

July 2020

# CLEAN RIVERS PROGRAM UPDATE

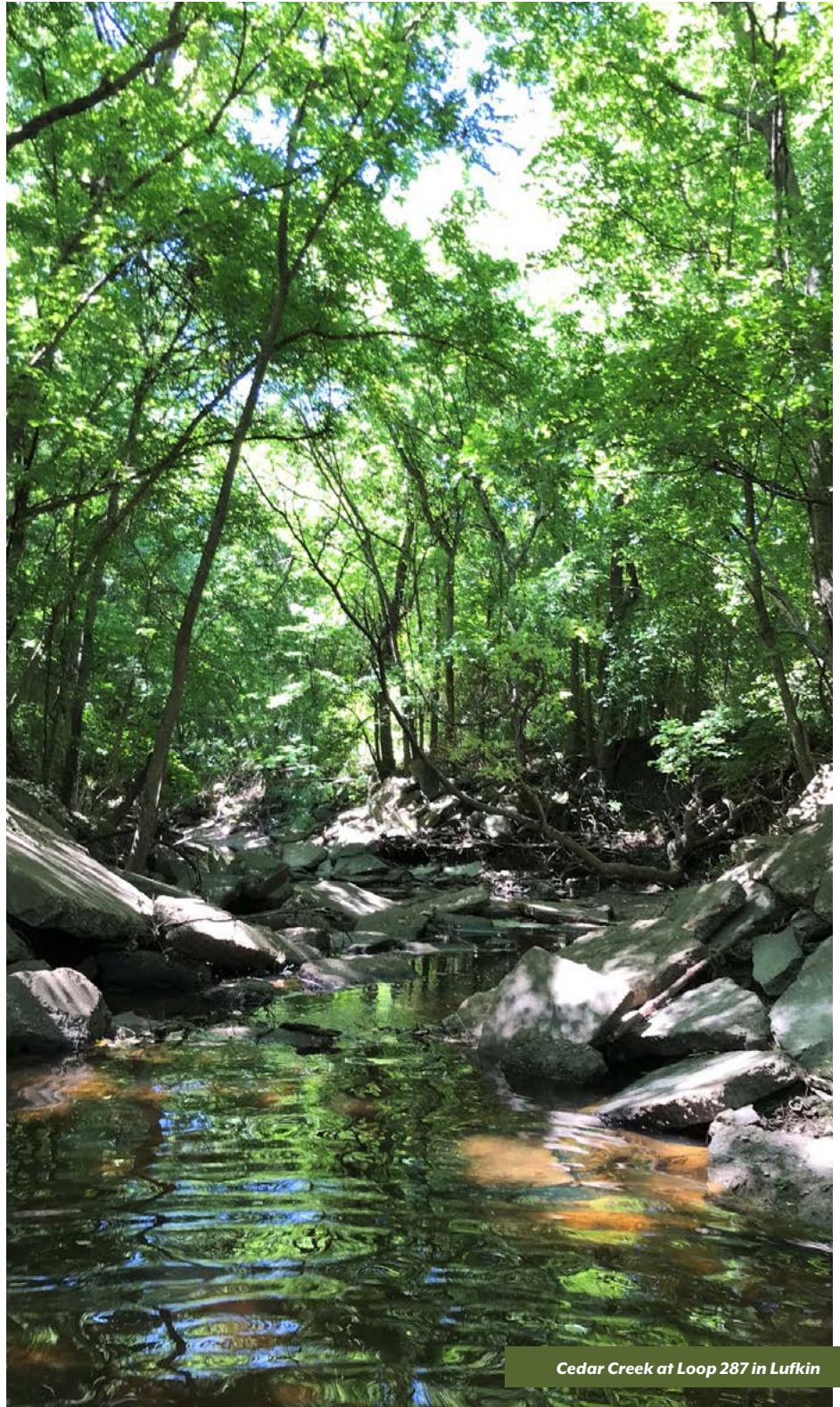
*For the Stakeholders in the Neches River Basin*

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ANGELINA & NECHES RIVER AUTHORITY



