



# Upper Neches Basin Steering Committee Meeting

June 17, 2021

Please sign in to the meeting here:

[anra.org/scm](https://anra.org/scm)





# Microsoft Teams Tools



## Chat Box & Raise Hand

For questions, please use the chat box or the “raise hand” feature:

- 1.) Click on the Raise Hand button which will place a small hand icon next to your name in the participant list.
- 2.) Click on the Lower Hand button to withdraw the request.

## Audio problems?

Dial in: 1 430-247-5188-United States, Tyler  
Phone Conference ID: 735 591 196#



## Meet the Presenters:



**Carla Ethridge**  
*Clean Rivers Program Manager*  
Angelina & Neches River Authority



**Anna Gitter**  
*Research Assistant*  
Texas Water Resources Institute



**Emily Monroe**  
*Extension Program Specialist*  
Texas Water Resources Institute



**Narayanan Kannan, Ph.D.**  
*Research Scientist*  
Texas Institute for Applied Environmental Research



**Sean Willis**  
*Wildlife Biologist*  
Texas Parks and Wildlife Department



**Kyle Wright**  
*State Water Quality Specialist*  
Natural Resources Conservation Service



# Agenda

- **Welcome and Introductions**
- **Overview of the Clean Rivers Program—Angelina & Neches River Authority**
- **Updates to ANRA's Water Quality Monitoring Program and the 2021 Basin Highlights Report—Angelina & Neches River Authority**
- **Project Updates:**
  - **Angelina River Watershed Characterization—Texas Water Resources Institute**
  - **Middle Neches TMDL/I-Plan Development—Texas Water Resources Institute**
  - **Attoyac Bayou Watershed On-site Sewage Facility Repair and Replacement—Texas Water Resources Institute**
  - **Attoyac Bayou BMP Effectiveness Monitoring—Texas Water Resources Institute**
  - **La Nana Bayou WPP Development Project Update—Texas Water Resources Institute**
  - **Kickapoo Creek WPP Development Project Update—Texas Institute for Applied Environmental Research**
- **Guest Speakers:**
  - **Feral Hog Management in Relation to Water Quality—Texas Parks and Wildlife Department**
  - **Best Management Practices for Water Quality—Natural Resources Conservation Service**
- **Open Discussion for Steering Committee Member Recommendations and Concerns**

