quality assured data is then loaded into the TCEQ database called the Surface Water Quality Information System (SWQMIS)



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**Home**

<b>Monitoring Stations</b> Search/View <input type="button" value="Go"/>	<b>Sampling</b> RFA - Search/View/Edit <input type="button" value="Go"/>	<b>Maps (GIS)</b> Display Full Extent Map <input type="button" value="Go"/>
<b>Equipment</b> Equipment - Search/View/Edit <input type="button" value="Go"/>	<b>Comparison Information</b> Search/View <input type="button" value="Go"/>	<b>Assessment</b> Segment - Search/View/Edit <input type="button" value="Go"/>
<b>Geographical Areas</b> Geographic Places Search <input type="button" value="Go"/>	<b>Projects</b> Project - Search/View/Edit <input type="button" value="Go"/>	<b>Administration</b> Change My Password <input type="button" value="Go"/>
<b>Constituents</b> Constituents - Search/View <input type="button" value="Go"/>	<b>Reports and Extracts</b> Parameter Inventory Report <input type="button" value="Go"/>	

# Texas State Water Quality Standards (TSWQS)

- The 305(b) assessment is based on the standard criteria published in the TSWQS
- Standards are written by the TCEQ under the authority of the CWA and the Texas Water Code.
- Title 30, Chapter 307 of the Texas Administrative Code (§§307.1-307.10).
- Effective August 17, 2000- present, currently under revision.
- The TSWQS criteria are stored in SWQMIS for the assessment tool (SAS, to be mentioned later) to retrieve them during the assessment process.

<http://www.epa.gov/waterscience/standards/wqslibrary/tx/tx-wqs.pdf>

# Uses Evaluated for the IR

- Aquatic Life Use
- Recreation Use
- General Use
- Fish Consumption Use
- Public Water Supply Use
- Oyster Water Use
- Recreational Beaches (New)



# Uses Evaluated for the IR

- Aquatic Life Use
  - Recreation
  - General Use
  - Fish Consumption Use
  - Public Water Supply
- Oyster Water Use
  - Recreational Beaches (New)

**Upper Neches Basin**

# Use Attainment or Concern Assessment?

Table 2.3. Sample Size Requirements for Assessment Methods

		Use Attainment or Concern Assessment	Minimum Sample Sizes and Levels of Parameter Support for Data Qualifier (see Table 2.4 for definitions of levels of support and data qualifier)		
			ID Inadequate Data	LD Limited Data	AD Adequate Data
Aquatic Life Use (continued)	LOE toxic sediment condition	U	<4 (LOE is not reported if less than four samples are available)	4-9 CN, NC, NS (data set qualifier must be JQ rather than LD)	10 NS, CN, FS, TH (data set qualifier must be JQ rather than AD)
	Habitat		0 NA	1 CS, NC	2 CS, NC
	Macrobenthic community	U	0 NA	1 CN, NC	2 NS, CN, FS, TH
	Fish community	U	0 NA	1 CN, NC	2 NS, CN, FS, TH
Recreation Use	Bacteria single sample	U	<4 NA	4-9 CN, NC, NS	10 NS, CN, FS, TH
	Bacteria geomean	U	<4 NA	4-9 CN, NC, NS	10 NS, CN, FS, TH
Recreational Beaches	Texas Beach Watch Program advisories	U	See text, NA, NS, FS (data qualifier OE)		
General Use	Water temperature	U	<4 NA	4-9 CN, NC, NS	10 NS, CN, FS, TH
	High pH	U	<4 NA	4-9 CN, NC, NS	10 NS, CN, FS, TH
	Low pH	U	<4 NA	4-9 CN, NC, NS	10 NS, CN, FS, TH
	Dissolved solids	U	<4 NA	4-9 CN, NC, NS	10 NS, CN, FS, TH
	Enterococcus (1006, 1007) single sample	U	<4 NA	4-9 CN, NC, NS	10 NS, CN, FS, TH
	Enterococcus (1006, 1007) geometric mean	U	<4 NA	4-9 CN, NC, NS	10 NS, CN, FS, TH
	Nutrient screening levels	C	<4 NA	4-9 CS, NC	10 CS, NC
	Nutrient enrichment	U	see text, NA, CN, NC, NS, TH (data set qualifier OE)		
	Altered color	U	see text, NA, CN, NC, NS, TH (data set qualifier OE)		
	Fish kill reports	U	see text, NA, CN, NC, NS, TH (data set qualifier OE)		
Fish Consumption Use	DSHS advisories, closures, and risk assessments	U	see text, NA, NC, NS, FS, TH (data set qualifier OE)		

Table 2.3 in the  
Draft 2010  
Guidance for  
Assessing and  
Reporting  
Surface Water  
Quality in Texas

# Aquatic Life Use (ALU)

## Parameters Assessed to determine ALU Support:

### Dissolved Oxygen



### Toxics in Water



### Benthic and Fish Communities



### Ambient Water and Sediment Toxicity

# ALU: Dissolved Oxygen

## ALU Designations (freshwater and saltwater):

- **Exceptional**
- **high**
- **intermediate**
- **limited**
- **minimal**

Different DO  
criteria apply to  
each ALU  
designation and  
water body type

**Does Not Support ALU**



## Four methods to evaluate DO data:

- **Grab screening level (avg criteria)**
- **Grab minimum**
- **24-hr average**
- **24-hr absolute minimum**





# Recreation Use

## Bacterial Indicators Include:

- *E. coli* – freshwater (126/394)
- Fecal coliform – freshwater or marine (200/400)
- Enterococcus – Marine (35/89)

## 2000 TSWQS Methods include:

*Bacteria Single Sample* – samples compared to single sample criteria; assessed using the binomial method comparing the ratio of values that exceed criteria over the total number of samples assessed, balancing Type I and Type II errors.

*Bacteria Geometric Mean* – calculated for entire data set assessed and compared against the geometric mean criteria for that bacteria indicator.

# General Use

Protect general water quality, not a specific use:

## Numeric Criteria:

- Low and High pH
- Water Temperature
- Chloride
- Sulfate
- Total Dissolved Solids

Appendix A of TSWQS

(Classified water bodies)

*Segment Specific criteria*

## Narrative Criteria:

- Nutrient Enrichment
- Nutrients - OP, TP, ammonia, and nitrate.
- Additionally, Chlorophyll-*a*

Excessive plant or algal growth,  
excessive DO swings

**IMPAIRMENT**

Nutrient screening levels

**CONCERN**

# Fish Consumption Use (FCU)

The assessment of contaminant levels in fisheries resources across the state is based on:

Metals and organics  
in water and fish  
tissue data



DSHS fish consumption  
advisories and closures



# FCU Data Assessed by TCEQ

TSWQS require that surface waters shall not be toxic to humans from consumption of aquatic organisms



*Metals and organics data  
are compared against:*



***FISH TISSUE***

Screening levels  
developed for the 305(b)