Cedar Creek at Loop 287 in Lufkin

Angelina & Neches River Authority

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## Introduction

Even in difficult times, water quality remains important. The Angelina & Neches River Authority has been working hard to accomplish the many water quality goals set for this fiscal year. ANRA's Clean Rivers Program, in partnership with the Texas Commission on Environmental Quality and the Lower Neches Valley Authority, monitor surface water quality throughout the Neches River basin. The data collected at these stations is used in analyses to further develop the understanding of water quality in the basin, which can aid regulatory agencies in the decision making process. The goal of CRP is to maintain and improve the quality of water resources within each river basin in Texas through ongoing partnerships with other agencies, river authorities, regional entities, local governments, industries, and citizens.

Since we cannot meet in person this year, we have put together this newsletter to keep you, our stakeholders, informed and involved. This newsletter serves as a brief update on water quality within the Neches River Basin. We welcome your input, and hope you find the information presented here helpful and informative.

## List of Acronyms

<b>ANRA</b>	Angelina & Neches River Authority
<b>BMP</b>	Best Management Practice
<b>CRP</b>	Clean Rivers Program
<b>eDNA</b>	Environmental DNA
<b>EPA</b>	Environmental Protection Agency
<b>ESA</b>	Endangered Species Act
<b>LNVA</b>	Lower Neches Valley Authority
<b>NELAP</b>	National Environmental Laboratory Accreditation Program
<b>NMFS</b>	National Marine Fisheries Service
<b>NRCS</b>	Natural Resources Conservation Service
<b>OSSF</b>	On-Site Sewage Facility
<b>SFASU</b>	Stephen F. Austin State University
<b>SSA</b>	Species Status Assessment
<b>TCEQ</b>	Texas Commission on Environmental Quality
<b>TIAER</b>	Texas Institute for Applied Environmental
<b>TMDL</b>	Total Maximum Daily Load
<b>TPWD</b>	Texas Parks and Wildlife Department
<b>TSSWCB</b>	Texas State Soil and Water Conservation Board
<b>TWDB</b>	Texas Water Development Board
<b>TWRI</b>	Texas Water Resources Institute
<b>USFWS</b>	United States Fish and Wildlife Service
<b>WPP</b>	Watershed Protection Plan

## Fiscal Year 2020 Coordinated Monitoring Meeting

The purpose of the Coordinated Monitoring Meeting is to allow organizations conducting water quality monitoring in the basin to corroboratively identify water quality monitoring needs in the basin and appropriately address those needs. The meeting allows better allocation of resources and minimize duplication of effort. Based upon the results of this meeting, the organizations are able to establish their monitoring plan for the upcoming fiscal year.

The FY 2020 Coordinated Monitoring Meeting was held on April 21, 2020 via Webex Conference. Representatives attended the meeting from ANRA, LNVA, TCEQ Region 5 (Tyler), TCEQ Region 10 (Beaumont), TCEQ Central Office (Austin), Texas Institute for Applied Environmental Research, and Texas Water Resources Institute.

## Monitoring Changes for FY 2021

Based upon the discussion at the FY 2020 Coordinated Monitoring Meeting, ANRA is not planning to make any changes to the coordinated monitoring schedule for FY 2021.

## Fiscal Year 2020 Steering Committee Meeting

### Public Participation

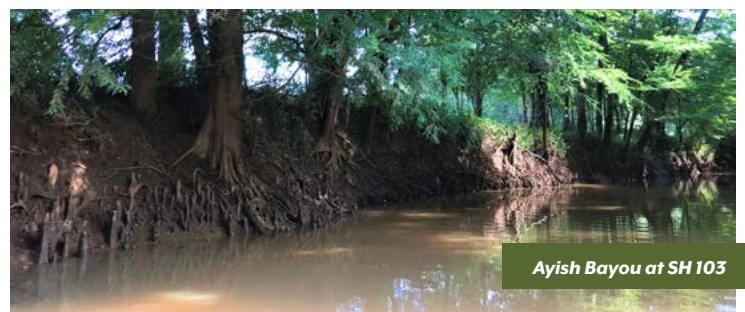
Participation by stakeholders and Steering Committee members are crucial for the success of the Clean Rivers Program. The Steering Committee serves as the focus for public input into ANRA's surface water quality monitoring program. The committee assists ANRA with the:

- Creation of specific and achievable water quality objectives and basin priorities,
- Review, development, and approval of major reports (such as the Basin Highlights Report and the Basin Summary Report),
- Establishment of monitoring priorities and the development of ANRA's monitoring plan,
- Identification of priority problem areas and possible actions to address these problems and sources of pollution.