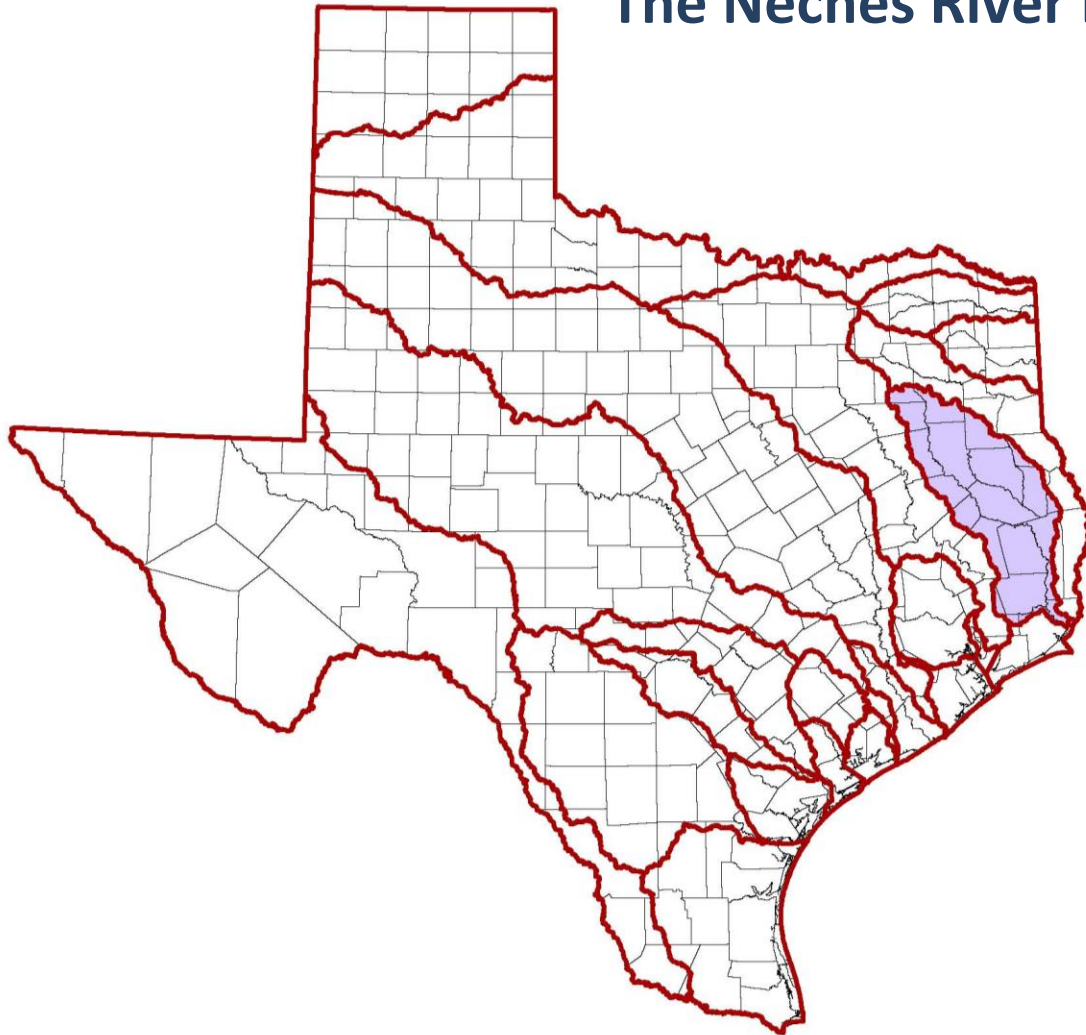




# **ANRA's Functions in the Neches Basin**



## The Neches River Basin



**ANRA's Jurisdictional Service Area includes all or a portion of the following 17 counties:**

Van Zandt  
Smith  
Henderson  
Newton  
Cherokee  
Anderson  
Rusk  
Houston  
Nacogdoches

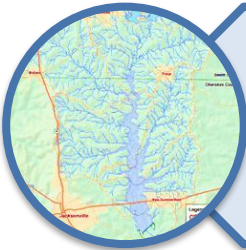
San Augustine  
Shelby  
Angelina  
Trinity  
Sabine  
Polk  
Jasper  
Orange



## **ANRA's General Administration**



**Coordinate with  
Governments/Entities**



**Water Resource Planning and Development**



**Economic Development  
Bond Issuance**



## **ANRA's Field Operations Division**



**Regional Wastewater Treatment Facilities  
and Contract Operations**



**Drinking Water Utilities**



**Biosolids Composting  
Neches Compost Facility**





## ANRA's Environmental Division



**Clean Rivers Program**  
Water Quality Monitoring



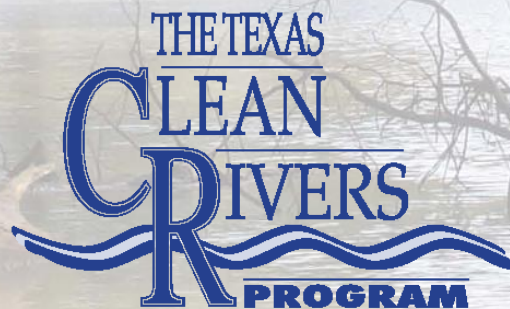
**Environmental Laboratory**  
Drinking Water, Surface Water, and  
Wastewater Testing



**On-Site Sewage Facilities Program**  
OSSF Permitting & Investigations



# An Overview of the Texas Clean Rivers Program







Ayish at W. Columbia Street In City of San Augustine

## The Texas Clean Rivers Program (CRP)

- Established in 1991 by the 72<sup>nd</sup> Texas Legislative Session (SB 818)
- Purpose is to monitor the waters of the state and maintain and/or improve water quality
- Partially funded by fees on wastewater discharge and water rights permits
- Collaboration of the Texas Commission on Environmental Quality (TCEQ) and 15 partner agencies
- Emphasis on the collection of water quality data for assessment and regulatory purposes