**CONCERN**



***WATER***

Human health criteria in  
Table 3 in the  
TSWQS

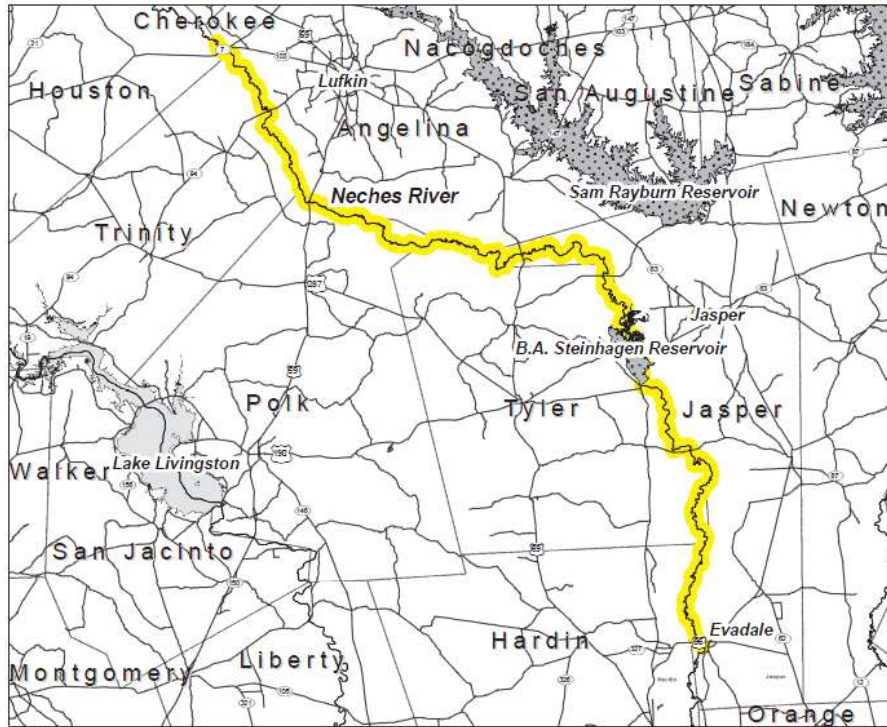
**IMPAIRMENT**



# FCU Advisories:

## Neches River

Angelina, Hardin, Houston, Jasper, Polk, Trinity, and Tyler Counties  
ADV-41 Issued March 8, 2010



### Advisory Area:

The Neches River and all contiguous waters from the State Highway 7 bridge west of Lufkin downstream to the U.S. Highway 96 bridge near Evadale

### Contaminant of Concern:

Mercury (Hg)

### Species Affected:

Flathead catfish, freshwater drum, gar, largemouth bass, spotted bass, and white bass

### Consumption Advice:

1. Adults should limit consumption of the species affected to no more than two (2) eight ounce (8 oz) meals per month.
2. Children under twelve (12) years old should limit consumption of the species affected to no more than two (2) four ounce (4 oz) meals per month.
3. Women who are nursing, pregnant, or who may become pregnant should not consume the species affected from the Neches River advisory area.



## New Mercury Advisory

## Texas Legislature Designated DSHS as only Agency Authorized to Conduct Risk Assessments and Issue Advisories:

- Aquatic Life Closures
- Restricted-No Consumption Advisories
- Restricted Consumption Advisories
- Risk Assessment - No Advisories

## DSHS Risk Assessment Results are included in the TCEQ IR



# **Public Water Supply (PWS)**

## **Surface water Human Health criteria for PWS average:**

- Organics in water
- Metals in water
- Potentially 60 constituents with standard criteria could be analyzed during the assessment.

**(Methods assessed to determine Use Support)**

## **Surface water toxic substances average concern:**

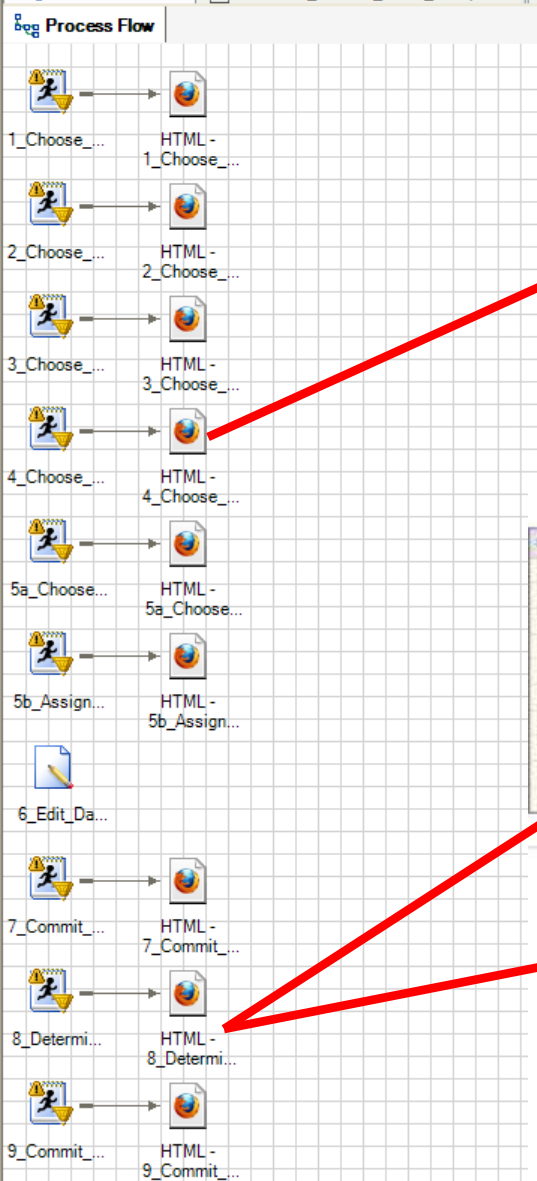
- Alachlor
- Atrazine
- MTBE
- Perchlorate

**(Methods assessed for Screening level concern)**

# Uses Evaluated for the IR

- Aquatic Life Use
  - Recreation
  - General Use
  - Fish Consumption Use
  - Public Water Supply
- Oyster Water Use
  - Recreational Beaches (New)

**Upper Neches Basin**



# New SAS Assessment Tool

## Choose Parameter Output Straight Format

Segment ID=0604 Assessment Unit Description=0604\_04

Sample Event ID	Result ID	Sample Set ID	Station ID	Subm. Ent.	Coll. Ent.	Mon. Type	Sample Date	Sample Time	Sample Depth	WC Type	METHOD	Assessment Parameter	Value	Assessment Flag
1060957	11055505	10113969	14794	WC	FO	RT	07/10/2008	02:00:00 pm	0.30	S	Acute Toxic Substances in water	Lead in water	< 0.05	ASMT
1060957	11055488	10113968	14794	WC	FO	EB	07/10/2008	01:45:00 pm	0.30	S	Acute Toxic Substances in water	Lead in water	< 0.05	EXPT
1035613	10854443	10066678	14794	WC	FO	RT	10/08/2007	01:20:00 pm	0.30	S	Acute Toxic Substances in water	Lead in water	< 0.05	ASMT
1035613	10854445	10066679	14794	WC	FO	EB	10/08/2007	01:20:00 pm	0.30	S	Acute Toxic Substances in water	Lead in water	< 0.05	EXPT
1015535	10618665	10083989	14794	WC	FO	RT	02/06/2007	01:00:00	0.30	S	Acute Toxic Substances in water	Lead in water	< 0.05	ASMT

## Acute Criteria Formula and Details

Station	Event Date	Method	Assessment Parameter	FORMULA_TXT	w	ph	hard	criterion	formula note
14794	07/10/2008	Acute Toxic Substances in water	Lead in water (UG/L)	0.889w*(1.273*(ln(hardness))-1.460)	1	7.3	43.0450	24.838383466	No W found
14794	10/08/2007	Acute Toxic Substances in water	Lead in water (UG/L)	0.889w*(1.273*(ln(hardness))-1.460)	1	6.9	8.0000	1.4018453273	No W found
14794	02/06/2007	Acute Toxic Substances in water	Lead in water (UG/L)	0.889w*(1.273*(ln(hardness))-1.460)	1	7.1	90.0651	35.054289797	No W found
14794	03/21/2006	Acute Toxic Substances in water	Lead in water (UG/L)	0.889w*(1.273*(ln(hardness))-1.460)	1	7.0	38.0475	21.226478435	No W found
14794	01/26/2006	Acute Toxic Substances in water	Lead in water (UG/L)	0.889w*(1.273*(ln(hardness))-1.460)	1	6.3	36.0000	18.769919497	No W found - No Event HARDNESS found
14794	04/25/2001	Acute Toxic Substances in water	Lead in water (UG/L)	0.889w*(1.273*(ln(hardness))-1.460)	1	6.9	0.1097	0.0202647452	No W found
10588	06/16/2000	Acute Toxic Substances in water	Lead in water (UG/L)	0.889w*(1.273*(ln(hardness))-1.460)	1	6.8	42.1421	24.159691594	No W found
10588	06/16/1999	Acute Toxic Substances in water	Lead in water (UG/L)	0.889w*(1.273*(ln(hardness))-1.460)	1	7.0	40.4405	22.08358922	No W found
10588	03/01/1999	Acute Toxic Substances in water	Lead in water (UG/L)	0.889w*(1.273*(ln(hardness))-1.460)	1	6.8	37.8866	20.85657155	No W found
10588	12/09/1998	Acute Toxic Substances in water	Lead in water (UG/L)	0.889w*(1.273*(ln(hardness))-1.460)	1	6.3	36.9416	18.359982709	No W found