Every year, ANRA holds an Upper Neches Basin Steering Committee Meeting. Historically, this meeting has been held in April or May of each year. Unfortunately, the unforeseen COVID-19 outbreak in March caused a shift in stakeholder meeting styles, in which an in-person Steering Committee Meeting could not be held. Upon consultation with the TCEQ's CRP Project Manager, ANRA personnel hosted an online meeting via Webex on July 23, 2020.

Please visit our website to view meeting materials and a recording of the meeting:

[https://www.anra.org/divisions/water\\_quality/crp/meetings\\_and\\_events.html](https://www.anra.org/divisions/water_quality/crp/meetings_and_events.html)



Ayish Bayou at SH 103

# BASIN SUMMARY REPORT

# 2020

For the Upper Portion of the Neches River Basin  
Angelina & Neches River Authority



## **The 2020 Basin Summary Report is Now Available**

The Angelina & Neches River Authority's 2020 Basin Summary Report, assembled every third biennium, provides a comprehensive review of water quality data and water quality related issues for the Upper Neches River Basin. The report serves to develop a greater understanding of water quality within the basin, which can be used to aid regulatory agencies in decision-making.

The report includes descriptions of water quality conditions and issues, trend analysis of water quality by station and parameter, discussion of watershed characteristics, and potential influences on water quality. Recommendations of management strategies for correcting identified water quality impairments are also included in the report.

To determine whether designated uses are supported, water quality parameters are examined and compared to criteria and screening levels as listed in the Texas Surface Water Quality Standards. Assessment data from the 2020 Texas Integrated Report for Clean Water Act Section 305(b) and 303(d) was used in this report.

The 2020 Basin Summary Report was prepared by the Angelina & Neches River Authority in cooperation with the Texas Commission on Environmental Quality under the authorization of the Texas Clean Rivers Act.

### ***Significant Findings***

In general, historical and current water quality data of the Neches River basin included elevated bacteria levels, depressed dissolved oxygen, and dioxin and mercury in edible fish tissue. Data analysis displayed several trends regarding nutrients that may be cause for concern in the future. However, there are several segments, tributaries, and reservoirs within the basin that are fully supporting their designated uses.

### ***Obtaining a Copy of the 2020 Basin Summary Report***

The 2020 Basin Summary Report for the Upper Portion of the Neches River Basin is available for download on ANRA's website at [https://www.anra.org/divisions/water\\_quality/crp/reports.html](https://www.anra.org/divisions/water_quality/crp/reports.html).

A print version of the report can be requested by contacting the Angelina & Neches River Authority at 936-632-7795 or by emailing a request to [crp@anra.org](mailto:crp@anra.org).



## Updates on Special Projects in the Basin



### ***Attoyac Bayou Watershed Protection Plan Implementation-OSSF Remediation***

This project began in September of 2019, and is intended to run through August of 2021. The goals of this project are to reduce *E.coli*. loadings through OSSF repair and replacement, promote proper OSSF functions, and repair or replace at least 15 failing systems. There have been more than 40 systems replaced in the watershed thus far when taking in account previous projects. This project will continue repairing and replacing failing or non-existent OSSFs in the Attoyac Bayou watershed while providing educational literature and events to the people of the watershed, and further cementing the data standardization and collaboration between permitting authorities. The project is funded by TCEQ through a Clean Water Act Section 319 Grant, and depending on repair vs replacement ratios should have enough funds to repair or replace an additional 20 OSSFs. If you or someone you know lives in the Attoyac Bayou watershed and needs assistance with an OSSF issue, please contact Pineywoods RC&D at 936-568-0414 or pineywoodsrgcd@att.net for more information.