<http://www.tceq.texas.gov/waterquality/clean-rivers>





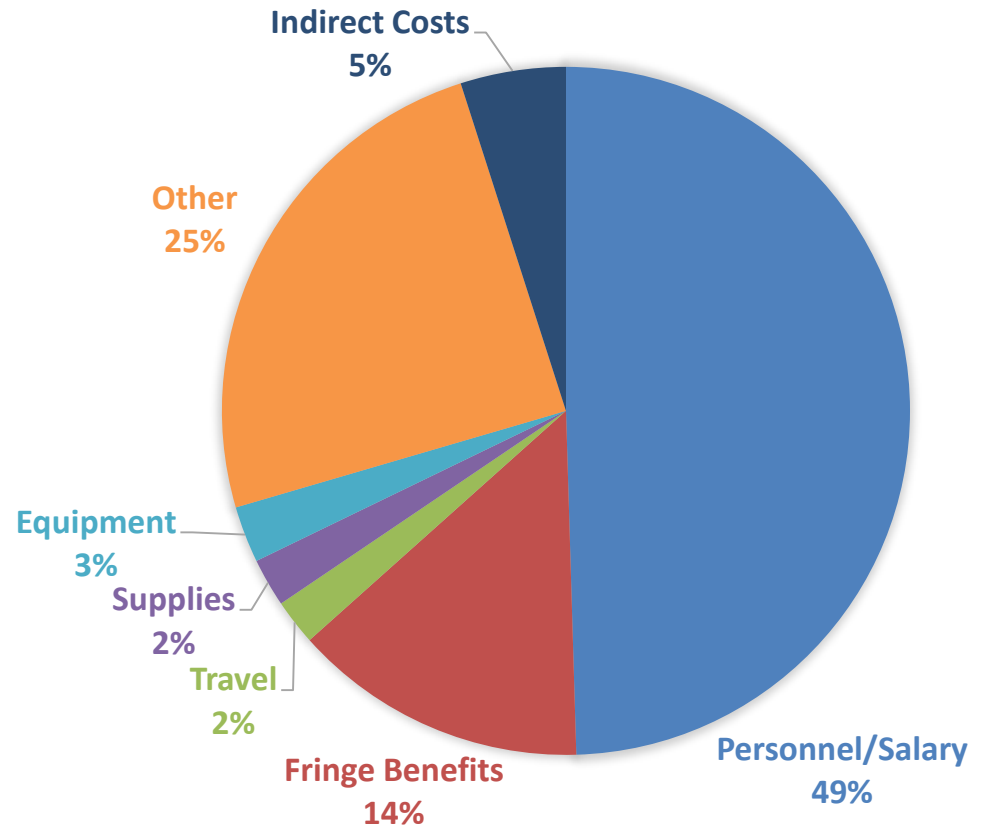
## FY 2020-2021 Budget Allocations

Planning Agency	FY 2020	FY 2021	Total Allocation
BRA (12)	\$3,981,590.00	\$398,159.00	\$796,318.00
GBRA (17 & 18)	\$1,353,781.00	\$135,378.00	\$270,756.00
HGAC (9, 10, 11, 13)	\$965,615.00	\$965,615.00	\$1,931,230.00
IBWC (23)	\$267,252.00	\$267,252.00	\$534,504.00
LNRA (16)	\$99,298.00	\$99,298.00	\$198,596.00
LCRA (14 & 15)	\$381,797.00	\$381,797.00	\$763,594.00
ANRA & LNVA (6 & 7)	\$329,766.00	\$329,766.00	\$659,532.00
NETMWD (4)	\$99,298.00	\$99,298.00	\$198,596.00
NRA (20, 21, & 22)	\$258,906.00	\$258,906.00	\$517,812.00
RRA (1 & 2)	\$311,118.00	\$311,118.00	\$622,236.00
SARA (19)	\$197,770.00	\$197,770.00	\$395,540.00
SRA (5)	\$313,074.00	\$313,074.00	\$626,148.00
SRBA (3)	\$99,297.00	\$99,297.00	\$198,594.00
TRA (8)	\$393,272.00	\$393,272.00	\$786,544.00
TOTALS	\$4,250,000.00	\$4,250,000.00	\$8,500,000.00



## ANRA Clean Rivers Program Budget by Category

FY 2018- FY 2021 Clean Rivers Program Budget	
Budget Category	Approved Budget
Personnel/Salary	\$400,899.26
Fringe Benefits	\$112,251.80
Travel	\$17,411.87
Supplies	\$18,419.13
Equipment	\$21,500.00
Contractual	\$0.00
Construction	\$0.00
Other	\$198,960.00
Indirect Costs	\$40,089.94
<b>Total Reimbursable Costs</b>	<b>\$809,532.00</b>