## Chronic Criteria Formula and Details

Station	Event Date	Method	Assessment Parameter	FORMULA_TXT	w	ph	hard	criterion	formula note
14794	07/10/2008	Chronic Toxic Substances in water	Lead in water (UG/L)	0.792w*(1.273*(ln(hardness))-4.705)	1	6.5	36	0.6863454006	No W found
14794	10/08/2007	Chronic Toxic Substances in water	Lead in water (UG/L)	0.792w*(1.273*(ln(hardness))-4.705)	1	6.5	36	0.6863454006	No W found
14794	02/06/2007	Chronic Toxic Substances in water	Lead in water (UG/L)	0.792w*(1.273*(ln(hardness))-4.705)	1	6.5	36	0.6863454006	No W found
14794	03/21/2006	Chronic Toxic Substances in water	Lead in water (UG/L)	0.792w*(1.273*(ln(hardness))-4.705)	1	6.5	36	0.6863454006	No W found
14794	01/26/2006	Chronic Toxic Substances in water	Lead in water (UG/L)	0.792w*(1.273*(ln(hardness))-4.705)	1	6.5	36	0.6863454006	No W found
14794	04/25/2001	Chronic Toxic Substances in water	Lead in water (UG/L)	0.792w*(1.273*(ln(hardness))-4.705)	1	6.5	36	0.6863454006	No W found
10588	06/16/2000	Chronic Toxic Substances in water	Lead in water (UG/L)	0.792w*(1.273*(ln(hardness))-4.705)	1	6.5	36	0.6863454006	No W found
10588	06/16/1999	Chronic Toxic Substances in water	Lead in water (UG/L)	0.792w*(1.273*(ln(hardness))-4.705)	1	6.5	36	0.6863454006	No W found
10588	03/01/1999	Chronic Toxic Substances in water	Lead in water (UG/L)	0.792w*(1.273*(ln(hardness))-4.705)	1	6.5	36	0.6863454006	No W found
10588	12/09/1998	Chronic Toxic Substances in water	Lead in water (UG/L)	0.792w*(1.273*(ln(hardness))-4.705)	1	6.5	36	0.6863454006	No W found



# Statistics → Decision making:

**For Single Sample Method Assessments, the binomial method is employed where Type I and Type II Error rates (#exceed/#assessed) are balanced:**

- **Type I error (also,  $\alpha$  error, or false positive)**
  - e.g. falsely listing a water body for bacteria when, in fact, there is no bacteria concern there
- **Type II error ( $\beta$  error, or a false negative)**
  - e.g. not listing a water body for bacteria when, in fact, there is a bacteria concern there.

# Type I/Type II Error Rates for the Binomial Method Status Decisions:

**Table A-1. Minimum Threshold Number of Exceedances to List, or to Identify a Concern for, Use-Attainment of Conventional Parameters.**

Number of Samples	LISTING					CONCERN		
	To identify a water body as impaired with an intended Type-1 error rate of no more than 20% at an exceedance rate of 10% and a Type-2 error rate of less than about 40% at an exceedance rate of 30%. A minimum number of three exceedances are required for 303(d) listing. (Actual Type-2 at 20% exceedance rate is for information only).					To identify a water body as a concern for near non-attainment with an intended Type-1 error rate of no more than about 20% at an exceedance rate of 8% and a Type-2 error rate of less than about 40% at an exceedance rate of 20%.		
	Number of Exceedances	Actual Type-1 at 10% Exceedance	Actual Type-2 at 20% Exceedance	Actual Type-2 at 30% Exceedance	Number of exceedances for listing in 2004	Number of Exceedances	Actual Type-1 at 8% Exceedance	Actual Type-2 at 20% Exceedance
4	1				3	1	28	41
	2					2	3	82
	3					3	0	97
5	1				3	1	34	33
	2					2	5	74
	3					3	0.1	94
6	1				3	1	39	26
	2					2	8	66
	3					3	1	90
7	1				3	1	44	21
	2					2	10	58
	3					3	1	85
8	1				3	1	49	17
	2					2	13	50
	3					3	2	80
9	1				3	1	53	13
	2					2	16	44
	3					3	3	74
10	1	65	11	3	3	1	57	11
	2	26	38	15		2	19	38
	3	7	68	38		3	4	68
11	1	69	09	2	3	1	60	9
	2	30	32	11		2	22	32
	3	9	62	31		3	5	62
12	1	72	7	1	3	1	63	7
	2	34	27	9		2	25	27
	3	11	56	25		3	7	56
13	1	75	5	1	3	1	66	5
	2	38	23	6		2	28	23
	3	13	50	20		3	8	50
	4	3	75	42		4	2	75

Appendix A of the Draft 2010 Guidance for Assessing and Reporting Surface Water Quality in Texas

# Binomial Method Chart to Determine Status:

**Figure B-1. Binomial Method for Listing and Delisting Conventional Parameter Use-Attainment and Concerns**

Use this look-up table for the following use-attainment assessment methods:

<b>Aquatic Life Use:</b>	<b>General Use:</b>
-DO grab minimum	-Temperature
-24-Hour DO average	-High / Low pH
-24-Hour DO minimum	- Enterococcus for Segments 1006 and 1007

**Fully Supporting (FS)**, **No Concern (NC)**, **Concern for Near Non-attainment but Supporting (CN)**, **Not Supporting (NS)**. Note that fewer samples than illustrated are not assessed (NA). *Exceedance ratios less than that indicated ( $\leq 10\%$ ) by the thick line can be delisted.*

Number of samples	Number of Exceedances (Uses Tables A-1 and A-2)																																				
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31 - 100					
	Need a minimum of 4 samples to assess unless there are 3/3 exceedances																																				
4																																					
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Limited Data (LD)

Adequate Data (AD)

## Appendix B of the Draft 2010 Guidance for Assessing and Reporting Surface Water Quality in Texas

# Texas IR Attainment Categories

- **1** - All standards are attained; no evidence that nonattainment of any standard will occur in the near future.
- **2** - Some standards are attained; no evidence that nonattainment of any standard will occur in the near future; and insufficient or no data and information are available to determine if the remaining standards are attained.
- **3** - Insufficient or no data and information to determine if any standard is attained.

# Texas IR Attainment Categories

- **4** - Standard is not attained or nonattainment is predicted in the near future due to one or more parameters, but no TMDLs are required.
  - 4a** - All TMDLs have been completed and approved by EPA.
  - 4b** - Other control requirements are reasonably expected to result in the attainment of all standards.
  - 4c** - Nonattainment of the standard for one or more parameters is shown to be **caused by pollution**, not by pollutants and that the water quality conditions cannot be changed by the allocation and control of pollutants through the TMDL process.



# Texas IR Attainment Categories

- **5** - Standard is not attained or nonattainment is threatened in the near future for one or more parameters.
  - 5a** - TMDLs are underway, scheduled, or will be scheduled for one or more parameters.
  - 5b** - A review of the standards for one or more parameters will be conducted before TMDLs are scheduled.
  - 5c** - Additional data or information will be collected for one or more parameters before TMDLs are scheduled.