### ***Attoyac Bayou Watershed Protection Plan Implementation Effectiveness Monitoring and Facilitation Continuation***

Work continues in the watershed to implement BMPs and replace OSSFs, and it is important to continue assessing the quality of the water, as well as continue educational efforts. The project will collect 22 additional months of data with sampling starting in September of 2019.

The goals of this project are:

- To facilitate and support effective implementation of the Attoyac Bayou WPP
- To provide updates on implementation progress, keep stakeholders engaged and seek input on future implementation activities
- To support future funding acquisition, track management implementation, and encourage BMP adoption
- Evaluate progress made toward achieving WPP implementation milestones
- Coordinate and conduct relevant outreach and education activities in and around the watershed
- Monitor water quality in the Attoyac Bayou watershed to show BMP implementation effectiveness

This project is ongoing, with monitoring being conducted at five sites monthly by SFASU. Education and outreach programs have been conducted in and around the watershed.

This project is funded by the Texas State Soil and Water Conservation Board (TSSWCB) with State Nonpoint Source Grant program funding.

### ***Lower Neches Tributary TMDL Project***

ANRA is working with, LNVA, TCEQ and TWRI to assess local water quality impairments in Polk, Tyler, Jasper, Hardin, Liberty, Jefferson and Orange Counties (Neches River Tidal, Sandy Creek, Wolf Creek, and Hillebrandt Bayou) and will implement an approach to address the multiple bacteria impairments within the Lower Neches River and Hillebrandt Bayou watersheds. Project goals include characterizing past and current watershed conditions to describe the potential contributors for bacteria pollution in the watershed, and delivering general education and outreach throughout the watershed to raise awareness about water quality and engage stakeholders on options for addressing water quality issues. This project began in September of 2018. Once data collection is completed, analysis will begin, and stakeholder meetings will be held to present findings and begin deciding on future steps to address the bacterial impairments.

### ***Middle Neches Tributary TMDL Project (Jack, Hurricane, Cedar, Biloxi)***

This project is a partnership of TCEQ, TWRI, and ANRA. It will assess local water quality impairments in Angelina County (Biloxi, Cedar, Hurricane and Jack Creeks) and will work with stakeholders to implement an approach to address the multiple bacteria impairments within the tributaries of the Neches River below Lake Palestine. Project goals include characterizing past and current watershed conditions to describe the potential contributors for bacteria pollution in the watershed, conducting supplemental water quality monitoring at eight existing CRP sites to further define current water quality conditions, and delivering general education and outreach throughout the watershed to raise awareness about water quality and engage stakeholders on options for addressing water quality issues. This project began in September of 2018. Routine water quality monitoring was performed from December of 2018 until June of 2019. Analysis has begun, and initial stakeholder meetings have been held to present findings and begin deciding on future steps to address the bacterial impairments.

### ***Angelina Watershed Characterization***

This project is a partnership between TSSWCB, TWRI, and ANRA. The goal for this project was to evaluate existing water quality and watershed data to identify and characterize potential sources of pollution in the watershed. The project began in May of 2017 and was originally intended to be closed out in April of 2019, but was extended to February of 2021 to enable some additional targeted monitoring on Mud and West Mud Creeks. TWRI and ANRA originally collected monthly water quality samples from March 2018 to February 2019 at nine sites. Routine field parameters were collected and water samples were analyzed for *E. coli* bacteria, Ammonia-N, Nitrate-N, Nitrite-N, sulfate, chloride, total phosphorus, and total suspended solids by ANRA's Environmental Laboratory. Monitoring data collected was combined with existing water quality data and characterization is currently underway to describe watershed conditions. There is an extension in place for this project enabling an additional 12 months of monitoring on Mud and West Mud Creeks (Stations 18302, 10538, 14477, and 10532). Monitoring for the extension began in March of 2020 and will end in February of 2021. Stakeholder engagement and general

education activities were initiated through this project and will continue in the future. These programs have, and will, help raise stakeholder awareness of local water quality concerns and inform them of options to address these concerns moving forward.

This project is funded by TSSWCB through a Clean Water Act, Section 319(h) grant from the U.S. Environmental Protection Agency.

### ***Kickapoo Watershed Characterization***

This project is a partnership of TSSWCB, TIAER, and ANRA. The monitoring that will take place will assess local Water Quality impairments above Lake Palestine within the Kickapoo Creek segment (0605A). Project goals include three major themes. First, providing stakeholders and agencies with the sufficient information needed to address the bacteria and dissolved oxygen impairments within Kickapoo Creek (0605A). Second, developing a data inventory of existing water quality and land-use information to evaluate and characterize causes and sources of pollution for the segment. And third, collecting any additional water quality data needed to aid with assessment and identification of sources of pollution and/or impairments. The project began February of 2019 and the project will continue through January of 2021. Once data collection is completed, analysis will begin, and stakeholder meetings will be held to present findings and begin deciding on future steps to address the bacterial impairments within the segment.

This work is being funded by TSSWCB.

### ***La Nana Bayou Watershed Characterization and WPP***

In a watershed Characterization Report completed in 2019, TCEQ, TWRI, and ANRA evaluated and characterized potential sources of pollution in the watershed and evaluated water quality conditions on La Nana Bayou. ANRA collected monthly water quality samples from March 2018 to February 2019 at three sites in the watershed. Routine field parameters were collected and water samples were analyzed for E. coli bacteria, Ammonia-N, Nitrate-N, Nitrite-N, Sulfate, Chloride, Total Phosphorus and Total Suspended Solids by ANRA's Environmental Laboratory. Intensive sampling was also conducted on March 8, 2018 & December 3, 2018 to collect a high volume of samples across the watershed in a single day as a way to identify potential areas where loading may be occurring. Data collected were evaluated and developed into a watershed characterization report. Subsequently, a project proposal was submitted for a development of a WPP and is scheduled to be funded in the fall of 2020. Stakeholder engagement and general education activities were initiated through this project and will continue in the future. These programs, paired with individual stakeholder meetings help raise stakeholder awareness of local water quality concerns and also inform them of options to address these concerns moving forward.



**Angelina Watershed Characterization sampling with TWRI and ANRA Mud Creek at US 79**



## ANRA Environmental Laboratory

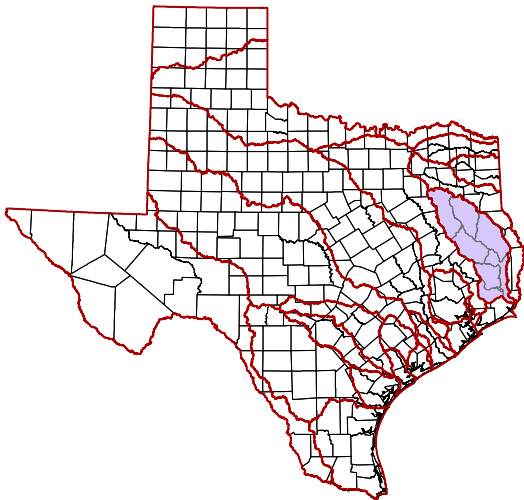
For water samples collected by ANRA, analysis of conventional parameters is performed by the ANRA Environmental Laboratory. The ANRA Environmental Laboratory is certified by the National Environmental Laboratory Accreditation Program (NELAP) for the chemical and microbiological analysis of surface water, wastewater, and drinking water samples. The laboratory performs analysis of drinking water, wastewater, and surface water samples for numerous entities and private individuals in the basin, including the Clean Rivers Program.



Since 2015, the ANRA Environmental Laboratory has been through some intense changes, especially over the course of the past 2 years. The ANRA Central Office relocated in 2019 to its brand new building, allowing for many improvements to the ANRA Laboratory. The new lab is much better equipped for space, ventilation, and testing capacity. They have a significantly upgraded water purification system to create laboratory grade water for use in testing, and have been able to dedicate space for new and upgraded testing equipment that will allow additional test methods/analyses to be performed in house. The lab is now working to bring online new methods for analyzing several parameters, including: Total Phosphorus, Total Kjeldahl Nitrogen, Chlorophyll-a, and Pheophytin.

