



# ANRA's Water Quality Monitoring Activities in the Upper Neches Basin



# Water Quality Monitoring in the Upper Neches Basin

Number of Sites Monitored in the Upper Neches River Basin for FY11						
Sampling Entity	Field Parameters	Conventional Parameters	Bacteria	Metals in Water	Aquatic Habitat	24-Hour DO
ANRA	26 quarterly		26 quarterly 1 bimonthly			
City of Tyler	4 quarterly		3 quarterly 1 monthly			
TCEQ	34 quarterly			9 quarterly 2 5X/year	2 annually	1 annually



# Water Quality Monitoring in the Upper Neches Basin

Parameters for Quarterly Monitoring		
Field Parameters	Conventional Parameters	Bacteria
Dissolved Oxygen Days Since Last Significant Rainfall Flow Severity Instantaneous Stream Flow pH Present Weather Secchi Transparency Specific Conductance Total Water Depth Water Temperature	Ammonia-N Chloride Chlorophyll- <i>a</i> Pheophytin- <i>a</i> Sulfate Total Dissolved Solids (TDS) Total Suspended Solids (TSS) Nitrate+Nitrite-N Total Phosphorus	<i>E. coli</i>



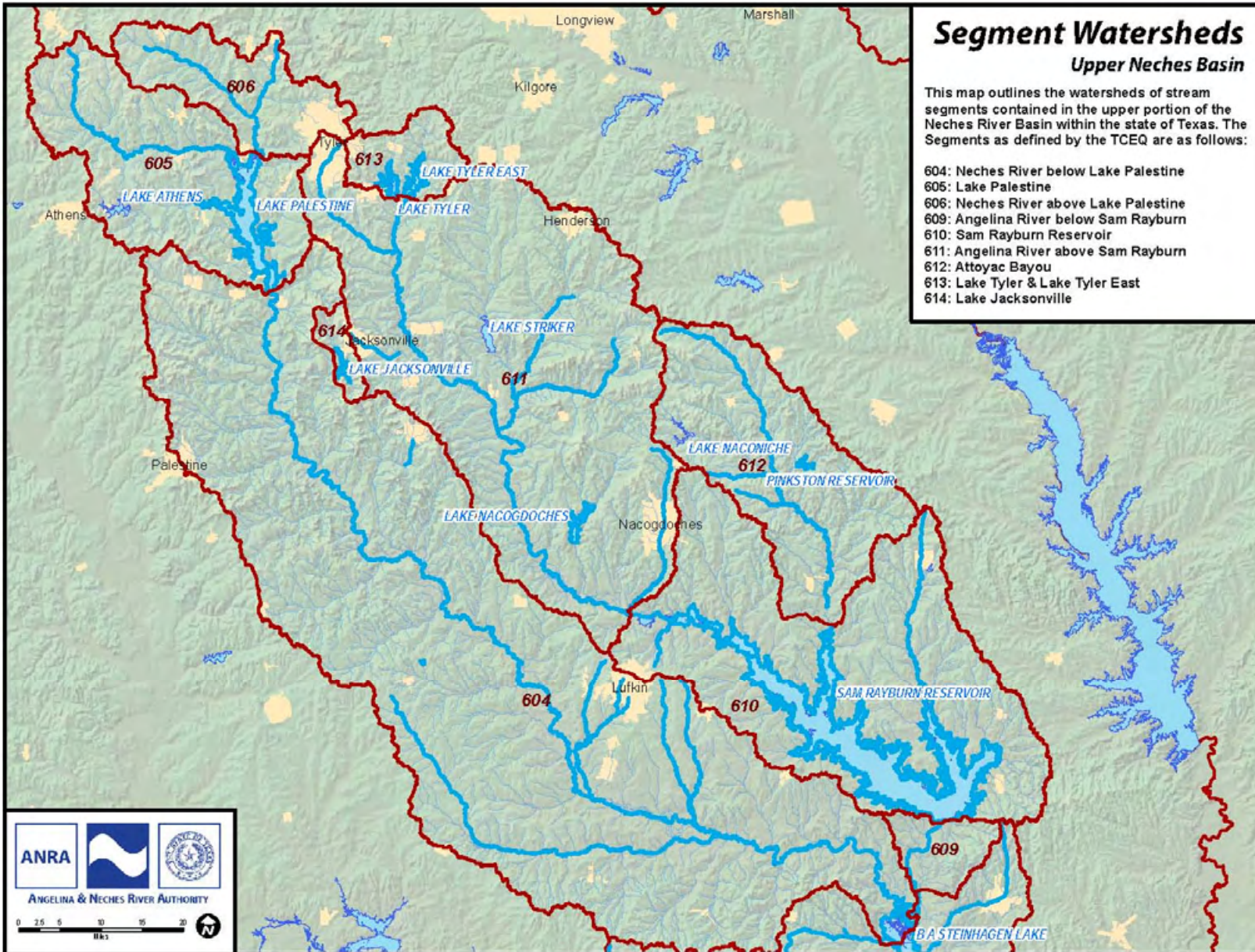


## Segment Watersheds

### Upper Neches Basin

This map outlines the watersheds of stream segments contained in the upper portion of the Neches River Basin within the state of Texas. The Segments as defined by the TCEQ are as follows:

- 604: Neches River below Lake Palestine
- 605: Lake Palestine
- 606: Neches River above Lake Palestine
- 609: Angelina River below Sam Rayburn
- 610: Sam Rayburn Reservoir
- 611: Angelina River above Sam Rayburn
- 612: Attoyac Bayou
- 613: Lake Tyler & Lake Tyler East
- 614: Lake Jacksonville



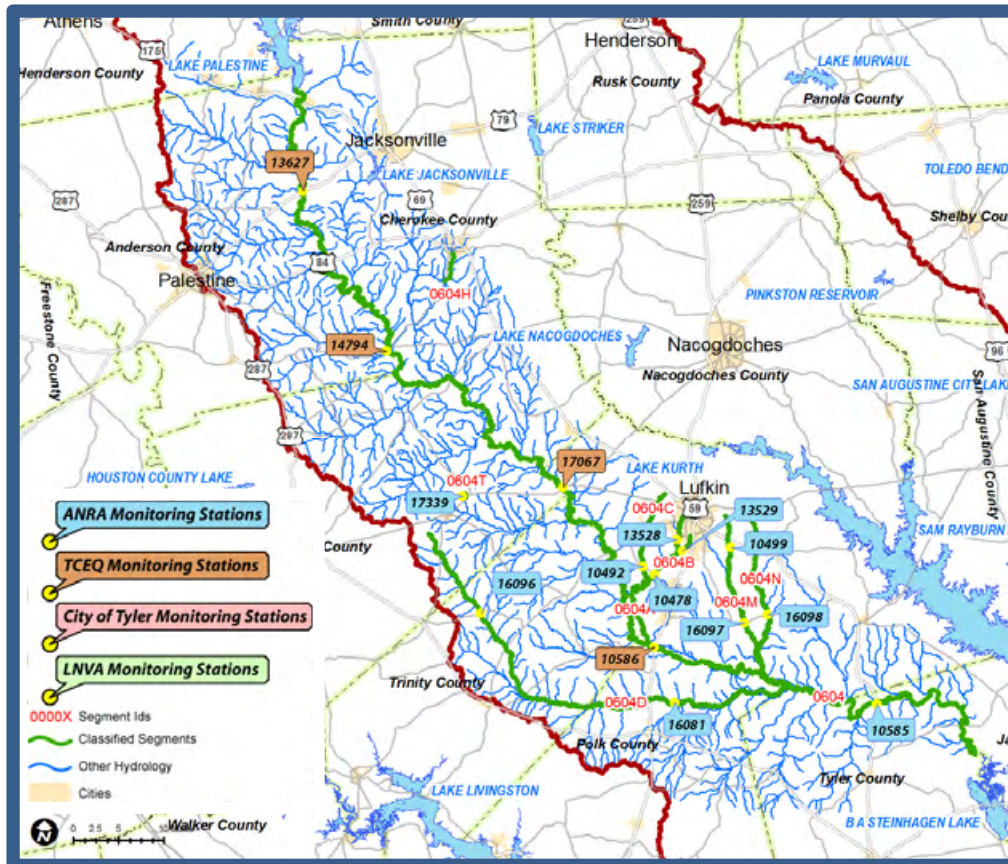
ANGELINA & NECHES RIVER AUTHORITY

0 2.5 5 10 15 20 Miles





## Segment 0604 Neches River below Lake Palestine



### ANRA Monitoring Stations

Station	Description
10478	Cedar Creek at FM 2497
10492	Jack Creek at FM 2497
10499	Biloxi Creek at Angelina CR 216
10585	Neches River at US 69
13528	Cedar Creek at CR 1336
13529	Hurricane Creek at SH 324
16081	Piney Creek at FM1987
16096	Piney Creek at FM358
16097	Biloxi Creek at FM1818
16098	Buck Creek at FM1818
17339	Lake Ratcliff



Neches River





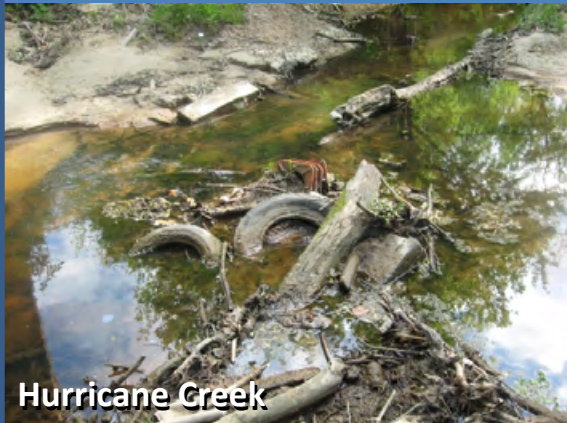
## Segment 0604 Neches River below Lake Palestine