# CWA 303 (d) List (Category 5)

- In compliance with Sections 305(b) and 303(d) of the Federal Clean Water Act (CWA), the Texas Commission on Environmental Quality (TCEQ) evaluates water bodies in the state and identifies those that do not meet uses and criteria defined in the Texas Surface Water Quality Standards (TSWQS)
- The 303(d) List includes only Category 5 water bodies that do not meet one or more designated uses.
- The Index of Water Quality Impairments Report includes Categories 4 and 5 water bodies that do not meet one or more designated uses.

# Texas Integrated Report (IR) Publications

## 2008 303(d) List

- [2008 Texas 303\(d\) List \(PDF\)](#)

The list was submitted to the U.S. Environmental Protection Agency on April 1, 2008; approved by the EPA July 9, 2008, with the exception of Corpus Christi Bay. The EPA has added Corpus Christi Bay to the 303(d) List for bacteria.

For more information, please go to the following EPA web site: <http://www.epa.gov/region6/water/npdes/tmdl/index.htm> [Exit](#)

## 2008 Summary Documents

- [2008 Water Bodies Evaluated \(PDF\)](#)
- [2008 Water Body Assessments by Basin](#)
- [2008 Index of Water Quality Impairments \(PDF\)](#)
- [2008 Concerns \(PDF\)](#)
- [2008 Sources of Pollution for Impairments and Concerns \(PDF\)](#)
- [2008 New Listings \(PDF\)](#)
- [2008 Delistings \(PDF\)](#)
- [\(Help with PDF.\)](#)

## 2008 Inventory and List of Impaired Waters

(also known as the CCWA Sections 305(b)/303(d) Integrated Report)

### Overview

- [Executive Summary \(PDF\)](#)
- [Water Pollution Control Program \(PDF\)](#)
- [Cost / Benefit Assessment \(PDF\)](#)

### Surface Water Monitoring and Assessment

- [Monitoring Program \(PDF\)](#)
- [Wetlands Program \(PDF\)](#)
- [Groundwater Assessment \(PDF\)](#)
- [Statistically-Based Monitoring in Texas](#)
- [Volunteer Monitoring in Texas](#) [Exit](#)
- [Texas Beach Watch Program \(PDF\)](#)
- [Endangered Species](#) [Exit](#)
- [Assessment Methodology and Appendices \(PDF\)](#)
- [Water Quality Inventory Summary of Uses \(PDF\)](#)
- [Trophic Assessment of Texas Reservoirs](#)

### Public Participation

- [Public Comment and Response \(PDF\)](#)
- [Changes to the Draft Following Public Comments, December 21, 2007 - January 31, 2008 \(PDF\)](#)

## 2008 303(d) List

- [2008 Texas 303\(d\) List \(PDF\)](#) **Category 5**

## 2008 Summary Documents

- [2008 Water Bodies Evaluated \(PDF\)](#)
- [2008 Water Body Assessments by Basin](#) **Details of results**
- [2008 Index of Water Quality Impairments \(PDF\)](#) **Category 4 & 5**
- [2008 Concerns \(PDF\)](#)
- [2008 Sources of Pollution for Impairments and Concerns \(PDF\)](#)
- [2008 New Listings \(PDF\)](#) **Category 5**
- [2008 Delistings \(PDF\)](#) **Moved to Category 4 or not impaired.**

# Example Water Bodies Evaluated Report:

## DRAFT 2010 Texas Water Quality Inventory Water Bodies Evaluated (February 5, 2010)

SegID: 0604

### Neches River Below Lake Palestine

From a point immediately upstream of the confluence of Hopson Mill Creek in Jasper/Tyler County to Blackburn Crossing Dam in Anderson/Cherokee County

Segment Type   Freshwater Stream   New Segment?   No

**AU\_ID:**   0604\_01   *Lower boundary to a point immediately upstream of confluence of Biloxi Creek 0604M at NHD RC 12020002001061*

Flow Type  
perennial

Flow Type Source  
TSWQS

ALU Designation  
High

ALU Designation Source  
TWQS-Appendix A

**Station ID(s):** 10584; 10585

**AU\_ID:**   0604\_02   *From the confluence of Biloxi Creek (0604M) upstream to the upper confluence of Old River at NHD RC 12020002000037*

Flow Type  
perennial

Flow Type Source  
TSWQS

ALU Designation  
High

ALU Designation Source  
TWQS-Appendix A

**Station ID(s):** 10586; 13531; 13532

**AU\_ID:**   0604\_03   *From the upper confluence of Old River upstream to the confluence with Cedar Creek in Cherokee County at NHD RC 12020002000085 near Hargrove Lake*

Flow Type  
perennial

Flow Type Source  
TSWQS

ALU Designation  
High

ALU Designation Source  
TWQS-Appendix A

**Station ID(s):** 10587; 17067

**AU\_ID:**   0604\_04   *From the confluence with Cedar Creek in Cherokee County near Hargrove lake upstream to the confluence with Beech Creek in Anderson County at NHD RC 12020001006717*

Flow Type  
perennial

Flow Type Source  
TSWQS

ALU Designation  
High

ALU Designation Source  
TWQS-Appendix A

**Station ID(s):** 10588; 10589; 14794

**AU\_ID:**   0604\_05   *From the confluence with Beech Creek in Anderson County upstream to the Blackburn Crossing Dam*

Flow Type  
perennial

Flow Type Source  
TSWQS

ALU Designation  
High

ALU Designation Source  
TWQS-Appendix A

**Station ID(s):** 10590; 10591; 13627

# Upper Neches Basin example 303 (d) List

## Category 5 only water body impairments

**SegID: 0606**

### **Neches River Above Lake Palestine**

Neches River Above Lake Palestine - from a point 2.2 kilometers (1.4 miles) downstream of SH 31 [6.7 kilometers (4.2 miles) downstream of FM 279] in Henderson/Smith County to Rhines Lake Dam in Van Zandt County

#### **bacteria**

0606\_01 From a point approximately 0.06km (0.03 mi) south of St. Louis Southwestern Railroad upstream to the confluence with Prairie Creek (0606A).

Category

Year First Listed

5c

2008

#### **depressed dissolved oxygen**

0606\_02 From the confluence with Prairie Creek (0606A) upstream to the Rhines Lake Dam

Category

Year First Listed

5c

2004

#### **zinc in water**

0606\_02 From the confluence with Prairie Creek (0606A) upstream to the Rhines Lake Dam

Category

Year First Listed

5c

1996



# Example of Texas Index of Water Quality Impairments

## Category 4 & 5 water body impairments

DRAFT 2010 Texas Index of Water Quality Impairments (February 5, 2008)

<b>SegID: 0805 Upper Trinity River</b> From a point immediately upstream of the confluence of the Cedar Creek Reservoir discharge canal in Henderson/Navarro County to a point immediately upstream of the confluence of Elm Fork Trinity River in Dallas County				
<b>bacteria</b>		<u>Category</u>	<u>Carryforward</u>	<u>Year First Listed</u>
0805_03	From the confluence of Fivemile Creek upstream to the confluence of Cedar Creek.	5a	No	1996
0805_04	From confluence of Cedar Creek upstream to confluence of Elm Fork Trinity River	5a	No	1996
<b>chlordanes in edible tissue</b>		<u>Category</u>	<u>Carryforward</u>	<u>Year First Listed</u>
0805_01	From confluence of the Cedar Creek Reservoir discharge canal upstream to confluence of Smith Creek.	4a	No	1998
0805_02	From confluence of Smith Creek upstream to confluence of Tenmile Creek.	4a	No	1998
0805_03	From the confluence of Fivemile Creek upstream to the confluence of Cedar Creek.	4a	No	1998
0805_04	From confluence of Cedar Creek upstream to confluence of Elm Fork Trinity River	4a	No	1998
0805_06	From confluence of Tenmile Creek upstream to confluence of Fivemile Creek	4a	No	1998
<b>PCBs in edible tissue</b>		<u>Category</u>	<u>Carryforward</u>	<u>Year First Listed</u>
0805_01	From confluence of the Cedar Creek Reservoir discharge canal upstream to confluence of Smith Creek.	5a	No	2002
0805_02	From confluence of Smith Creek upstream to confluence of Tenmile Creek.	5a	No	2002
0805_03	From the confluence of Fivemile Creek upstream to the confluence of Cedar Creek.	5a	No	2002
0805_04	From confluence of Cedar Creek upstream to confluence of Elm Fork Trinity River	5a	No	2002
0805_06	From confluence of Tenmile Creek upstream to confluence of Fivemile Creek	5a	No	2002