For more information regarding analytical testing services and ANRA, please visit [http://www.anra.org/divisions/water\\_quality/lab/](http://www.anra.org/divisions/water_quality/lab/)

## Basin Goals and Priorities



### Addressing Water Quality in the Neches Basin

Water quality issues in the Neches basin are generally not attributable to a single point source, and addressing them requires a community focused approach that includes partnerships with individuals as well as organizations all working together to identify and implement solutions. With that in mind, based upon the evaluation of water quality presented in this Basin Summary Report, as well as recommendations from stakeholders and Steering Committee members, we believe the following recommendations present the best path forward.

### Continued Routine Surface Water Quality Monitoring

Routine surface water quality monitoring is critical in order to conduct accurate evaluations of the overall health of an aquatic system. CRP monitors water quality in relation to human health concerns, ecological condition, and designated uses. CRP partners across the State of Texas coordinate and conduct monitoring and assessments based on data collected from approximately 1800 monitoring stations statewide, as well as encouraging stakeholder participation as an effort to improve surface water quality.

### An Increased Focus on Stakeholder Education & Involvement

Over the past year, ANRA has focused on the importance of educating communities and building partnerships within the Neches River Basin. It is vital to provide education and outreach opportunities to stakeholders in order to increase the understanding of the importance of water quality, provide to them the different alternatives that can be used to address water quality issues, and promote environmental stewardship. Building partnerships within the Basin allows for a greater potential impact on water quality due to the combination of resources from different organizations state-wide. With ninety-five percent of the lands of the State of Texas being privately owned, public involvement is crucial when it comes to addressing water quality issues. ANRA encourages the public's involvement through the Texas Stream Team, Major Rivers curriculum, and other education and outreach efforts. The Texas Stream Team, serving as a voluntary group of citizen scientists, is a great way for stakeholders to be directly engaged in their watersheds, in which monitoring efforts can be taken into their own hands by conducting research and contributing to water quality data through a database maintained by the Town of Flower Mound and The Meadows Center for Water and the Environment at Texas State University. The Major Rivers curriculum is a water education program that teaches schoolaged children about the importance of water resources and how to properly care for those resources. ANRA, in partnership with TCEQ, is in the process of developing its own education and outreach materials to be distributed to school-aged children that teaches them the importance of the CRP program and its role in improving water quality. ANRA encourages landowners and stakeholders to incorporate BMPs to ensure that operations are environmentally friendly and take into consideration the potential impacts that agricultural operations can have on water quality. BMPs are conservation practices available to landowners that can help protect and improve overall water quality and quantity, maintain and improve wildlife and fish habitat, as well as a host of other potential benefits. For more information on NRCS conservation practices, contact your local USDA Service Center or Soil and Water Conservation District or visit the TWDB suggested Water Conservation BMPs at: <https://www.twdb.texas.gov/conservation/BMPs/index.asp>

In the future, ANRA would like to participate in additional training opportunities, expand volunteer monitoring programs to other areas of the basin, as well as build relationships with other water quality partners.

For more information on Texas Stream Team involvement, or the Major Rivers Curriculum, please visit:

<https://www.meadowscenter.txstate.edu/Leadership/TexasStreamTeam.html>

<https://www.twdb.texas.gov/conservation/education/kids/MajorRivers>

### ***Continue to seek grant funding for Watershed-Specific Supplemental Projects***

ANRA is already actively participating in several special projects basin-wide to maintain and improve water quality and address impairments and concerns. These projects focus on bringing stakeholders in diverse watersheds together to address water quality issues. They can include data collection and interpretation, education and outreach, implementation of best management practices, assistance for low income households, and more. We believe these projects can be powerful tools to address existing water quality concerns as well as provide education that will foster understanding and appreciation for our natural resources that will help prevent future issues. We should continue to work with partners to seek out opportunities for these types of projects where possible.



**Alligator Snapping Turtle**



**Western Chicken Turtle**

(Source: Jimmy Welch: Environmental Institute of Houston- University of Houston Clear Lake)

## **Conservation Updates**

ANRA has increased its efforts in regards to conservation and mitigation of endangered species in order to achieve the goals of the ESA passed by congress in 1973 and administered by the Interior Department's U.S. Fish and Wildlife Service and the Commerce Department's National Marine Fisheries Service. Due to this Act, all species of plants and animals, except pest insects, are eligible for listing as either endangered or threatened. The U.S. FWS maintains a list of candidate species which includes species that warrant a proposed listing but are precluded from doing so by higher listing priorities. ANRA is a member of the East Texas Aquatic Work Group in which the Texas Comptroller's Natural Resource Program works to provide their expertise on technical, scientific, and policies to help communities and businesses comply with the regulations put forth by the ESA.

### ***East Texas Mussels***

Along with many other agencies, ANRA is keeping up with the listing status of two freshwater mussel species here in East Texas, the Louisiana pigtoe and the Texas heelsplitter. These species are currently candidates for federal protection. The estimated overall current condition of the Louisiana pigtoe in the Lower Neches River and Angelina Rivers is low, and is high in the Neches River. For the Texas heelsplitter, the overall estimated current condition in the Neches River (including B. A. Steinhagen) is low. A Species Status Assessment has been drafted by the USFWS and ANRA has contributed comments during the process.

### ***Alligator Snapping Turtle***

Another species that ANRA is involved with is the Alligator Snapping Turtle, found throughout East Texas in all of the Neches River Basin. This species is currently listed as threatened in Texas and is a candidate for federal listing. More demographic data is needed for this species in order to properly aid in the listing process. SFASU is conducting a baseline study with the Texas Parks and Wildlife Department (TPWD) to achieve a baseline alligator snapping turtle demographics study for all of Texas. ANRA is also working with TPWD to raise awareness about the status of the Alligator snapping turtles in Texas and will continue to look for more ways to become involved.

### ***Western Chicken Turtle***

The Western Chicken Turtle is another candidate species that is found within the Neches River Basin. The Environmental Institute of Houston at University of Houston Clear Lake is conducting a study funded by the Texas Comptroller's Office using the eDNA technique. This technique uses collection of water samples to determine presence of species specific DNA which is used as an indicator as to whether or not that species was present in that location within a specific range. The eDNA technique is less invasive than traditional techniques and is used across a variety of species, especially ones that are cryptic or seasonally active. The Western Chicken Turtle study uses a randomized site design and a combination of ambient water samples, resuspended sediment samples and soil samples at 87 sites throughout the species range. To date, there have been 27 sites sampled with eDNA detections at 4 sites, including 1 site located in the Neches River Basin.



## ANRA partners in Stream Cleanup

In late June, ANRA partnered with the Young Professionals Network of Angelina County and Angelina Beautiful/Clean in efforts to address the pollution concerns in Hurricane Creek. Nearly a dozen volunteers helped clean up about 10 bags of trash that had washed into the stream and along the stream banks. Volunteers celebrated their efforts to improve water quality with a picnic lunch. Hurricane Creek is 3.3 miles in length and runs through Kiwani's Park in Lufkin. This particular portion of Hurricane Creek is listed with a concern for *E.coli* bacteria in the 2020 Texas Integrated Report. Since 2014, ANRA's CRP program has monitored this site quarterly for conventional parameters, field parameters, flow and *E. coli* bacteria to help identify possible sources of *E. coli*. ANRA plans to continue partnerships with community organizations to host more stream cleanup events and events of this nature in order to raise awareness for water quality. If you, or someone you know, is interested in organizing or participating in stream cleanup events, please contact us. We would love to be involved!



Stream Cleanup Volunteers



Trash present at Hurricane Creek, Kiwani's Park

## Contact Us

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Hurricane Creek-Post Cleanup