### Impairments in Segment 0604 (2010 Draft Texas Integrated Report)

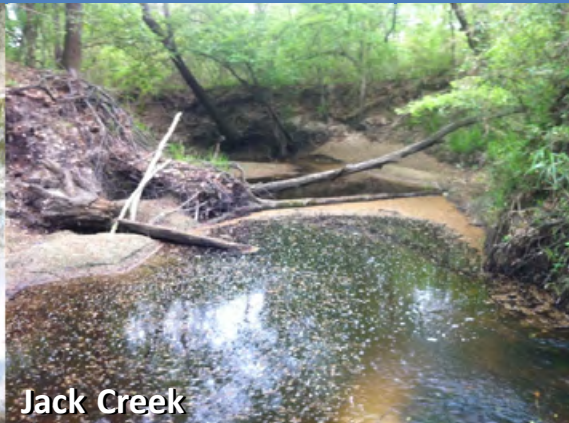
Segment	Segment Name	Impairment	Category
0604A	Cedar Creek	Bacteria	5c
0604B	Hurricane Creek	Bacteria	5b
0604C	Jack Creek	Bacteria	5b
0604D	Piney Creek	Depressed DO	5c
0604M	Biloxi Creek	Bacteria Depressed DO	5b 5c
0604T	Lake Ratcliff	Mercury in fish tissue	5c



Cedar Creek



Hurricane Creek



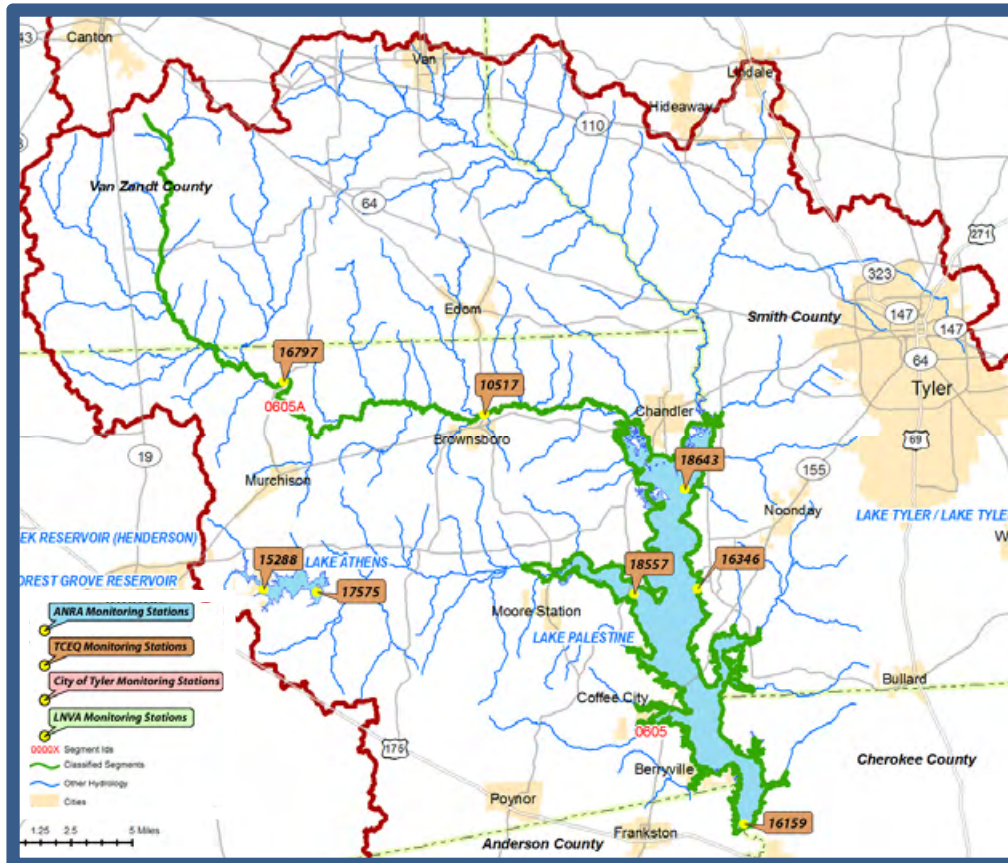
Jack Creek



Biloxi Creek



## Segment 0605 Lake Palestine



### ANRA Monitoring Stations

Station	Description
No ANRA Monitoring Stations on Segment 0605	
Monitoring of Lake Palestine is conducted by TCEQ Region 5 - Tyler	