**Note: there are no water body impairments in Category 4 in the Neches Basin.**

# Example of New Listings Report

**This report contains water bodies that have new parameters not meeting standards in Category 5.**

## DRAFT 2010 Water Bodies and Impairments Added to the Texas 303(d) List (February 5, 2010)

SegID	New SegID?	Segment Name	Parameter	Category
0502E	Yes	Cypress Creek (unclassified water body)	depressed dissolved oxygen	5b
0608	No	Village Creek	mercury in edible tissue	5c
0611D	No	West Mud Creek (unclassified water body)	bacteria	5b
0702	No	Intracoastal Waterway Tidal	PCBs in edible tissue	5a
0702	No	Intracoastal Waterway Tidal	dioxin in edible tissue	5a
0704	No	Hillebrandt Bayou	bacteria	5b
0801C	No	Cotton Bayou (unclassified water body)	bacteria	5b
0803G	Yes	Lake Madisonville (unclassified water body)	mercury in edible tissue	5c
0804G	No	Catfish Creek (unclassified water body)	bacteria	5b
0804H	Yes	Upper Keechi Creek (unclassified water body)	depressed dissolved oxygen	5b
0829	No	Clear Fork Trinity River Below Benbrook Lake	DDE in edible tissue	5a
0836B	Yes	Cedar Creek (unclassified water body)	depressed dissolved oxygen	5b
0841V	Yes	Crockett Branch (unclassified water body)	bacteria	5b

# Draft 2010 Delistings:

Listings can be removed from the 303(d) for several reasons (meeting criteria, error, revised methods, etc).

A change from category 5 to 4 (approved by EPA) is considered a delisting, but is still monitored as an impairment and addressed.

Note that the delistings are reported on the AU level and the Segment may still be listed in another AU for that parameter.

0608C Cypress Creek (unclassified water body)

## THE GOAL!

<i>Parameters</i>	<i>Area</i>	<i>Reason Code</i>	<i>Parameter Category</i>		<i>Additional Information</i>
			2008	2010	
aluminum in water	0608C_01	ERROR	5c		Data were collected using methods currently under evaluation

0611 Angelina River Above Sam Rayburn Reservoir

<i>Parameters</i>	<i>Area</i>	<i>Reason Code</i>	<i>Parameter Category</i>		<i>Additional Information</i>
			2008	2010	
bacteria	0611_01	MEETS	5a		

# Example of Concerns Report

**CS = Screening level concern**

**CN = Use Support Concern**

SEG ID 0604M Biloxi Creek (unclassified water body)

<u>Parameter(s)</u>	<u>Level of Concern</u>
<b>ammonia</b>	<b>CS</b>
0604M_02	From the confluence with Neches River (0604) upstream to confluence with One Eye Creek in Angelina County SE of Lufkin.
0604M_03	From the confluence with One Eye Creek in Angelina County SE of Lufkin upstream to FM 325 east of Lufkin

<u>Parameter(s)</u>	<u>Level of Concern</u>
<b>bacteria</b>	<b>CN</b>
0604M_03	From the confluence with One Eye Creek in Angelina County SE of Lufkin upstream to FM 325 east of Lufkin

<u>Parameter(s)</u>	<u>Level of Concern</u>
<b>total phosphorus</b>	<b>CS</b>
0604M_03	From the confluence with One Eye Creek in Angelina County SE of Lufkin upstream to FM 325 east of Lufkin

SEG ID 0604N Buck Creek (unclassified water body)

<u>Parameter(s)</u>	<u>Level of Concern</u>
<b>ammonia</b>	<b>CS</b>
0604N_01	From the confluence with Biloxi Creek (0604M) upstream to the confluence with Graham Creek (0604E) SW of City of Huntington at NHD RC 12020002000417.

# Draft 2010 Water Body Assessments by Basin

## DRAFT 2010 Texas Water Quality Inventory: Assessment Results for Basin 6 - Neches River (February 5, 2010)

Segment New  
in 2010?

No

SEGID 0606 Neches River Above Lake Palestine

AUD 0606\_01

From a point approximately 0.06km (0.03 mi) south of St. Louis Southwestern Railroad upstream to the confluence with Prairie Creek (0606A).

USE Aquatic Life Use

Method	Parameter	ASMT Start Date	ASMT End Date	# Asst	Mean asst	# exceed	Mean exceed	Criteria	DS Qual	LOS	CF	Int LOS	TCEQ Cause	Cat
Dissolved Oxygen grab screening level	Dissolved Oxygen Grab	12/1/2001	11/30/2008	52		0		4.00	AD	NC	<input type="checkbox"/>	NC		
Dissolved Oxygen grab minimum	Dissolved Oxygen Grab	12/1/2001	11/30/2008	52		0		3.00	AD	FS	<input type="checkbox"/>	FS		
Acute Toxic Substances in water	Aluminum	12/1/2001	11/30/2008	1		0		991.00	ID	NA	<input type="checkbox"/>	NA		
Acute Toxic Substances in water	Arsenic	12/1/2001	11/30/2008	1		0		360.00	ID	NA	<input type="checkbox"/>	NA		
Acute Toxic Substances in water	Cadmium	12/1/2001	11/30/2008	1		0		14.46	ID	NA	<input type="checkbox"/>	NA		
Acute Toxic Substances in water	Chromium	12/1/2001	11/30/2008	1		0		302.83	ID	NA	<input type="checkbox"/>	NA		
Acute Toxic Substances in water	Copper	12/1/2001	11/30/2008	1		0		9.30	ID	NA	<input type="checkbox"/>	NA		
Acute Toxic Substances in water	Lead	12/1/2001	11/30/2008	1		0		28.81	ID	NA	<input type="checkbox"/>	NA		
Acute Toxic Substances in water	Nickel	12/1/2001	11/30/2008	1		0		765.95	ID	NA	<input type="checkbox"/>	NA		
Acute Toxic Substances in water	Selenium	12/1/2001	11/30/2008	3		0		20.00	ID	NA	<input type="checkbox"/>	NA		
Acute Toxic Substances in water	Silver (ionic)	12/1/2001	11/30/2008	1		0		0.80	ID	NA	<input type="checkbox"/>	NA		
Acute Toxic Substances in water	Zinc	12/1/2001	11/30/2008	1		0		61.88	ID	NA	<input type="checkbox"/>	NA		
Chronic Toxic Substances in water	Arsenic	12/1/2001	11/30/2008	1	1.34			190.00	ID	NA	<input type="checkbox"/>	NA		
Chronic Toxic Substances in water	Cadmium	12/1/2001	11/30/2008	1	0.163			0.33	ID	NA	<input type="checkbox"/>	NA		
Chronic Toxic Substances in water	Chromium	12/1/2001	11/30/2008	1	2			53.42	ID	NA	<input type="checkbox"/>	NA		
Chronic Toxic Substances in water	Copper	12/1/2001	11/30/2008	1	1.749			3.50	ID	NA	<input type="checkbox"/>	NA		
Chronic Toxic Substances in water	Lead	12/1/2001	11/30/2008	1	3.01			0.39	ID	NA	<input type="checkbox"/>	NA		
Chronic Toxic Substances in water	Nickel	12/1/2001	11/30/2008	1	8.5			45.34	ID	NA	<input type="checkbox"/>	NA		
Chronic Toxic Substances in water	Selenium	12/1/2001	11/30/2008	3	0.467			5.00	ID	NA	<input type="checkbox"/>	NA		
Chronic Toxic Substances in water	Zinc	12/1/2001	11/30/2008	1	4			30.08	ID	NA	<input type="checkbox"/>	NA		