# **Updates to ANRA's Water Quality Monitoring Program and the 2021 Basin Highlights Report**

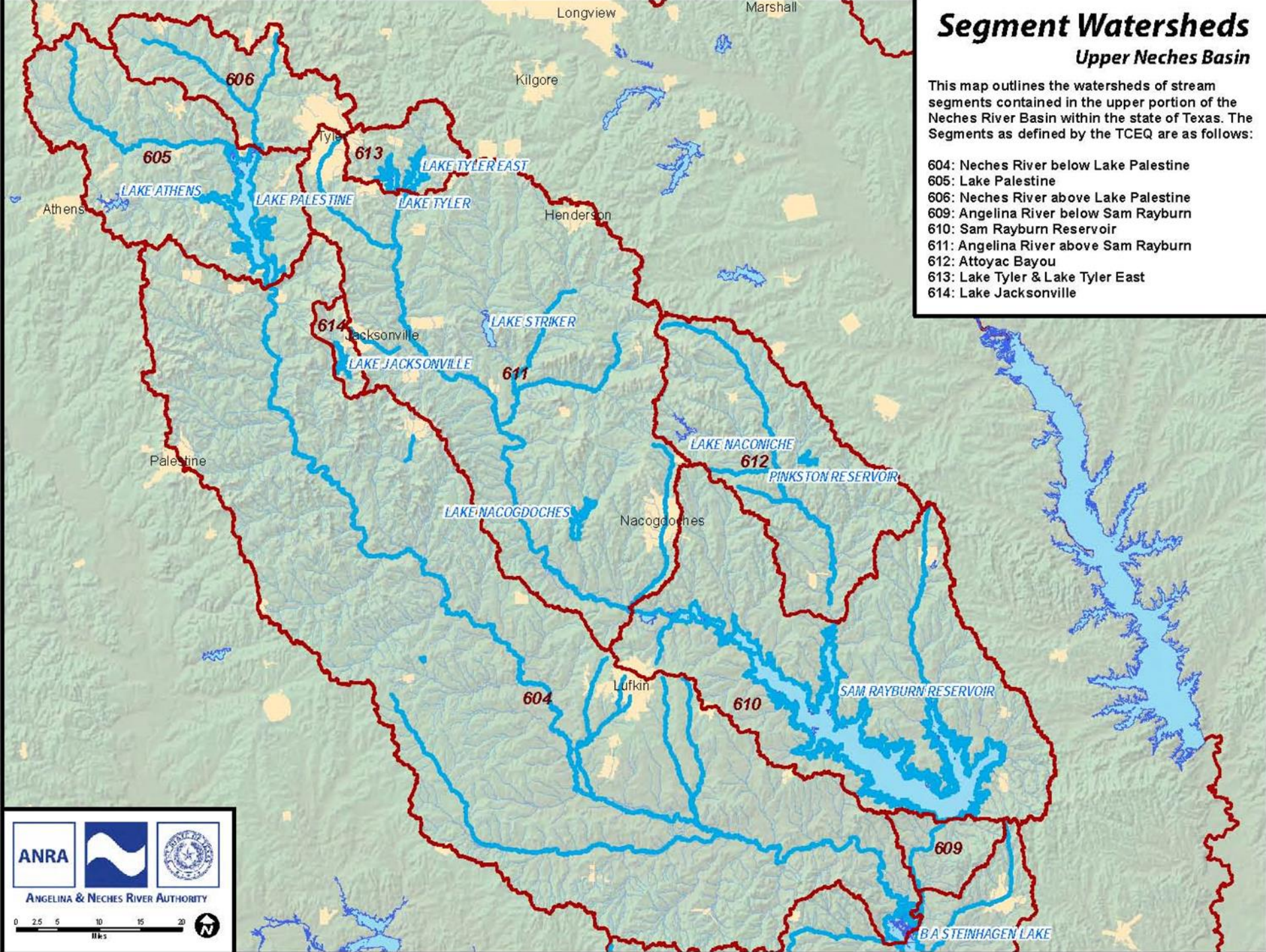


# Segment Watersheds

## 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



ANRA



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0 2.5 5 10 15 20  
miles







## FY 2022 Water Quality Monitoring in the Neches Basin

- Currently, ANRA monitors 37 sites quarterly for field parameters, conventional parameters, and bacteria.
- Additional monitoring in the Upper Neches Basin is performed by TCEQ (Region 5 in Tyler and Region 10 in Beaumont), Stephen F. Austin State University (SFASU), Texas Institute for Applied Environmental Research (TIAER), as well as the Lower Neches Valley Authority (LNVA).

FY 2022 Monitoring Stations in the Neches Basin	
<i>Sampling Entity</i>	<i>Number of Monitoring Sites</i>
ANRA	42
TCEQ-Region 5	45
TCEQ-Region 10	23
LNVA	24
SFASU	5
TIAER	9



# FY 2022 Water Quality Monitoring in the Neches Basin

## Parameters Collected:

### Field:

Dissolved Oxygen  
Days Since Last Significant Rainfall  
Water Temperature  
Flow Severity  
Instantaneous Stream Flow  
pH  
Present Weather  
Secchi Transparency  
Specific Conductivity  
Total Water Depth

### Conventional:

Ammonia-N  
Chloride  
Chlorophyll-*a*  
Total Kjeldahl Nitrogen (TKN)  
Nitrate-N  
Nitrite-N  
Pheophytin-*a*  
Sulfate  
Total Phosphorus  
Total Suspended Solids (TSS)

### Bacteriological:

*Escherichia Coli (E.coli)*

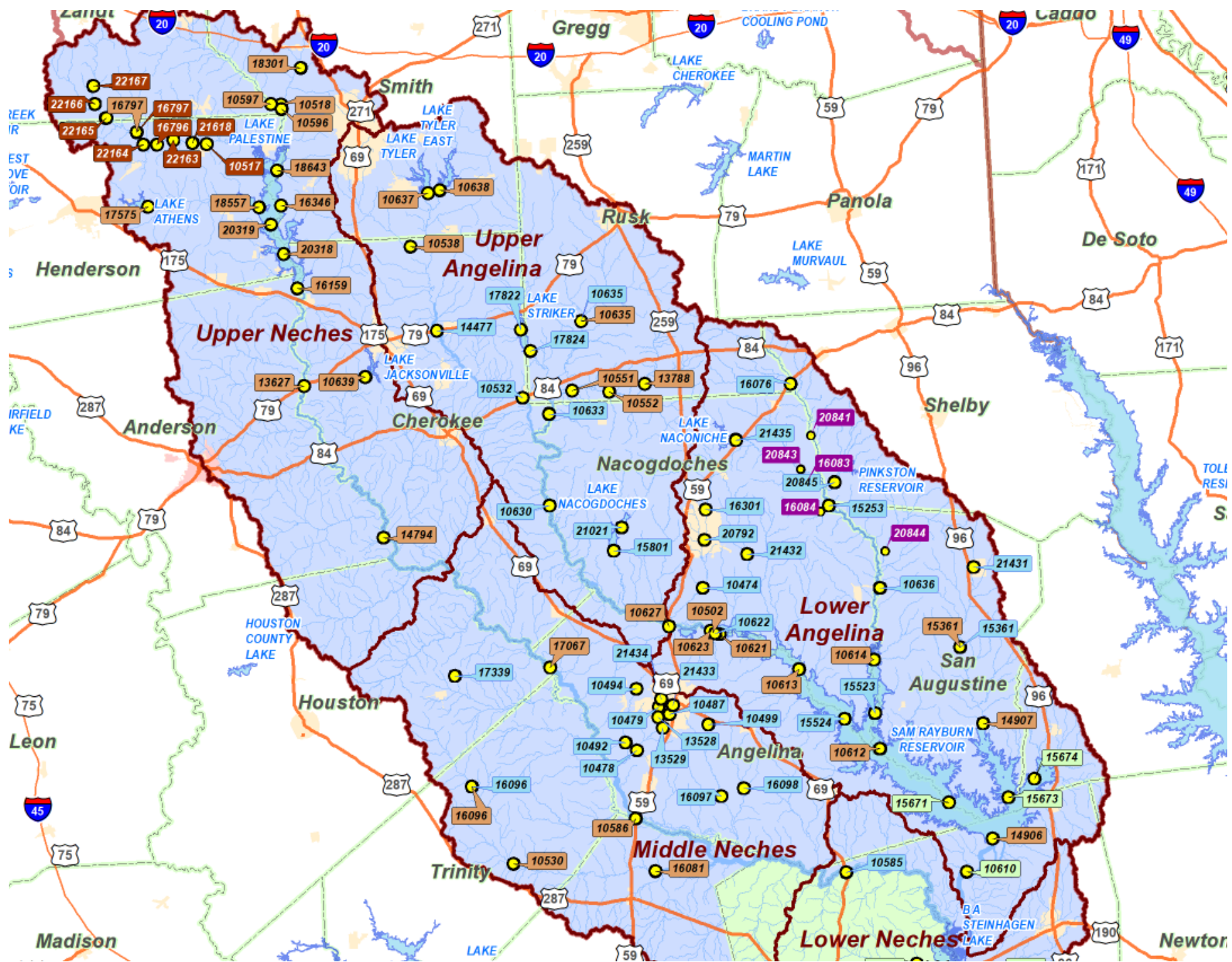
In general, historical and current water quality data of the Neches River Basin include impairments and concerns for the following parameters:

Elevated bacteria levels  
Depressed dissolved oxygen  
Mercury and Dioxin in edible fish tissue  
Concerns for Nutrient levels

The Coordinated Monitoring Schedule  
(CMS) is available online at:

[cms.lcra.org](https://cms.lcra.org)







## FY 2022 Water Quality Monitoring Changes

- ANRA is now certified to run Chlorophyll-a and Pheophytin samples in-house.
- ANRA is working on bringing in the TKN analysis in house to control costs incurred due to outsourcing.
- ANRA has completed the two-year, targeted 24-hour Dissolved Oxygen monitoring at two stations in the basin. Stations were located on Biloxi Creek and the Riverine Portion of Sam Rayburn Reservoir.
- ANRA will be adding another two-year, targeted 24-hour Dissolved Oxygen monitoring station to the sampling locations for FY 2022. The monitoring will be located on Cedar Creek in Lufkin.

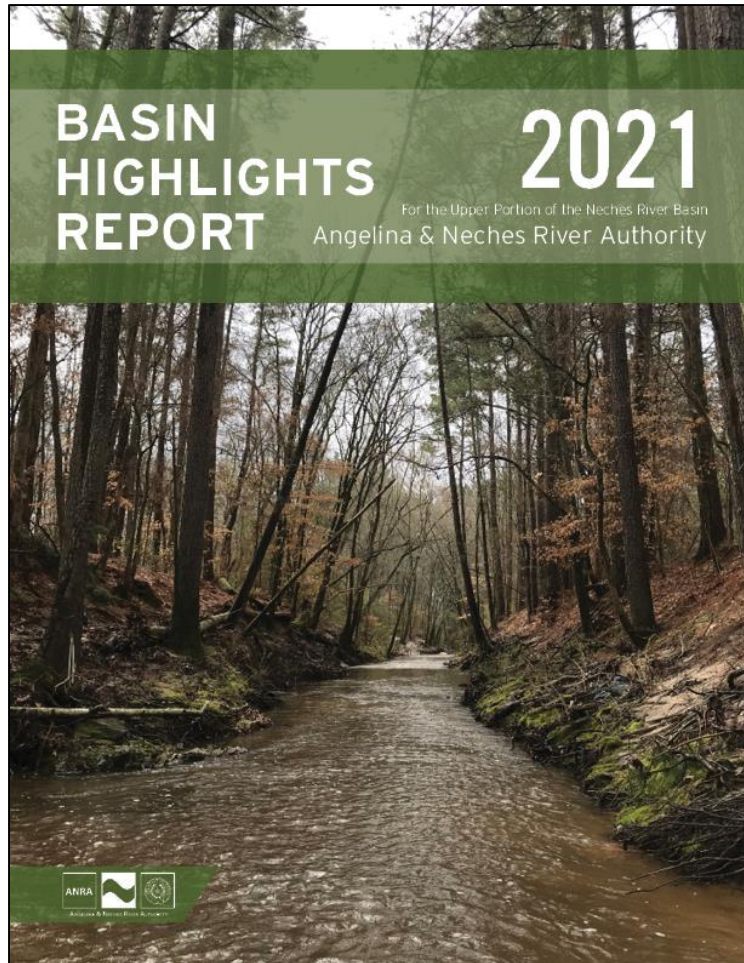
## ANRA's Water Quality Monitoring in the Neches Basin for FY 2022

Site Description	AU	Station ID	Comments
Neches at US 69	0604_01	10585	
Cedar at FM 2497	0604A_02	10478	
Cedar at FM 1336	0604A_02	13528	
Cedar at Loop 287	0604A_03	10479	24-Hour Dissolved Oxygen Monitoring
Cedar at Ellis	0604A_03	21434	
Hurricane at Loop 287	0604B_01	10487	
Hurricane at SH 324	0604B_01	13529	
Hurricane below Kiwanis Park	0604B_02	21433	
Jack at FM 2497	0604C_01	10492	
Jack at FM 3150	0604C_01	10494	
Piney at FM 358	0604D_02	16096	
Biloxi at FM 1818	0604M_02	16097	
Biloxi at CR 216	0604M_03	10499	
Buck at FM 1818	0604N_01	16098	
Lake Ratcliff	0604T_01	17339	
Sam Rayburn near Shirley Creek	0610_04	15524	
Sam Rayburn at Alligator Cove	0610_05	15523	
Ayish at SH 103	0610A_01	15361	
Ayish at Columbia St	0610A_02	21431	
Carrizo at SH 21	0610P_01	21432	
Angelina at SH 21	0611_02	10630	
Angelina at SH 204	0611_03	10633	
Angelina at FM 1798	0611_04	10635	
La Nana at CR 526	0611B_01	10474	
La Nana at East Main	0611B_02	20792	
La Nana at Loop 224 North	0611B_03	16301	
Mud at US 84	0611C_01	10532	
Mud at US 79	0611C_02	14477	
Lake Nacogdoches Main Pool	0611Q_01	15801	
Lake Nacogdoches Upper Lake	0611Q_01	21021	
Lake Striker Upper Lake	0611R_01	17822	
Lake Striker Main Pool	0611R_01	17824	
Attoyac at SH 21	0612_01	10636	
Attoyac at SH 7	0612_02	15253	
Attoyac at US 59	0612_03	16076	
West Creek	0612F_01	20845	
Lake Naconiche Main Pool	0612G_01	21435	





## 2021 Upper Neches Basin Highlights Report



### ANRA Hosts Stream Cleanups

ANRA has partnered with local organizations to clean up streams in the Neches River Basin, starting with, Angelina County. Three stream cleanups have been hosted thus far, each taking place on Hurricane Creek (Segment 0604B). Pickup & Picnic was the first stream cleanup event, held in June of 2020. This event was a partnership between ANRA, the Young Professionals Network (YPN), and Angelina Beautiful/Clean (A/B/C). About a dozen volunteers gathered at Kiwanis Park, ANRA's CRP monitoring site 21433. The second stream cleanup, held in September of 2020, was also a partnership with YPN and A/B/C. It was held at Grace Dunne Richardson Park, upstream of ANRA CRP monitoring site 10487, and thirteen volunteers were in attendance. In November of 2020, ANRA partnered with Lufkin High School's Science Technology Engineering and Math (STEM) Students as well as A/B/C to host its third stream clean up event. sixteen volunteers gathered at Hurricane Creek at US 59. This portion of the stream is located between CRP monitoring stations 21433 and 10487. As a result of these stream cleanup events, ANRA, its partners, and about forty one volunteers have successfully removed approximately fifty three bags of trash, six tires, and various other objects out of Hurricane Creek this year. ANRA plans to participate in and host a stream cleanup event quarterly.

### PUBLIC INVOLVEMENT



Hurricane Creek at Grace Dunne Richardson Park



Volunteers- Hurricane Creek at Grace Dunne Richardson Park



Volunteers- Hurricane Creek at Kiwanis Park

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STEM Students-Hurricane at US 59

[https://www.anra.org/divisions/water\\_quality/crp/reports.html](https://www.anra.org/divisions/water_quality/crp/reports.html)

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## 2021 Upper Neches Basin Highlights Report

The 2021 Upper Neches Basin Highlights Report provides an overview of water quality activities and water quality related issues for the Upper Neches River Basin for the previous year.

This year's highlights include:

- New field monitoring equipment for surface water quality monitoring
- ANRA Laboratory brings Chlorophyll-a and Pheophytin analyses in-house
- Special Projects in the Basin
- ANRA's Public Involvement
- Endangered Species Awareness Campaign





# 2021 Upper Neches Basin Highlights Report

## ANRA's New Field Monitoring Equipment

- Purchased for the Angelina Watershed Characterization Project
  - Project goals:
    - Evaluate existing water quality and watershed data
    - Identify and characterize potential sources of pollution in the watershed
- Allows ANRA staff to safely collect flow data in streams where it normally isn't collected due to accessibility issues
- Reduces the need to conduct flow estimates
- Gives ANRA staff the ability to develop a profile of the stream bed using GPS and bottom track technology
- Implemented into routine monitoring in December of 2020

*Partnership between the Angelina & Neches River Authority, Texas Water Resources Institute, and the Texas State Soil and Water Conservation Board (TSSWCB) and is funded by the TSSWCB through a Clean Water Act, Section 319(h) grant from the U.S. EPA.*







## 2021 Upper Neches Basin Highlights Report

### ANRA Laboratory Brings Chlorophyll-a and Pheophytin Analyses In-House

- Equipment purchased through the Clean Rivers Program
- Allows ANRA staff to run analyses in-house to offset costs of outsourcing
- QAPP Amendment was fully executed and distributed to partners in February of 2021





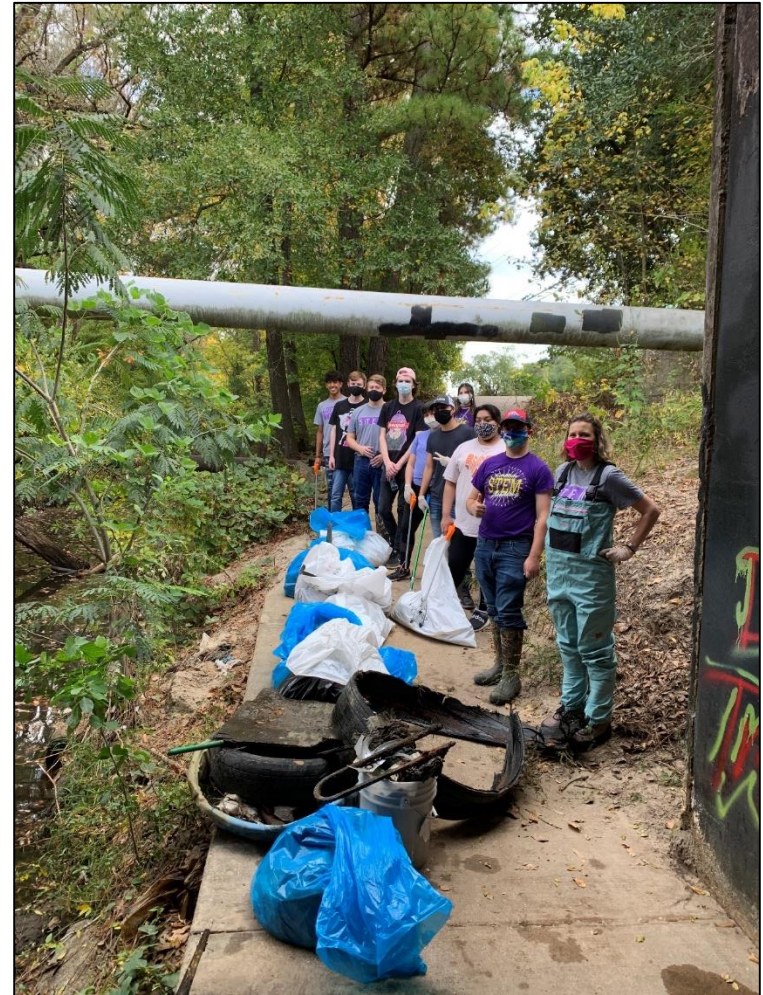
# 2021 Upper Neches Basin Highlights Report

## ANRA's Public Involvement

Although ANRA has always promoted public involvement through numerous operations and departments, in late 2019, a new, dedicated education and outreach program was initiated.

Since the initiation of this program, ANRA has participated in many educational events and activities related to water quality throughout the basin that include:

- Career Day
- Increased Texas Stream Team Involvement
  - ANRA partnered with San Marcos River Rangers to host a training in Lufkin
  - ANRA Staff becomes a Certified Trainer
- Stream Cleanup Events
  - 3 events on Hurricane Creek

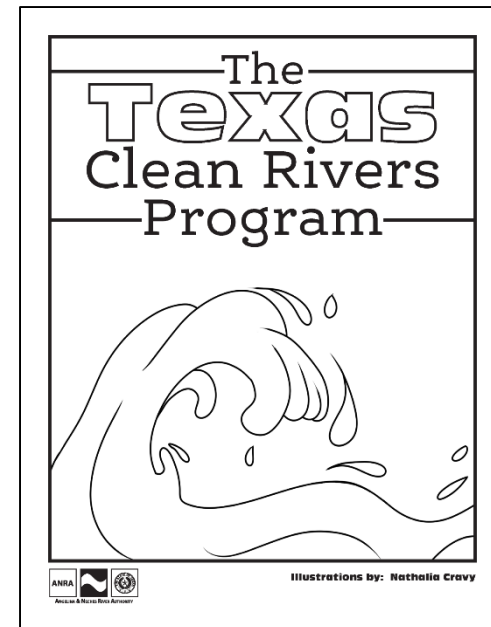
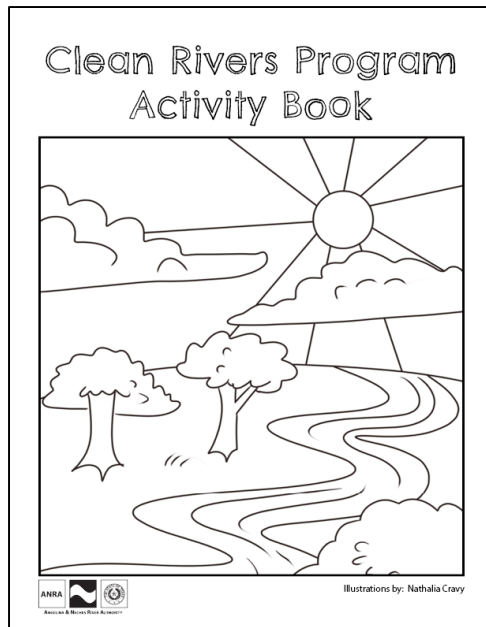




# 2021 Upper Neches Basin Highlights Report

## ANRA's Public Involvement

- Education and Outreach Materials
  - *Clean Rivers Program Activity Book*
    - Recommended for Elementary School classrooms
    - Fun and interactive way to learn about water quality
  - *Texas Clean Rivers Program*
    - Recommended for Middle School classrooms
    - Provides education on ANRA's Clean Rivers Program







# 2021 Upper Neches Basin Highlights Report

## Alligator Snapping Turtle Awareness Campaign

- The purpose of this project is to raise awareness of the listing status of the Alligator Snapping Turtle
- Strategically placed 20 awareness signs at boat ramps throughout the Neches River Basin- completed sign placement in December of 2020
- Data is reported to the East Texas Species of Concern database
- Partnership between ANRA and the Texas Parks and Wildlife Department

**HAVE YOU SEEN THIS TURTLE?**





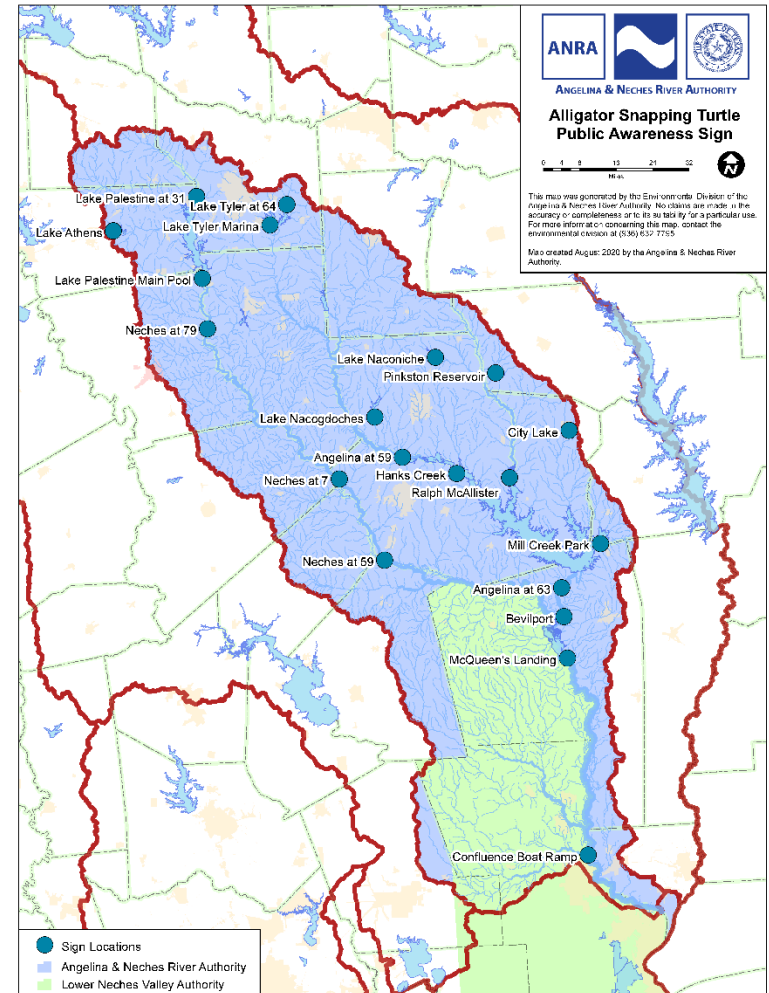
Alligator snapping turtles are a threatened species and protected in Texas. We are asking for help reporting sightings of these turtles. Alligator snapping turtles have a large triangular head and three distinct ridges on their shell.

IT IS ILLEGAL TO INTENTIONALLY KILL, INJURE, OR HARASS THESE TURTLES.

If you accidentally catch one, it should be returned to its habitat, as close as possible to the spot where it was caught.

Report alligator snapping turtle sightings (live or dead) along with a photo, GPS coordinates, and any measurements to the Angelina & Neches River Authority at: [wildlife@anra.org](mailto:wildlife@anra.org)

[www.anra.org](http://www.anra.org) [tpwd.texas.gov](http://tpwd.texas.gov)





## Additional Resources

- Texas Commission on Environmental Quality Clean Rivers Program
  - <http://www.texascleanrivers.org>
- Surface Water Quality Monitoring Procedures Manual
  - [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 Basin Quality Assurance Project Plan (QAPP)
  - [https://www.anra.org/divisions/water\\_quality/crp/pdfs/QAPP/ANRA\\_FY\\_2021\\_CRP\\_QAPP\\_FINAL.pdf](https://www.anra.org/divisions/water_quality/crp/pdfs/QAPP/ANRA_FY_2021_CRP_QAPP_FINAL.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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*Clean Rivers Program Manager*

Angelina & Neches River Authority

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