Lake Palestine





## Segment 0605 Lake Palestine

### Impairments in Segment 0605 (2010 Draft Texas Integrated Report)

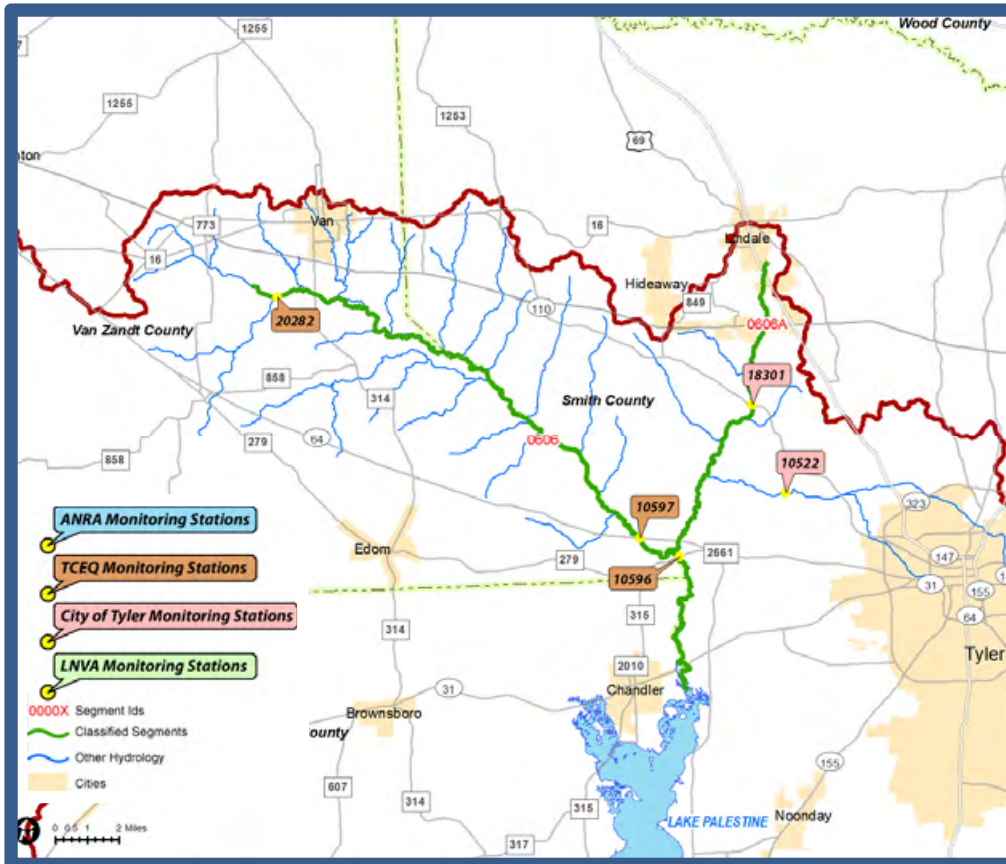
Segment	Segment Name	Impairment	Category
0605	Lake Palestine	pH	5a
0605A	Kickapoo Creek	Bacteria	5c
		Depressed DO	5c







## Segment 0606 Neches River Above Lake Palestine



### City of Tyler Monitoring Stations

Station	Description
18301	Prairie Creek at SH 110
10522	Black Fork Creek CR 46



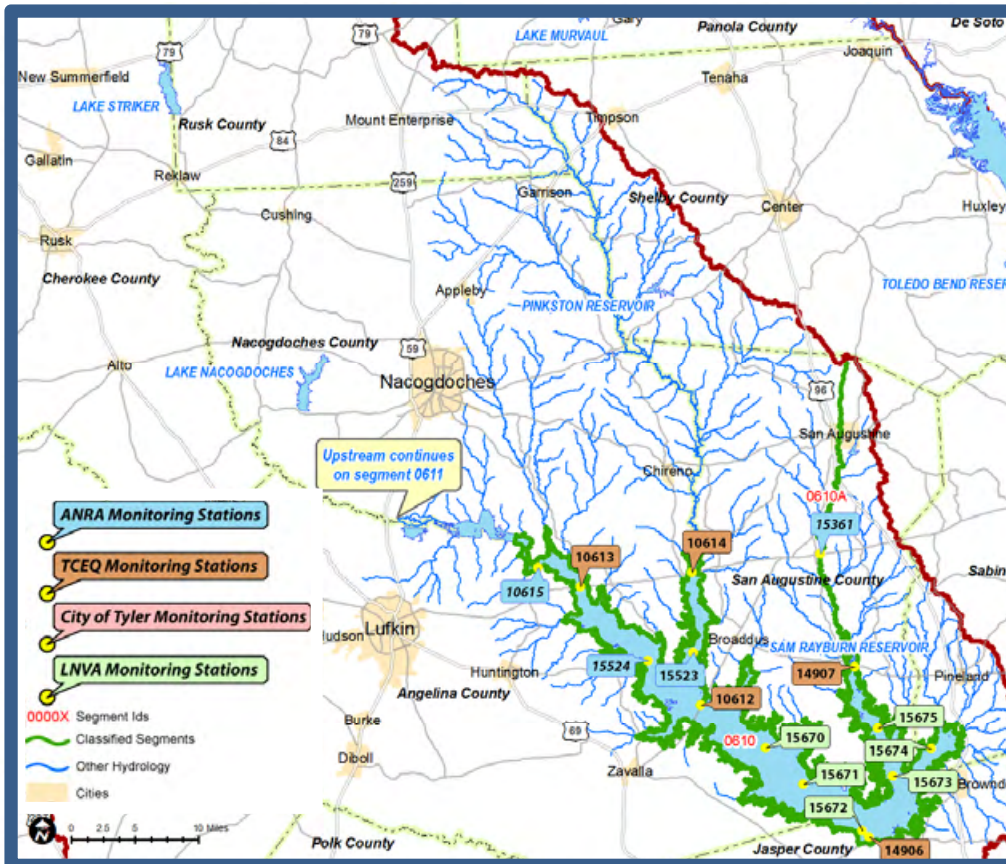
City of Tyler Field Personnel

### Impairments in Segment 0605 (2010 Draft Texas Integrated Report)

Segment	Segment Name	Impairment	Category
0606	Neches River above Lake Palestine	Bacteria	5c
		Depressed DO	5c
		Zinc	5c
0606A	Prairie Creek	Bacteria	5b



## Segment 0610 Sam Rayburn Reservoir



### ANRA Monitoring Stations

Station	Description
10615	Sam Rayburn at Marion's Ferry
15523	Sam Rayburn at Alligator Cove
15524	Sam Rayburn near Shirley Creek
15361	Ayish Bayou at SH 103



Sam Rayburn Reservoir





## Segment 0610 Sam Rayburn Reservoir

### Impairments in Segment 0610 (2010 Draft Texas Integrated Report)

Segment	Segment Name	Impairment	Category
0610	Sam Rayburn Reservoir	Mercury in edible tissue	5c
0610A	Ayish Bayou	Bacteria	5b



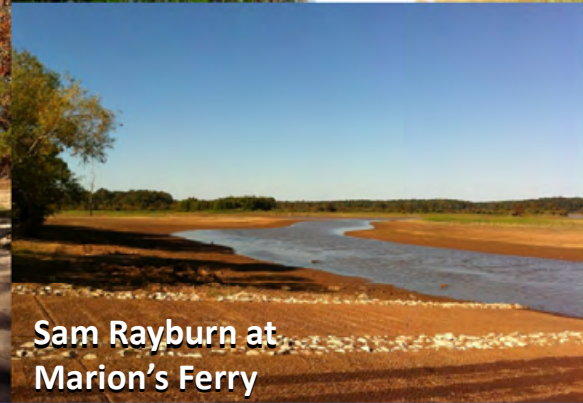
Ayish Bayou



Sam Rayburn at Shirley Creek



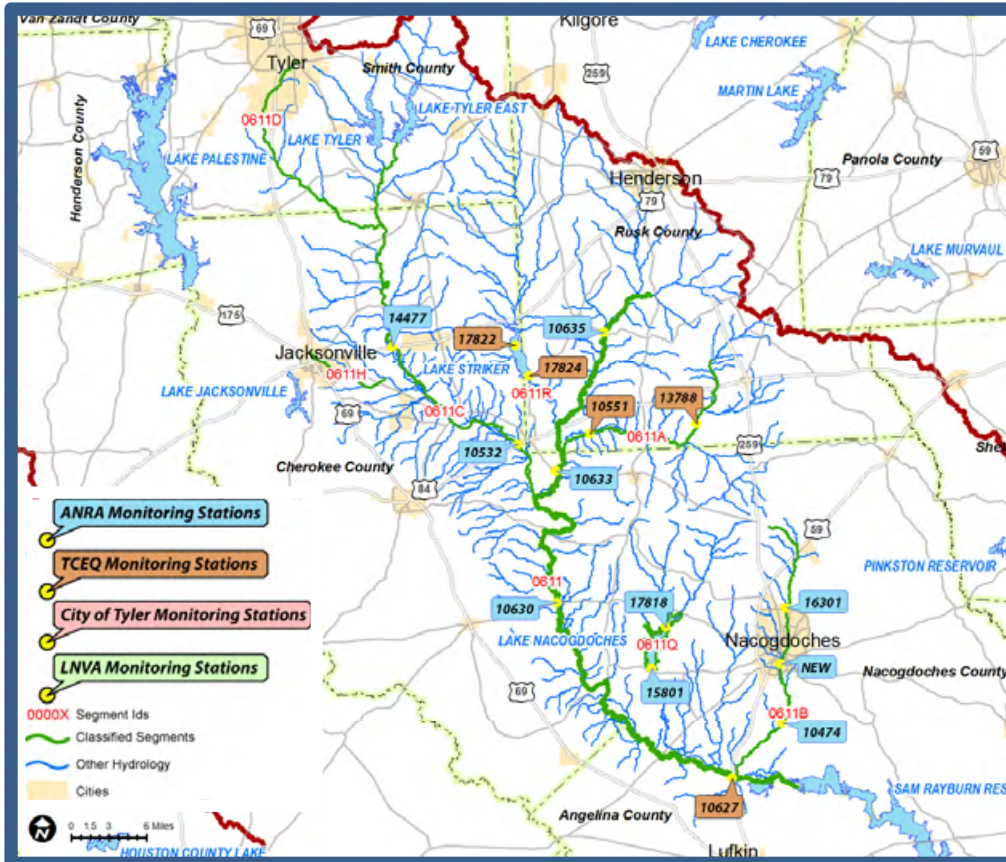
Sam Rayburn at Alligator Cove



Sam Rayburn at Marion's Ferry



## Segment 0611 Angelina River above Sam Rayburn Reservoir



### ANRA Monitoring Stations

Station	Description
10630	Angelina River at SH 21
10633	Angelina River at SH 204
10635	Angelina River at FM 1798
10474	La Nana Bayou at CR 526
16301	La Nana Bayou at Loop 224
20792	La Nana Bayou at East Main Street
10532	Mud Creek at US 84
14477	Mud Creek at US 79
10543	West Mud Creek upstream of SSTP (TY)
18302	West Mud Creek at US 69 (TY)
15801	Lake Nacogdoches Main Pool
17818	Lake Nacogdoches Upper Lake



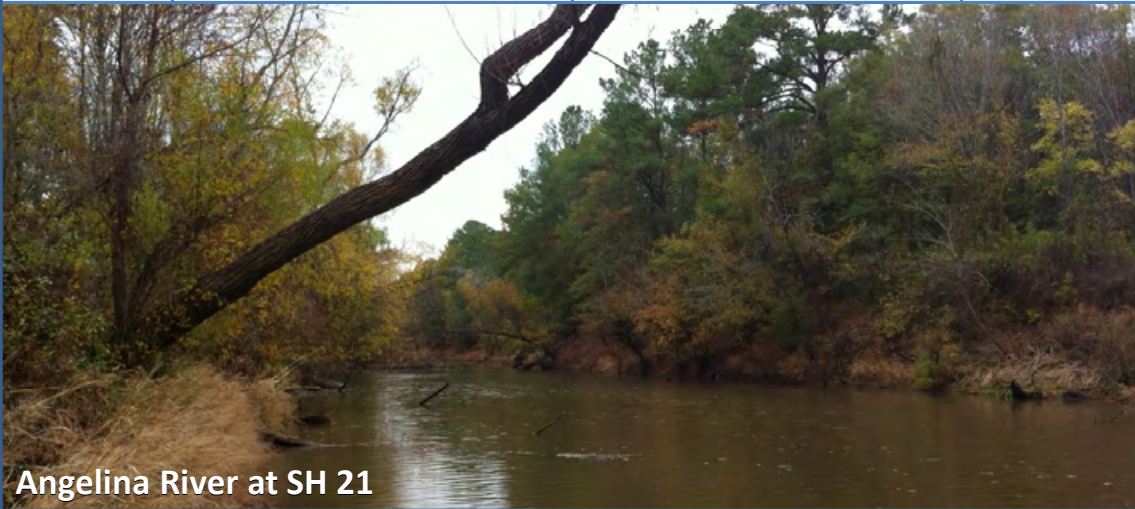




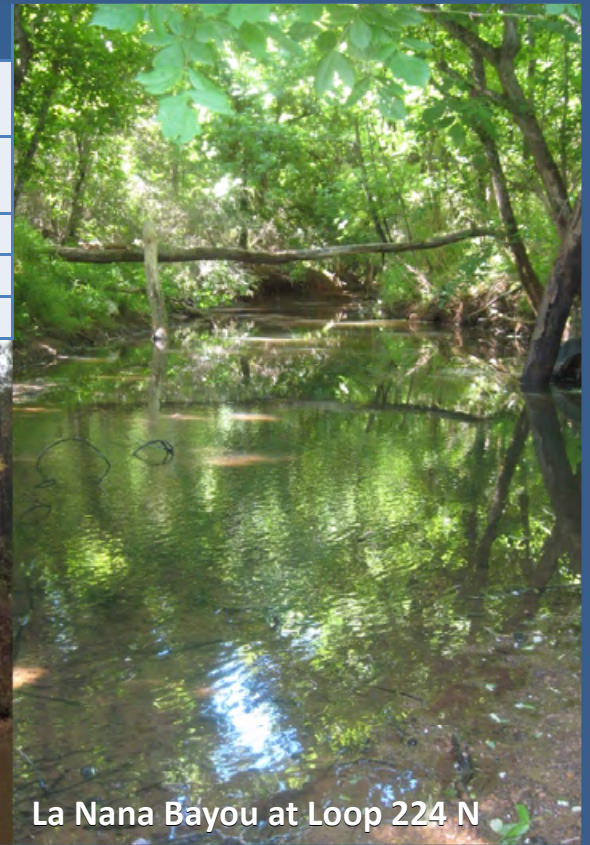
## Segment 0611 Angelina River above Sam Rayburn Reservoir

### Impairments in Segment 0611 (2010 Draft Texas Integrated Report)

Segment	Segment Name	Impairment	Category
0611	Angelina River above Sam Rayburn Reservoir	Bacteria	5b
0611A	East Fork Angelina River	Bacteria	5b
0611B	La Nana Bayou	Bacteria	5b
0611D	West Mud Creek	Bacteria	5b



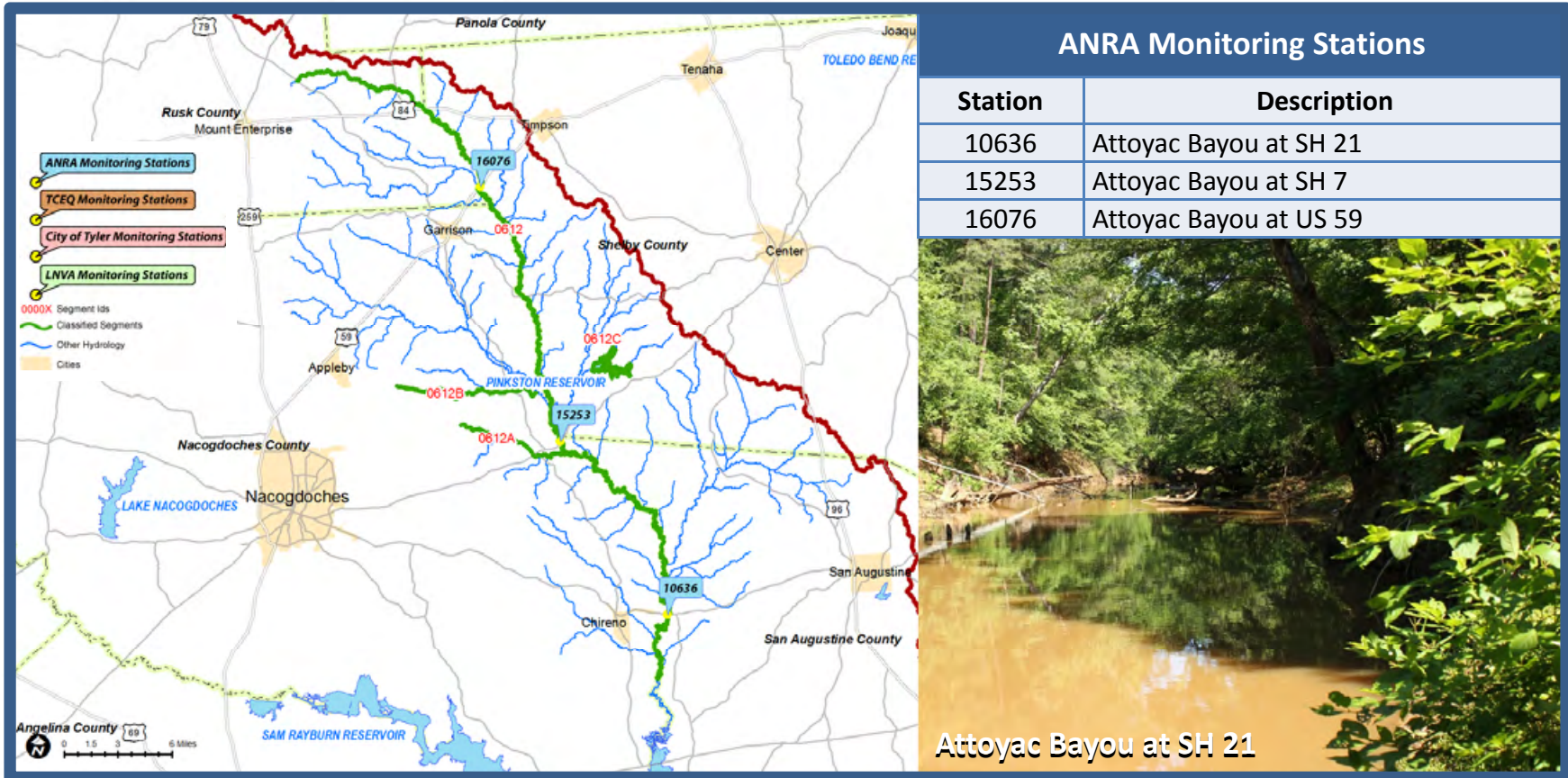
Angelina River at SH 21



La Nana Bayou at Loop 224 N



## Segment 0612 Attoyac Bayou







## Segment 0612 Attoyac Bayou

### Impairments in Segment 0612 (2010 Draft Texas Integrated Report)

Segment	Segment Name	Impairment	Category
0612	Attoyac Bayou	Bacteria	5b



Attoyac Bayou at SH 7



Attoyac Bayou at SH 7



Attoyac Bayou at US 59



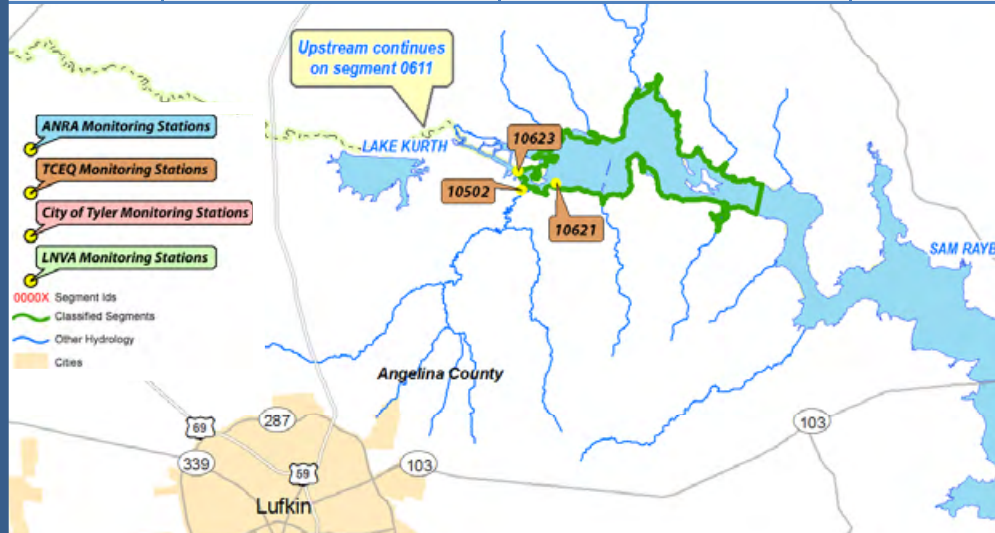
Attoyac Bayou at SH 21



## Segment 0615 Angelina River/Sam Rayburn Reservoir

### Impairments in Segment 0615 (2010 Draft Texas Integrated Report)

Segment	Segment Name	Impairment	Category
0615	Angelina River/ Sam Rayburn Reservoir	Bacteria	5c
		Depressed DO	5c
		Impaired fish community	5c
		Mercury in edible tissue	5c
0615A	Paper Mill Creek	Bacteria	5c



Angelina River near Rivercrest

### ANRA Monitoring Stations

Station	Description
	No ANRA Monitoring Stations on Segment 0615
	Monitoring of this segment is conducted by TCEQ Region 10 - Beaumont





## Updates from the Coordinated Monitoring Meeting

- The Coordinated Monitoring Meeting for the Neches Basin was held on 3/24/11
- The following updates were a result of the meeting:
  - ANRA did not add or remove any sites on the Coordinated Monitoring Schedule (CMS) for FY 12
  - Monitoring stations for the Attoyac Partnership project will be added to the CMS
  - Due to low water levels and site accessibility, a new Station ID will be created on Lake Nacogdoches and existing data will be transferred to the new Station ID
  - The monitoring station at Angelina River at SH 204 (10633) will need to be relocated due to the installation of an effluent discharge outfall from Nacogdoches Power
  - Orthophosphorus has been removed as a parameter for routine monitoring. Total Dissolved Solids may be removed as well.



## Station 10633 - Angelina River at SH 204

- Needs to be relocated due to proximity to the Nacogdoches Power effluent discharge
- An attempt will be made to contact the landowner for permission to sample upstream
- If unable to gain access, it will be necessary to discontinue monitoring at this site



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## TCEQ Nutrient (Nitrogen & Phosphorus) Guidelines for FY 12

- Priority Parameters
  - Total Phosphorus, TKN, and Nitrate+Nitrite-N
  - The ANRA Environmental Laboratory does not currently analyzed for TKN in-house
    - Subcontract to LCRA?
    - Additional equipment and add to NELAC accreditation?
  
- Limits of Quantitation
  - TCEQ is recommending that labs lower the LOQ for Total Phosphorus to 0.02 mg/L
    - LOQ for current method is 0.06 mg/L
    - New equipment will be necessary to reach desired LOQ
      - Flow injection method
      - New method + new technology = NELAC on-site assessment prior to certification



## Additional Resources

- Surface Water Quality Monitoring Procedures Manual
  - Volume 1: Physical and Chemical Monitoring Methods
    - [http://www.tceq.texas.gov/assets/public/comm\\_exec/pubs/rg/rg415/rg-415.pdf](http://www.tceq.texas.gov/assets/public/comm_exec/pubs/rg/rg415/rg-415.pdf)
- Upper Neches Basins Quality Assurance Project Plan (QAPP)
  - [http://www.anra.org/divisions/water\\_quality/crp/pdfs/QAPP/ANRA\\_FY2010-11\\_QAPP.pdf](http://www.anra.org/divisions/water_quality/crp/pdfs/QAPP/ANRA_FY2010-11_QAPP.pdf)
- ANRA CRP Monitoring Activities
  - [http://www.anra.org/divisions/water\\_quality/crp/monitoring.html](http://www.anra.org/divisions/water_quality/crp/monitoring.html)
- Coordinated Monitoring Schedule
  - <http://cms.lcra.org>





## Comments or Questions?

- Please direct inquiries regarding ANRA's Clean Rivers Program to:

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