USE Recreation Use

Method	Parameter	ASMT Start Date	ASMT End Date	# Asst	Mean asst	# exceed	Mean exceed	Criteria	DS Qual	LOS	CF	Int LOS	TCEQ Cause	Cat
Bacteria Single Sample	E. coli	12/1/2001	11/30/2008	47		11	1161.82	394.00	AD	FS	<input type="checkbox"/>	FS		
Bacteria Single Sample	Fecal coliform	12/1/2001	11/30/2008	3		0		400.00	SM	NA	<input type="checkbox"/>	NA		
Bacteria Geomean	E. coli	12/1/2001	11/30/2008	47	202.4			126.00	AD	NS	<input type="checkbox"/>	NS	bacteria	5c
Bacteria Geomean	Fecal coliform	12/1/2001	11/30/2008	3	80.46			200.00	SM	NA	<input type="checkbox"/>	NA		



# Draft 2010 IR 303 (d) Summary

Note: the Draft IR is subject to change prior to final submission

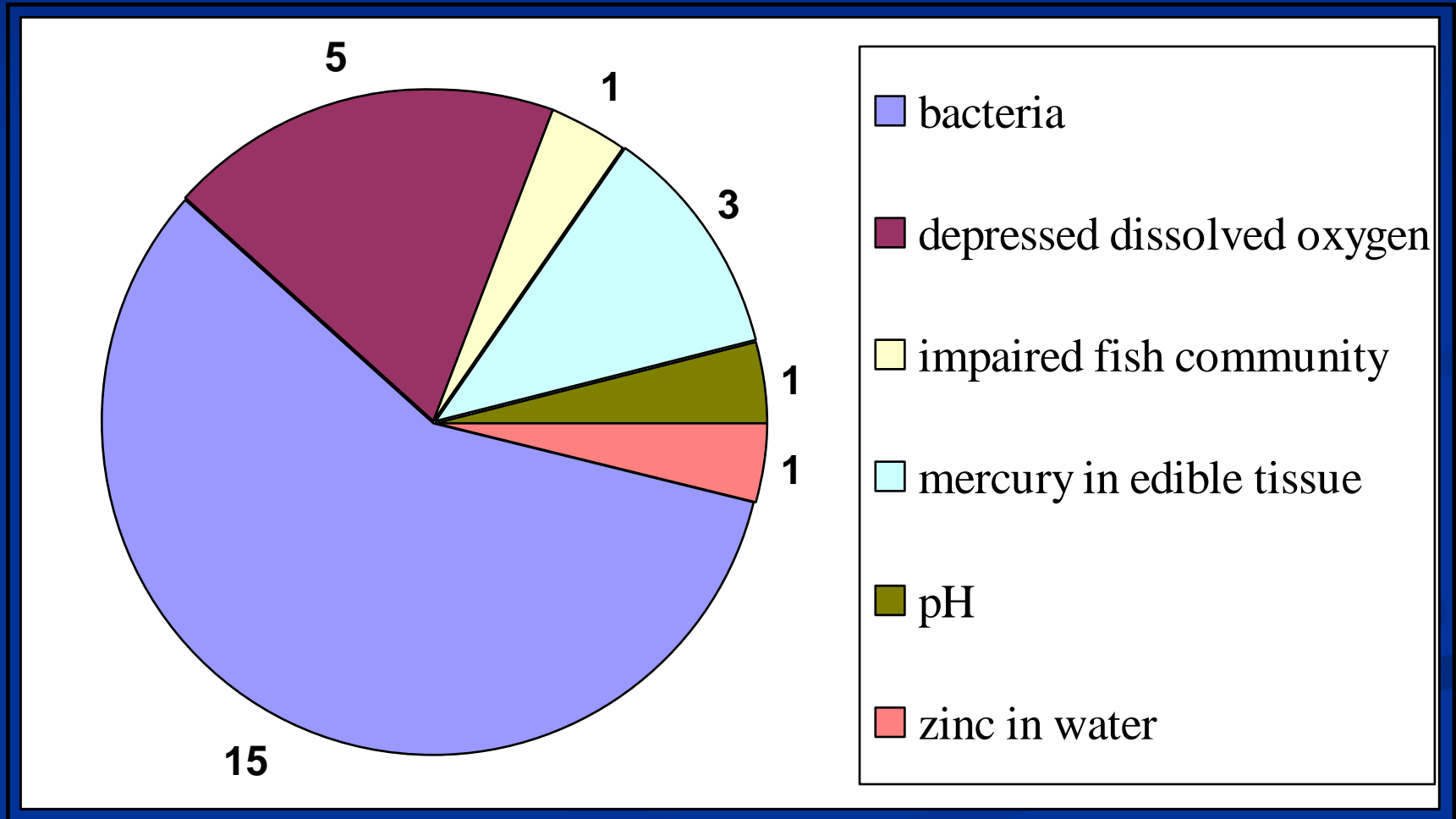
**The Draft 2010 IR includes 1066 water bodies evaluated statewide.**

**The Draft 2010 IR 303(d) List identifies:**

- **474 water bodies with impairments, statewide.**
  - **20 in the Upper Neches Basin, out of 37 evaluated.**
- **591 water body/impairments, statewide. Note: a water body can be impaired for more than one parameter.**
  - **26 water body/impairments in the Upper Neches Basin.**

# Draft 2010 IR 303(d): Upper Neches Basin

Note: the Draft IR is subject to change prior to final submission.



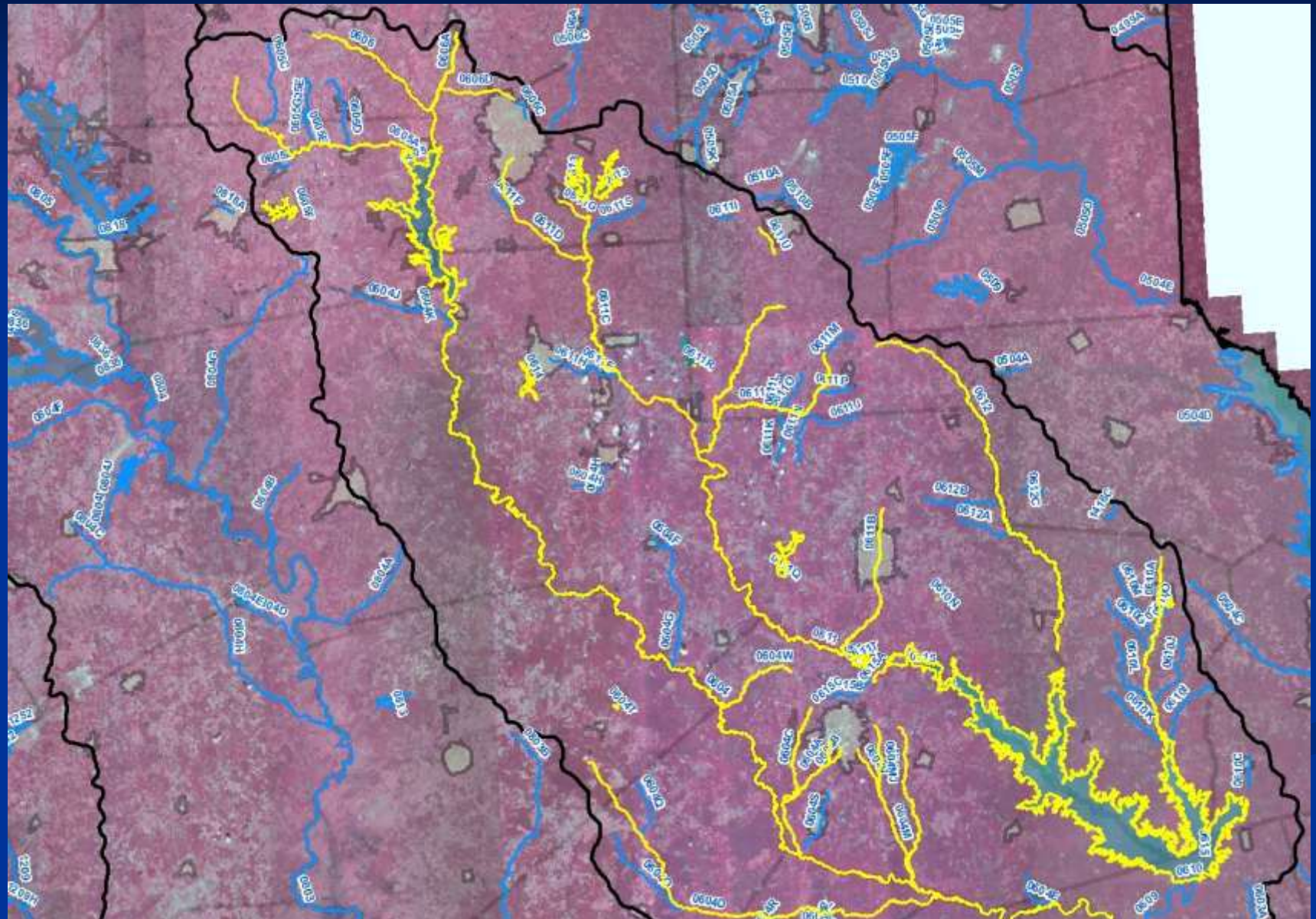
# Upper Neches Basin Water Bodies Included in Draft IR

## **Classified and Unclassified water bodies:**

- 0604: Neches River Below Lake Palestine
- 0604A: Cedar Creek
- 0604B: Hurricane Creek
- 0604C: Jack Creek
- 0604D: Piney Creek
- 0604I: Dabbs Creek
- 0604M: Biloxi Creek
- 0604N: Buck Creek
- 0604T: Lake Ratcliff
- 0604U: Unnamed Tributary of Dabbs Creek
- 0604V: One Eye Creek in Angelina County
- 0604W: Bodan Creek
- 0605: Lake Palestine
- 0605A: Kickapoo Creek in Henderson County
- 0605F: Lake Athens
- 0606: Neches River Above Lake Palestine
- 0606A: Prairie Creek
- 0606D: Black Fork Creek
- 0610: Sam Rayburn Reservoir
- 0610A: Ayish Bayou
- 0610N: Kelly Lake
- 0610O: City Lake
- 0611: Angelina River Above Sam Rayburn Reservoir
- 0611A: East Fork Angelina River
- 0611B: La Nana Bayou
- 0611C: Mud Creek
- 0611D: West Mud Creek
- 0611G: Blackhawk Creek
- 0611Q: Lake Nacogdoches
- 0611R: Lake Striker
- 0611T: Lake Kurth 0611U: Bromley Creek
- 0612: Attoyac Bayou
- 0613: Lake Tyler/Lake Tyler East
- 0614: Lake Jacksonville
- 0615: Angelina River/Sam Rayburn Reservoir
- 0615A: Paper Mill Creek

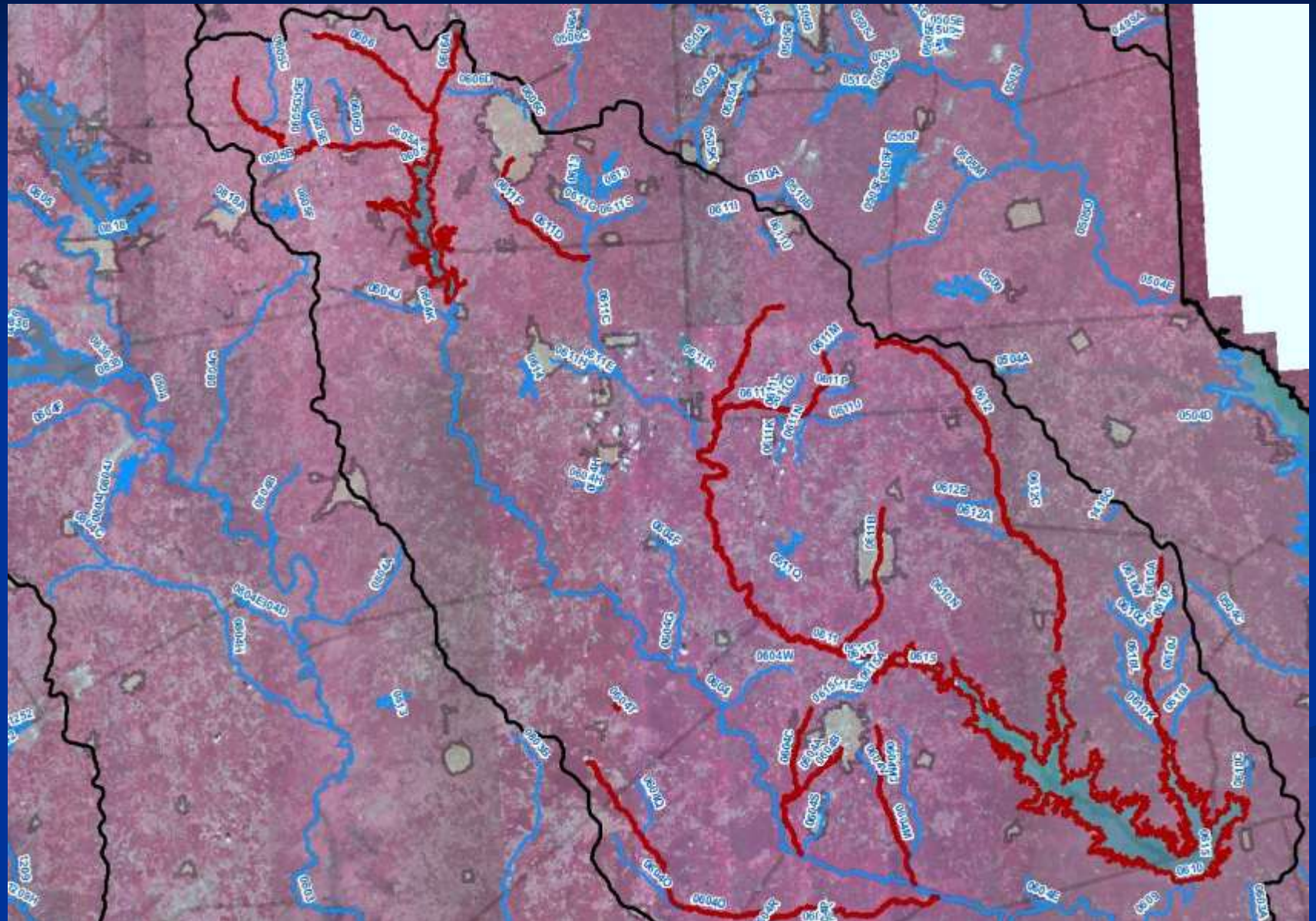


# Upper Neches Basin Water Bodies Included in Draft 2010 IR





# Upper Neches Basin Water Bodies with Impairments Draft 2010 IR



# Pollutant Sources



- For every impairment a pollutant source is identified.
- Sources are identified by TCEQ staff, river authority staff, other data collectors, and special studies. Best professional judgment is used to identify sources for most impairments.
- EPA 305(b) categories and naming convention are used to make Texas information useful in national assessments.
- Pollutant sources are generally categorized as Point Source, Nonpoint Source, or Unknown



# Addressing Impairments:

- When a segment is identified on the 303(d) list, certain new requirements may apply. Listing has implications for facilities that discharge wastewater into the listed segment; most importantly, the TCEQ may not allow any new or expanded discharges of a listed pollutant into a listed segment if it would contribute to the impairment.
- Implementation of nonpoint source management practices may also be recommended under restoration plans.
- After listing, the TCEQ may develop a restoration plan, evaluate the appropriateness of the standard (5b), collect more data and information to determine what management steps are needed (5c), or begin TMDL planning and modeling if appropriate (5a).

# Special Projects:

- ALA: Aquatic Life Use Assessment
- ALM: Aquatic Life Monitoring
- UAA: Use Attainment Analysis
- RUAA: Recreational Use Attainment Analysis
- RWA: Receiving Water Assessment
- WLE: Waste Load Evaluation
- TMDL: Total Maximum Daily Load Project
- IP: Implementation Plan
- NPS: Non Point Source Project
- WPP: Watershed Protection Plan
- SS: Special Study
- CWQMN: Continuous Water Quality Monitoring Network

## CRP SCHEDULE HOME

## Special Projects for River Basin: 6

Project	Target Complete	Group	Status	Contact	Segments
Aquatic Life Assessment (ALA) of Little Pine Island Bayou.	10/01/2009	SWQM	Sampling	Bill Harrison	0607B
Booger Branch Use Attainability Analysis		WQS	Completed	Jason Godeaux	0602A
Criteria Evaluation	08/31/2008	WQS	Submitted to EPA for Approval	Jason Godeaux	0608, 1227, 1238, 1240, 2116
Diurnal Dissolved Oxygen (DO) Dynamics in Selected Least Disturbed Streams.		SWQM	Sampling	Bill Harrison	0402, 0604, 0804, 0823, 1217, 1403, 1414, 1415, 1424, 2107, 2111, 2310, 2453
East Texas RUAA	08/31/2012	TMDL	Sampling	Russell Kotara	0303B, 0502A, 0502B, 0505B, 0512A, 0512B, 0603A, 0603B, 0604A, 0604B, 0604C, 0604M, 0608A, 0608B, 0608C, 0610A, 0611, 0611A, 0602B, 0615A
Implementation Support Project in the Sam Rayburn Reservoir and Toledo Bend Reservoir Watersheds	08/31/2007	NPS	Completed	Lee Munz	0504, 0610
Lake Palestine Continuous Water Quality Monitoring (CWQM) Project.		SWQM	Completed	Pat Bohannon	0605
Lake Palestine Diurnal Survey	09/01/2007	SWQM	Completed	Shawna Simpson	0605
Modeling Nutrient Loads from Poultry Operations in the Toledo Bend and Sam Rayburn Reservoir Watershed	03/31/2008	TSSWCB	Completed	Pamela Casebolt	0504, 0610
Pine Island Bayou Continuous Water Quality Monitoring (CWQM) Project.		SWQM			
Pine Island Bayou Use Attainability Analysis (UAA) Project.	10/15/2007	WQS			
Recreational Use-Attainability Analyses	08/31/2010	TSSWCB			
Sam Rayburn Reservoir Continuous Water Quality Monitoring (CWQM) Project		SWQM			
Statewide Fish Tissue Monitoring Program Tier 1	08/01/2007	SWQM			
Statewide Polycyclic Aromatic Hydrocarbon (PAH) Survey.	08/31/2004	SWQM			
The National Rivers and Streams Assessment (NRSA)	10/01/2014	SWQM			
Tier 2 Mercury in East Texas Water Bodies Project.	08/01/2009	SWQM			
Twenty-four hour Dissolved Oxygen and Biological Assessment of 5b/5c listed water bodies throughout Texas	11/01/2009	SWQM			
Twenty-four hour Dissolved Oxygen and Use Attainment Initiative	04/01/2006	SWQM			
Willow, Cypress, and Boggy Creek Use Attainability Analysis		WQS			

**The CatTrack Database provides data for Special Projects on the CMS.**

Pine Island Bayou Continuous Water Quality Monitoring (CWQM) Project.		SWQM
Pine Island Bayou Use Attainability Analysis (UAA) Project.	10/15/2007	WQS
Recreational Use-Attainability Analyses	08/31/2010	TSSWCB
Sam Rayburn Reservoir Continuous Water Quality Monitoring (CWQM) Project		SWQM
Statewide Fish Tissue Monitoring Program Tier 1	08/01/2007	SWQM
Statewide Polycyclic Aromatic Hydrocarbon (PAH) Survey.	08/31/2004	SWQM
The National Rivers and Streams Assessment (NRSA)	10/01/2014	SWQM
Tier 2 Mercury in East Texas Water Bodies Project.	08/01/2009	SWQM
Twenty-four hour Dissolved Oxygen and Biological Assessment of 5b/5c listed water bodies throughout Texas	11/01/2009	SWQM
Twenty-four hour Dissolved Oxygen and Use Attainment Initiative	04/01/2006	SWQM
Willow, Cypress, and Boggy Creek Use Attainability Analysis		WQS

## CRP SCHEDULE HOME

## Special Projects

CatTrack Id	Project Title	TCEQ Program Group	
278	Lake Palestine Continuous Water Quality Monitoring (CWQM) Project.	SWQM	
Project Type	Project Description	TCEQ Program Contact	
CWQMN	Seasonal dissolved oxygen stratification and increased pH and nutrient concentrations have been identified in the upper and middle portions of Lake Palestine. Raw water from Lake Palestine, located approximately ten (10) miles southwest of Tyler, is pumped to Lake Palestine Water Treatment Plant where it is treated, filtered, and disinfected before distribution. Historically, the City of Tyler Public Water Supply (CoT PWS) staff have received complaints about the taste and odor of the public water. Seasonal taste and odor problems are typically caused by algal blooms resulting from increased nutrient concentrations, internal nutrient recycling due to temperature and DO stratification, and decreased water movement. The CoT PWS water intake structure contains three pumps, each at a different depth. Based on the degree of stratification, raw water may be collected at an appropriate depth. Water quality data (temperature, pH, specific conductivity, and DO) will be collected at various depths. The extent of DO stratification may be considered to manage the timing and volume of water withdrawn from Lake Palestine. Additionally, pH data may be used to address the pH impairments in the mid-lake area.	Pat Bohannon	
Date Modified			
1/26/2010			
Project Status	Completed		
Target Start	Actual Start	Target End	Actual End
1/24/2008	2/20/2008		10/7/2009
Project Comments			
Site was deployed 2/20/2008. Project was completed and equipment removed 10/7/2009.			
Segment	Project Notes for Segment	Sampling Category - Impairment	
0605 - Lake Palestine	Deployed in mid-lake between the city of Tyler raw water intake facility and SH 155 bridge. Verticle profiles of the water column will be performed hourly to include water temperature, depth, specific conductivity, DO and pH.	CWQMN - depressed dissolved oxygen CWQMN - high pH	



# Where we are in the IR process:

- After the Draft was published for public comment 02/05/2010, SWQM staff have been responding to comments submitted by the public and EPA.
- Assessment staff have been verifying results for accuracy and making changes if necessary.
- Brief management on responses to comments, summary information, and changes made in the results data base (TXBAD) since the draft publication.
- The TCEQ Commissioners are expected to approve the submission to EPA in June.
- Supply final electronic submission of the Draft 2010 IR to EPA for approval.
- Once EPA approves, post all finalized documents on the TCEQ website.

# You are now an IR Expert:

