

■ CLEAN RIVERS PROGRAM

Upper Neches Basin Highlight Report 2019



MOSS CREEK AT FARM ROAD 226

 ANGELINA & NECHES RIVER AUTHORITY
PRESENTS

2019 Basin Highlights Report for the Upper and Middle Portions of the Neches River Basin





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Introduction

About The Basin Highlights Report

This 2019 Basin Highlights Report is intended to provide a brief overview of the previous year's events and ongoing programs in the upper and middle portions of the Neches River Basin that are relevant to the Clean Rivers Program. For a more comprehensive look at the basin, please refer to the 2015 Basin Summary Report. For information regarding the lower portion of the Neches River Basin, please refer to the Lower Neches

Valley Authority's Basin Highlights Report, available at <http://lnva.dst.tx.us/>.

The 2019 Basin Highlights 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.

About The Clean Rivers Program

The Texas Clean Rivers Act, enacted in 1991 by the Texas legislature, requires that each Texas River Basin conduct ongoing water quality assessments, integrating water quality issues using a watershed management approach. The Clean Rivers Program (CRP) implements the Clean Rivers Act through water quality monitoring, assessment, and public outreach. Currently, monitoring in the state of Texas includes over 1800 sites and regional water quality assessments within the 23 major river and coastal basins and their sub-watersheds.

The mission of the CRP is to maintain and improve the quality of water within each river basin in Texas through an ongoing partnership involving the Texas Commission on Environmental Quality (TCEQ), river authorities, other agencies, regional entities, local governments, industry, and citizens. The program's watershed management approach is designed to identify and evaluate water quality issues, establish priorities for corrective action,

work to implement those actions, and adapt to changing priorities.

As a department within ANRA's Environmental Division, the Clean Rivers Program staff conduct water quality monitoring activities within the basin. The staff also evaluates water quality data and prepares assessment reports related to the water quality in the Neches Basin. ANRA actively coordinates with other entities within the basin to ensure that monitoring activities are spatially represented throughout the basin and that important water quality concerns are addressed. Examples of those entities include, but are not limited to, the Texas Commission on Environmental Quality, the Texas State Soil and Water Conservation Board, the Texas Water Resource Institute, Stephen F. Austin State University, the Texas Institute for Applied Environmental Research, Texas Parks and Wildlife, and the United States Geographical Survey.

About ANRA

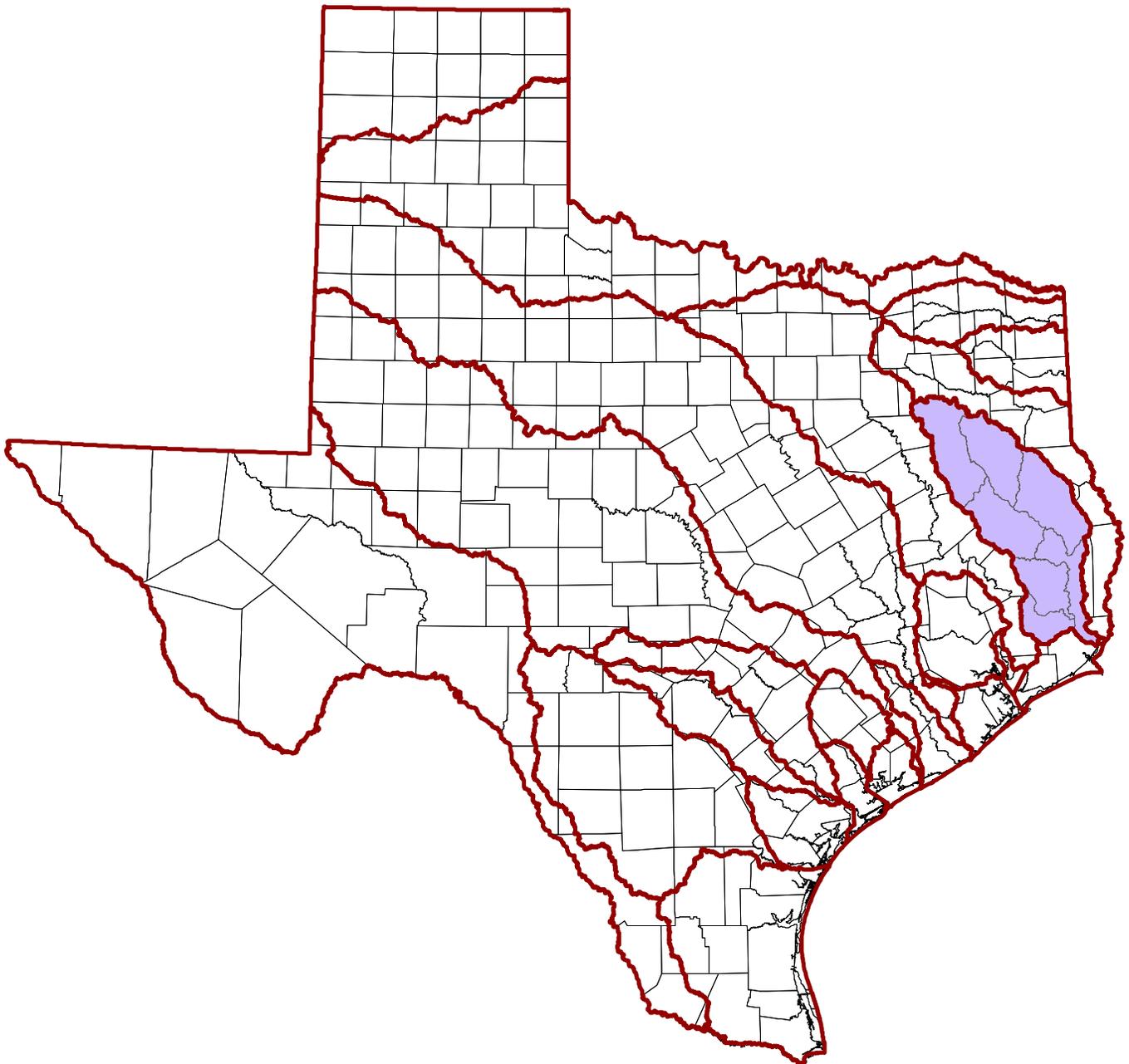
The Angelina & Neches River Authority (ANRA), originally named the Sabine - Neches Conservation District, was created in 1935 by the Texas legislature as a conservation and reclamation district. The Legislature divided the territory of the Sabine - Neches Conservation District into the Sabine River Authority

and the Neches River Conservation District in 1949. It was not until 1971 that the Neches River Conservation District was activated and began operating as a water resource agency. In 1977, Senate Bill 125 changed the name of the Neches River Conservation District to the Angelina & Neches River Authority.

ANRA's office is located in Lufkin, Texas. ANRA's territorial jurisdiction consists of 8,500 square miles that lie wholly or in part of the following 17 counties: Van Zandt, Smith, Henderson, Newton, Cherokee, Anderson, Rusk, Houston, Nacogdoches, San Augustine, Shelby, Angelina, Trinity, Sabine, Polk, Jasper, and Orange.

The Angelina & Neches River Authority has the responsibility for monitoring, protecting, and enhancing water resources in the Neches River Basin. ANRA's mission is to conserve, store, control, preserve, use, and distribute the storm water, floodwater, and the water of the rivers and streams of the state in the Neches River Basin for the benefit of the human environment and the natural environment.

Map Of The Neches River Basin Within Texas



Changes To ANRA Personnel

Departures

■ BRIAN SIMS - ENVIRONMENTAL DIVISION MANAGER

Brian was with the Angelina & Neches River Authority for fourteen years, Environmental Division Manager for eight years, and was instrumental in bringing the River Authority to where it is today. In February of 2018 Brian accepted an offer from the Houston-Galveston Area Council to work with them as a Senior Water Quality Planner.

■ HANNAH LUCIA - QUALITY ASSURANCE OFFICER

Hannah came to work for the River Authority in September of 2016 as our Quality Assurance Officer and CRP field lead. In May of 2018 Hannah accepted a position with the Lower Neches Valley Authority to be closer to family.

Arrivals

■ DYLAN COLEMAN - CLEAN RIVERS PROGRAM COORDINATOR

Dylan Coleman joined ANRA in May of 2018 as our Clean Rivers Program Coordinator. Dylan is a graduate of SFA where he majored in GIS. Dylan's duties are focused on surface water quality and mapping. He serves as the ANRA Clean Rivers Program Coordinator, as well as coordinating all other surface water quality projects that the River Authority is involved in. He is also certified to assist in ANRA's Environmental Laboratory for some analyses as needed.

■ MELISSA GARCIA - QUALITY MANAGER

Melissa Garcia joined ANRA in September of 2018 as our Quality Manager. Melissa is a graduate of A&M, and brings fresh eyes to what we do with her extensive experience from private sector laboratories. Melissa is responsible for ensuring that the quality of all data that the River Authority collects and generates is documented, assured, and scientifically defensible. She serves as the Quality Assurance Officer (QAO) for the ANRA Clean Rivers Program, and the Quality Assurance Officer and Technical Manager for the ANRA Environmental Laboratory.

■ Changes To ANRA's Sampling For FY 2019

Chlorophyll-A/Pheophytin Changes

Due to cost increases, ANRA had to make sweeping changes to the Chlorophyll-a/Pheophytin sampling that we performed for the fourth quarter of FY 2018 and will perform for FY 2019. Due to space limitations and time constraints, the ANRA lab has not historically performed Chlorophyll-a and Pheophytin analysis in house. A significant price increase at the laboratory that we send those samples to for analysis would have exceeded the Clean Rivers Program budget for the contract period, so after careful consideration and

consultation with TCEQ, ANRA made the decision to scale back the number of sites at which we collect Chlorophyll-A and Pheophytin. We attempted to retain monitoring for Chlorophyll-a/Pheophytin at a minimum of one site per segment. If a Waste Water Treatment Facility discharges to a given segment, we retained an upstream and a downstream site for that segment. Now that ANRA has moved into our new office and laboratory, our goal for FY 2020 will be to bring these analysis in house and start collecting them at every site once again.

Non Chlorophyll-A/Pheophytin Related Changes To Monitoring Sites For FY 2019

■ DISCONTINUED SITES:

ANRA discontinued monitoring at four sites for FY 2019. Two that had proved redundant, and two that had achieved their monitoring goals.

Monitoring at Jack Creek at SH 94 (site 10493) was halted because it was in the same Assessment Unit (AU) as Jack Creek at FM 3150 (site 10494). Comparison of the data collected at the two sites didn't indicate any significant differences in the water quality and access is more difficult at SH 94, so of the two, it was chosen to be discontinued.

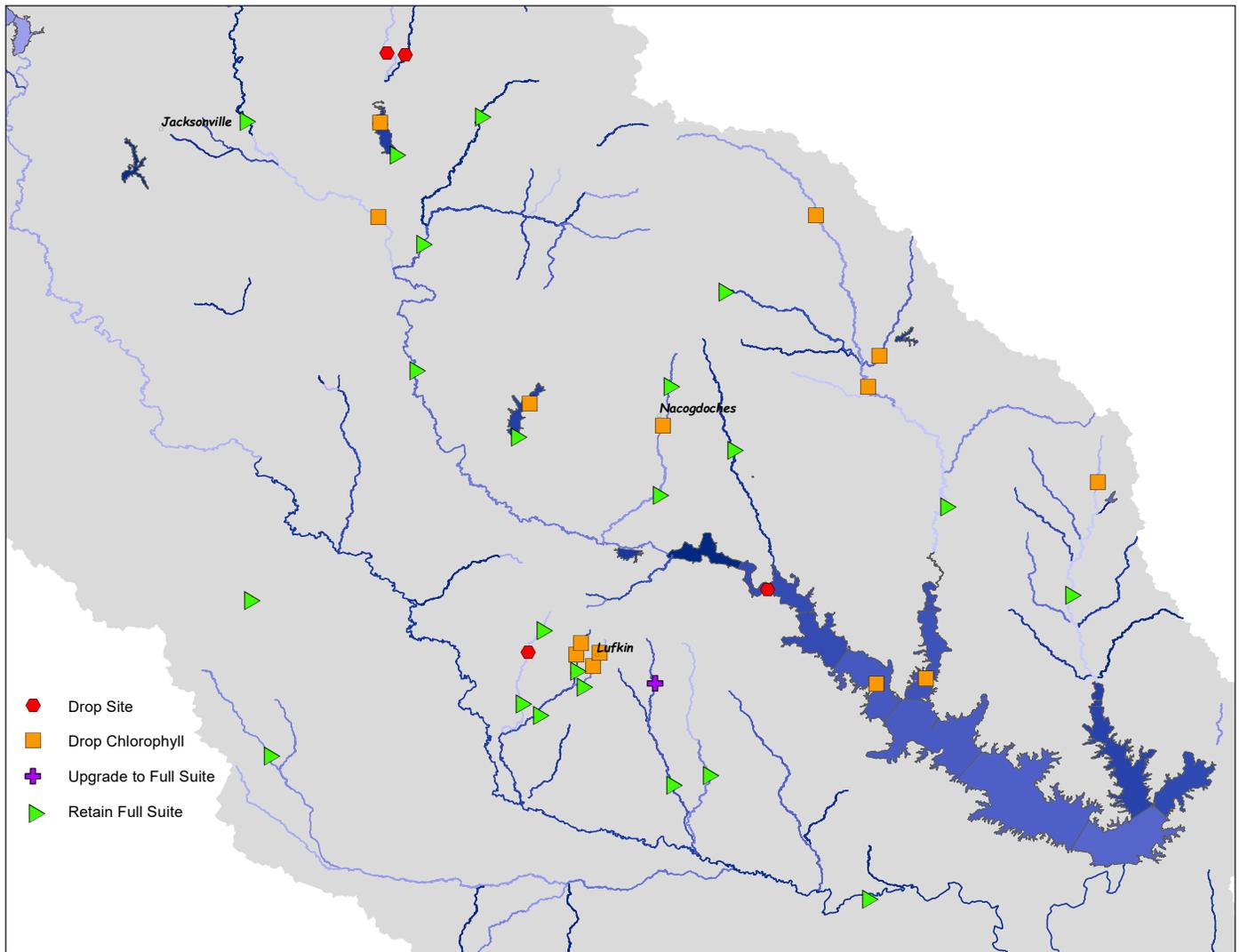
Sam Rayburn downstream of Marion's Ferry (site 21100) was discontinued after a comparison of the data from Sam Rayburn Angelina Arm at Hwy 103 Crossing (site 10613), which is in the same AU, didn't expose enough significant differences in water quality to justify having two sites in the AU.

Monitoring of two sites on tributaries of Lake Striker-Johnson Creek (site 21430) and Bowles Creek (site 21429)-were discontinued because their monitoring objectives had been achieved. Monitoring was put in place to study ambient pH levels to determine if they were naturally low, or if there was some point source possibly contributing. The pH levels were consistently low during monitoring, and we have not seen any evidence of related pollution so it appears it's naturally occurring.

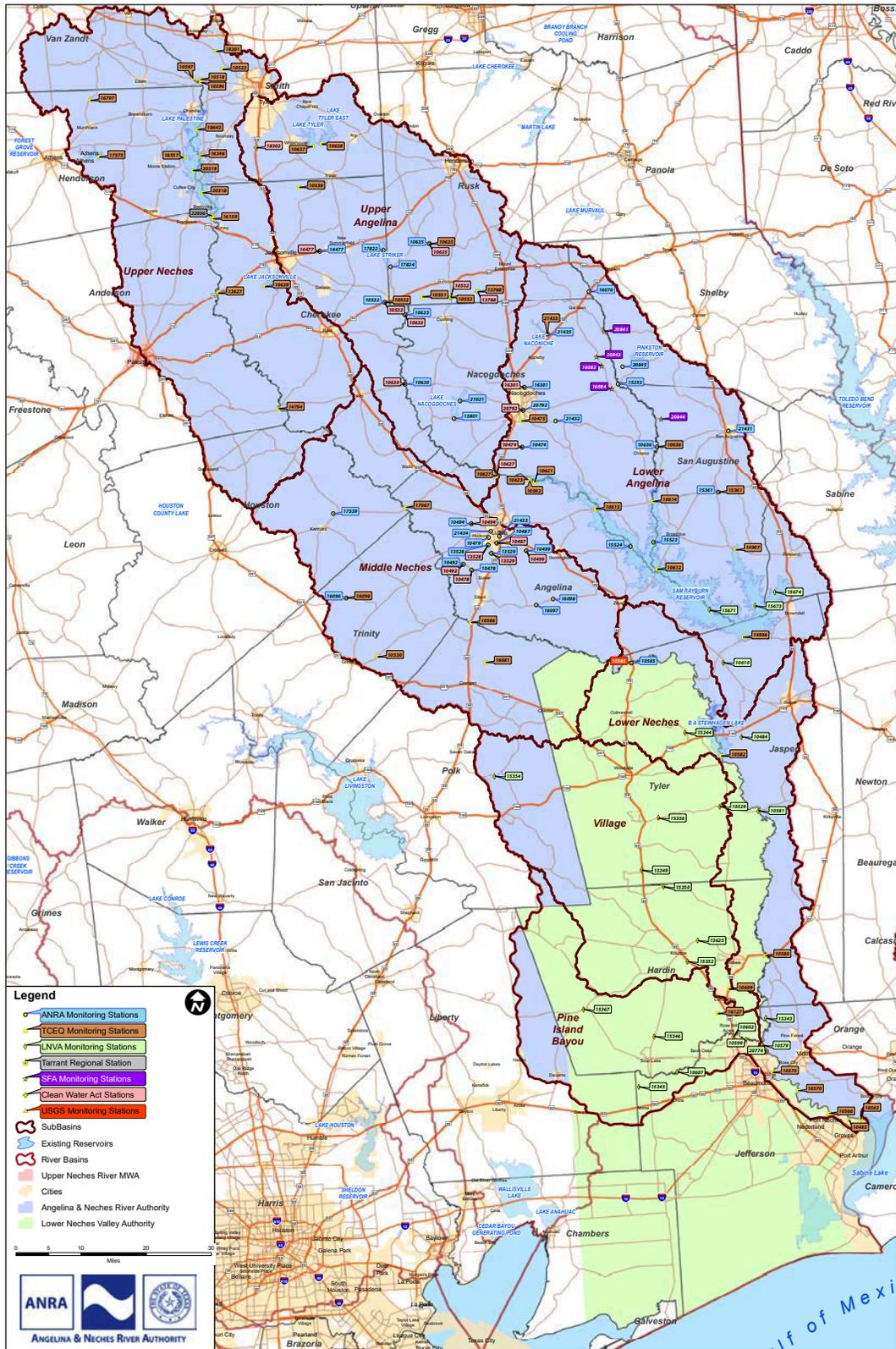
■ MODIFIED SITES:

ANRA changed the monitoring regime at one site, Biloxi at CR 216 (site 10499), from E. coli and field parameters only, to the full suite of parameters (including conventionals) that we collect at our other sites. This was primarily for consistency with the other sites that we monitor.

■ MAP HIGHLIGHTING MONITORING CHANGES FOR THE FOURTH QUARTER OF FY 2018 AND FOR FY 2019



Basinwide Monitoring Sites For FY 2019



See our website www.anra.org for a full resolution copy of this map.

■ COUNT OF FY 2019 MONITORING SITES FOR THE ENTIRE NECHES BASIN

| SAMPLING ENTITY | FIELD | CONVENTIONAL | BACTERIA | FLOW | NOTES |
|---------------------------|-------|--------------|----------|------|--|
| ANRA | 37 | 37 | 37 | 29 | ANRA reduced to from 41 sites to 37 in Q4 FY 18 |
| TCEQ Region 5 (Tyler) | 24 | 20 | 24 | 13 | Monthly E.coli monitoring at 8 stations |
| TCEQ Region 10 (Beaumont) | 27 | 21 | 23 | 8 | Metals in sediment collected at 6 sites, 24 hour DO at 3 sites |
| LNVA | 23 | 23 | 23 | 20 | |
| USGS | 1 | 1 | 0 | 1 | Metals in water collected at 1 station |
| SFASU | 5 | 5 | 5 | 5 | Nonpoint source grant - Attoyac Bayou |

■ FY 2019 MONITORING SITES IN THE UPPER & MIDDLE PORTIONS OF NECHES BASIN

| SEGMENT ID | STATION ID | SITE | REGION | COLLECTED BY | NOTES |
|------------|------------|---|--------|--------------|-----------------------|
| 0604 | 10585 | NECHES RIVER AT US 69 | 10 | ANRA | |
| 0604 | 17067 | NECHES RIVER AT SH 7 | 10 | TCEQ | |
| 0604 | 14794 | NECHES RIVER AT SH 294 | 5 | TCEQ | |
| 0604 | 13627 | NECHES RIVER DOWNSTREAM LAKE PALESTINE AT US 79 | 5 | TCEQ | |
| 0604 | 10586 | NECHES RIVER AT US 59 | 10 | TCEQ | |
| 0604 | 10585 | NECHES RIVER AT US 69 | 10 | USGS | Metals Collected |
| 0604A | 21434 | CEDAR CREEK AT ELLIS AVE IN LUFKIN | 10 | ANRA | |
| 0604A | 13528 | CEDAR CREEK AT FM 1336 | 10 | ANRA | |
| 0604A | 10479 | CEDAR CREEK AT ST LOOP 287 IN LUFKIN | 10 | ANRA | |
| 0604A | 10478 | CEDAR CREEK AT FM 2497 | 10 | ANRA | |
| 0604B | 21433 | HURRICANE CREEK AT KIWANIS PARK | 10 | ANRA | |
| 0604B | 13529 | HURRICANE CREEK AT FM 324 | 10 | ANRA | |
| 0604B | 10487 | HURRICANE CREEK AT ST LOOP 287 IN SOUTH LUFKIN | 10 | ANRA | |
| 0604C | 10494 | JACK CREEK AT FM 3150 | 10 | ANRA | |
| 0604C | 10492 | JACK CREEK AT FM 2497 | 10 | ANRA | |
| 0604D | 16096 | PINEY CREEK AT FM 358 | 10 | TCEQ | TCEQ 24 DO monitoring |
| 0604D | 16081 | PINEY CREEK AT FM 1987 | 10 | TCEQ | TCEQ 24 DO monitoring |
| 0604D | 10530 | PINEY CREEK AT FM 2262 | 10 | TCEQ | TCEQ 24 DO monitoring |
| 0604D | 16096 | PINEY CREEK AT FM 358 | 10 | ANRA | |
| 0604M | 16097 | BILOXI CREEK AT FM 1818 | 10 | ANRA | |
| 0604M | 10499 | BILOXI CREEK AT CR 216 | 10 | ANRA | |
| 0604N | 16098 | BUCK CREEK AT FM 1818 | 10 | ANRA | |
| 0604T | 17339 | LAKE RATCLIFF | 10 | ANRA | |
| 0605 | 20319 | LAKE PALESTINE | 5 | TCEQ | |
| 0605 | 20318 | LAKE PALESTINE MIDLAKE NEAR LEDBETTER BAY | 5 | TCEQ | |
| 0605 | 18643 | LAKE PALESTINE UPPER LAKE EAST SHORE | 5 | TCEQ | |
| 0605 | 18557 | LAKE PALESTINE IN FLAT BAY NEAR MOUTH | 5 | TCEQ | |

| SEGMENT ID | STATION ID | SITE | REGION | COLLECTED BY | NOTES |
|------------|------------|--|--------|--------------|---------------------------|
| 0605 | 16346 | LAKE PALESTINE AT THE CITY OF TYLER RAW WATER INTAKE STRUCTURE | 5 | TCEQ | |
| 0605 | 16159 | LAKE PALESTINE AT DAM | 5 | TCEQ | |
| 0605A | 21618 | KICKAPOO CREEK AT CR 3514 | 5 | TCEQ | |
| 0605A | 16797 | KICKAPOO CREEK AT FM 773 | 5 | TCEQ | Monthly E.Coli Monitoring |
| 0605F | 17575 | LAKE ATHENS NEAR NORTHEAST END OF DAM 3 | 5 | TCEQ | |
| 0606 | 10597 | NECHES RIVER UPSTREAM LAKE PALESTINE | 5 | TCEQ | Monthly E.Coli Monitoring |
| 0606 | 10596 | NECHES RIVER AT FM 279 | 5 | TCEQ | |
| 0606A | 18301 | PRAIRIE CREEK AT SH 110 | 5 | TCEQ | Monthly E.Coli Monitoring |
| 0606A | 10518 | PRAIRIE CREEK AT SH 64 | 5 | TCEQ | Monthly E.Coli Monitoring |
| 0606D | 10522 | BLACK FORK CREEK AT SMITH CR 46 | 5 | TCEQ | Monthly E.Coli Monitoring |
| 0609 | 10610 | ANGELINA RIVER AT SH 63 | 10 | LNVA | |
| 0610 | 21100 | SAM RAYBURN RESERVOIR ON ANGELINA RIVER CHANNEL | 10 | ANRA | |
| 0610 | 15524 | SAM RAYBURN RESERVOIR NEAR SHIRLEY CREEK IN THE ANGELINA RIVER CHANNEL | 10 | ANRA | |
| 0610 | 15523 | SAM RAYBURN RESERVOIR AT ALLIGATOR COVE IN THE ATTOYAC RIVER CHANNEL | 10 | ANRA | |
| 0610 | 14907 | SAM RAYBURN RESERVOIR AT FM 83 | 10 | TCEQ | |
| 0610 | 14906 | SAM RAYBURN RESERVOIR AT MAIN POOL | 10 | TCEQ | |
| 0610 | 10614 | SAM RAYBURN RESERVOIR WEST SHORE | 10 | TCEQ | |
| 0610 | 10613 | SAM RAYBURN RESERVOIR AT SH 103 | 10 | TCEQ | |
| 0610 | 10612 | SAM RAYBURN RESERVOIR AT SH 147 | 10 | TCEQ | |
| 0610 | 15675 | SAM RAYBURN RESERVOIR USGS SITE | 10 | LNVA | |
| 0610 | 15674 | SAM RAYBURN RESERVOIR USGS SITE | 10 | LNVA | |
| 0610 | 15673 | SAM RAYBURN RESERVOIR USGS SITE | 10 | LNVA | |
| 0610 | 15671 | SAM RAYBURN RESERVOIR USGS SITE | 10 | LNVA | |
| 0610 | 15670 | SAM RAYBURN RESERVOIR USGS SITE | 10 | LNVA | |
| 0610A | 21431 | AYISH BAYOU AT WEST COLUMBIA STREET | 10 | ANRA | |
| 0610A | 15361 | AYISH BAYOU AT SH 103 | 10 | ANRA | |
| 0610A | 15361 | AYISH BAYOU AT SH 103 | 10 | TCEQ | |
| 0610P | 21432 | BAYOU CARRIZO AT SH 21 | 10 | ANRA | |
| 0611 | 10635 | ANGELINA RIVER UPSTREAM SAM RAYBURN RESERVOIR | 5 | ANRA | |
| 0611 | 10633 | ANGELINA RIVER | 5 | ANRA | |
| 0611 | 10630 | ANGELINA RIVER AT SH 21 | 10 | ANRA | |
| 0611 | 10635 | ANGELINA RIVER UPSTREAM SAM RAYBURN RESERVOIR | 5 | TCEQ | Monthly E.Coli Monitoring |
| 0611 | 10627 | ANGELINA RIVER BRIDGE ON US 59 | 10 | TCEQ | |
| 0611A | 13788 | EAST FORK ANGELINA RIVER | 5 | TCEQ | |
| 0611A | 10552 | EAST FORK ANGELINA RIVER AT FM 225 | 5 | TCEQ | |
| 0611A | 10551 | EAST FORK ANGELINA RIVER AT RUSK CR 4238 | 5 | TCEQ | Monthly E.Coli Monitoring |
| 0611B | 20792 | LA NANA BAYOU OFF OF EAST MAIN STREET | 10 | ANRA | |
| 0611B | 16301 | LA NANA BAYOU AT LOOP 224 | 10 | ANRA | |
| 0611B | 10474 | LA NANA BAYOU AT CR 526 | 10 | ANRA | |
| 0611B | 10475 | LA NANA BAYOU AT LOOP 224 | 10 | TCEQ | |

| SEGMENT ID | STATION ID | SITE | REGION | COLLECTED BY | NOTES |
|------------|------------|---|--------|--------------|---------------------------|
| 0611C | 14477 | MUD CREEK AT US 79 | 5 | ANRA | |
| 0611C | 10532 | MUD CREEK AT US 84 | 5 | ANRA | |
| 0611C | 10532 | MUD CREEK AT US 84 | 5 | TCEQ | |
| 0611D | 10538 | WEST MUD CREEK AT FM3052 | 5 | TCEQ | Monthly E.Coli Monitoring |
| 0611Q | 21021 | LAKE NACOGDOCHES UPPER LAKE | 10 | ANRA | |
| 0611Q | 15801 | LAKE NACOGDOCHES MAIN POOL | 10 | ANRA | |
| 0611R | 17824 | LAKE STRIKER NEAR DAM | 5 | ANRA | |
| 0611R | 17822 | LAKE STRIKER UPPER LAKE | 5 | ANRA | |
| 0612 | 16076 | ATTOYAC BAYOU AT US 59 | 10 | ANRA | |
| 0612 | 15253 | ATTOYAC BAYOU AT SH 7 | 10 | ANRA | |
| 0612 | 10636 | ATTOYAC BAYOU AT SH 21 | 10 | ANRA | |
| 0612 | 10636 | ATTOYAC BAYOU AT SH 21 | 10 | TCEQ | |
| 0612 | 20841 | ATTOYAC BAYOU AT FM 138 | 10 | SFA | Nonpoint source grant |
| 0612A | 16084 | TERRAPIN CREEK AT SH 95 | 10 | SFA | Nonpoint source grant |
| 0612B | 16083 | WAFFELLOW CREEK AT FM 95 | 10 | SFA | Nonpoint source grant |
| 0612D | 20843 | NACONICHE CREEK AT FM 95 | 10 | SFA | Nonpoint source grant |
| 0612E | 20844 | BIG IRON ORE CREEK AT FM 354 | 10 | SFA | Nonpoint source grant |
| 0612F | 20845 | WEST CREEK AT FM 2913 | 10 | ANRA | |
| 0612G | 21435 | NACONICHE LAKE NEAR THE DAM 16:38A82:38 | 10 | ANRA | |
| 0613 | 10638 | LAKE TYLER EAST AT DAM | 5 | TCEQ | |
| 0613 | 10637 | LAKE TYLER MIDLAKE | 5 | TCEQ | |
| 0614 | 10639 | SOUTHWEST CORNER OF LAKE JACKSONVILLE | 5 | TCEQ | |
| 0615 | 10623 | SAM RAYBURN RESERVOIR AT CONFLUENCE OF ANGELINA RIVER | 10 | TCEQ | |
| 0615 | 10621 | SAM RAYBURN RESERVOIR NEAR ANGELINA RIVER | 10 | TCEQ | |
| 0615A | 10502 | PAPER MILL CREEK UPPER BIFURCATION CHANNEL | 10 | TCEQ | |

■ ■ ■ Texas Water Quality Standards & The Texas Integrated Report

Introduction To Texas Surface Water Quality Standards (TSWQS)

The Texas Surface Water Quality Standards establish explicit goals for the quality of streams, rivers, lakes, and bays throughout the state. The Standards are developed to maintain the quality of surface waters in Texas so that they support public health and enjoyment, and protect aquatic life, consistent with the sustainable economic development of the state.

The Standards identify designated uses for each water body along with the scientific criteria to support those uses. There are general standards that cover the entire state, but if sufficient information is available for a given water body, then more specific standards may be created and applied to that water body.

Designated Uses And Criteria

The designated uses assigned to water bodies in the state determine what criteria to apply when assessing water quality. Those uses/criteria include general use, recreational use, domestic water supply use, and aquatic life use.

General criteria are wide ranging and apply to all water bodies in the state that do not have site specific criteria defined. They apply to substances attributed to waste discharges or human activities, rather than naturally occurring attributes of water bodies. The General criteria include aesthetic parameters like appearance, taste, odor, foaming, surface debris, etc. They also include things like pH, temperature, radioactivity, toxic substances, and dissolved minerals such as chloride, sulfate, total dissolved solids (TDS). Nutrients like ammonia, nitrates, phosphorus, and chlorophyll-a are used to screen concerns for supported use of the waters.

Many of our state's water resources cannot currently meet their designated uses because of pollution problems from a combination of point sources, such as sewage treatment plant discharges, industrial dischargers, and nonpoint sources, such as pollutants carried by rainfall runoff from forests, agriculture lands, abandoned mine lands, etc.

Through the Clean Rivers Program, the TCEQ and its partners continually help evaluate the quality of water bodies throughout the state by measuring parameters such as dissolved oxygen, temperature, pH, dissolved minerals, toxic substances, and bacteria.

Recreational use criteria are applied to water that is not designated for drinking, but that has a good chance of being ingested (swimming, boating, wading, etc). It is assessed using criteria for bacteria indicators such as *E. coli* (freshwater) or *Enterococcus* (tidally influenced waters or marine waters).

Domestic water supply use criteria are applied to waters that could be used for drinking water use. They include things like chlorides, sulfates, and TDS in drinking water.

Aquatic life use criteria are applied to waters that support fish, oysters, mussels, macrobenthics, and other aquatic communities. They include things like dissolved oxygen, fish and macrobenthic community index, and acute and chronic substances.

The Texas Integrated Report Of Surface Water Quality

■ WHAT IS THE TEXAS INTEGRATED REPORT?

The Texas Integrated Report describes the status of the state's waters, as required by Sections 305(b) and 303(d) of the federal Clean Water Act. It summarizes the condition of the state's surface waters, including concerns for public health, fitness for use by aquatic species and other wildlife, and specific pollutants and their possible sources.

Section 303(d) of the Clean Water Act requires states to develop lists of impaired waters every two years in even-numbered years. The state must identify all water bodies where required pollution controls are not sufficient to attain or maintain applicable Surface Water Quality Standards. In Texas, this list is compiled by the TCEQ and is a part of the "Texas Integrated Report for Clean Water Act Sections 305(b) and 303(d)" also known more simply as the Texas Integrated Report.

Every two years the TCEQ conducts a water quality assessment on all classified water bodies for which sufficient data were available and for unclassified water bodies where a pending regulatory need exists, or where new information may change the standards attainment status.

If the measured values for a water body are found to be consistently outside the criteria for its designated use, then that water body must be listed as impaired, which simply means that the water body is not supporting its designated uses.

Then within the Integrated Report, the "303(d) list" is the list of impaired water bodies.

When a water body is determined to be impaired, then steps must be taken to either remedy the problem, or to reevaluate which designated uses are appropriate for the water body in question. This generally starts with attempting to determine the source of the impairment, whether naturally occurring, or human caused. And then if possible, putting a plan in place to address the root causes of the impairment.

■ CLASSIFIED VS UNCLASSIFIED SEGMENTS AND ASSESSMENT UNITS

For the purpose of managing Water Quality Standards, water bodies in the state are divided into classified and unclassified segments. A classified segment is a water body or portion of a water body that is individually defined in the Texas Surface Water Quality Standards. A segment is intended to have relatively homogeneous chemical, physical, and hydrological characteristics. A segment provides a basic unit for assigning site-specific standards and for applying water quality management programs of the agency. Classified segments may include streams, rivers, bays, estuaries, wetlands, lakes, or reservoirs. The classified segments are assigned four-digit numbers. The first two digits correspond to the major basin in which they are located. The last two digits distinguish individual segments within the particular basin.

Because of the great extent of waters of the state, not all bodies of water are classified in the standards. For example, when managing a classified segment of the Neches River, it may be necessary to examine

water quality in the tributaries that flow into that segment. Some of these tributaries may not be part of the classified segment system. When that happens, for management purposes, the tributary is assigned a unique tracking number that is referred to as an unclassified segment. This unclassified tributary will be designated with the number of the classified segment in whose watershed it is located, along with a letter; for instance, tributaries of Segment 0604 would be 0604A, 0604B, and so on. The same numbering system applies to unclassified lakes. In management activities, both classified and unclassified segments are referred to generically as water bodies.

Segments are further divided into Assessment Units (AUs) to provide a more detailed picture of water quality when examining collected data for assessment purposes. A segment may be represented by one or more Assessment Units. For example, Sam Rayburn Reservoir (segment 0610) is broken down into 10 separate Assessment Units.

■ INTEGRATED REPORT STATUS

A draft copy of the draft 2016 Integrated Report (which assesses data collected from 12/1/07 to 11/30/14) was made available for public comment on May 4, 2018. After responding to comments, the TCEQ adopted the draft on October 17, 2018. It's currently with the EPA awaiting approval.

The 2018 IR (12/01/09 - 06/30/17) is currently in pre-draft status and is being actively worked on.

■ SUMMARY OF INTEGRATED REPORT CHANGES FROM 2014 TO 2016

NEWLY LISTED WATERBODIES:

There were no new waterbodies added to the impaired list for the draft 2016 IR in the Upper portion of the Neches Basin.

DELISTED WATERBODIES IN THE DRAFT 2016 IR IN THE UPPER NECHES BASIN:

| SEGMENT ID / ASSESSMENT UNIT | SEGMENT NAME | PARAMETERS | ASSESSMENT UNIT LOCATION | REASON FOR DELISTING |
|------------------------------|--------------------------------------|-----------------------------|---|----------------------|
| 0606_02 | Neches River Above Lake Palestine | pH | From the confluence with Prairie Creek (0606A) upstream to the Rhine Lake Dam | Meets Criteria |
| 0612_01 | Attoyac Bayou | bacteria (Recreational Use) | From the lower boundary approximately at confluence with Granberry Branch upstream to confluence with Polly Branch | Meets Criteria |
| 0615_01 | Angelina River/Sam Rayburn Reservoir | impaired fish community | The riverine portion of Sam Rayburn Reservoir from a point 5.6 kilometers (3.5 miles) upstream of Marion's Ferry to the aqueduct crossing 1.0 kilometer (0.6 mile) upstream of the confluence of Paper Mill Creek | Meets Criteria |

■ THE UPPER NECHES BASIN IN THE 2016 DRAFT INTEGRATED REPORT

INTRODUCTION

Waterbodies on the draft 2016 Texas IR can be listed as having impairments, concerns, or both.

Waterbodies are listed as impaired when they are not meeting the standards for their designated uses.

Waterbodies are listed as having concerns when data shows that the waterbody is meeting its standards, but is nearing impairment levels (near non-attainment) or when a screening level has been exceeded.

Bacterial impairments (*E. coli*) are the most common reason for water bodies in the upper and middle portions of the Neches River Basin to be listed on the draft Integrated Report.

CATEGORIZATION OF WATERBODIES IN THE INTEGRATED REPORT

| CATEGORY | DESCRIPTION |
|----------|---|
| 1 | Attaining all water quality standards and no use is threatened. |
| 2 | Attaining some water quality standards and no use is threatened; and insufficient data and information are available to determine if the remaining uses are attained or threatened. |
| 3 | Insufficient data and information are available to determine if any water quality standard is attained. |
| 4 | Water quality standard is not supported or is threatened for one or more designated uses but does not require the development of a TMDL. |
| 4a | TMDL has been completed and approved by EPA. |
| 4b | Other pollution control requirements are reasonably expected to result in the attainment of the water quality standard in the near future. |
| 4c | Nonsupport of the water quality standard is not caused by a pollutant. |
| 5 | The water body does not meet applicable water quality standards or is threatened for one or more designated uses by one or more pollutants. |
| 5a | A TMDL is underway, scheduled, or will be scheduled. |
| 5b | A review of the water quality standards for the water body will be conducted before a TMDL is scheduled. |
| 5c | Additional data and information will be collected before a TMDL is scheduled. |

TYPES OF CONCERNS IN THE INTEGRATED REPORT

| CONCERN | DESCRIPTION |
|---------|---|
| CN | Concern for near-nonattainment of the TSWQS based on numeric criteria |
| CS | Concern for water quality based on screening levels |

TABLE OF IMPAIRMENTS AND CONCERNS FOR THE UPPER NECHES BASIN IN THE DRAFT 2016 IR

| SEGMENT ID | SEGMENT NAME | IMPAIRMENTS | CATEGORY | CONCERNS | LEVEL OF CONCERN |
|------------|-----------------------------------|--|----------|------------------------------|------------------|
| 0604 | Neches River below Lake Palestine | Dioxin in edible tissue, Mercury in edible tissue | 5c 5c | Chlorophyll-a | CS |
| 0604A | Cedar Creek | Bacteria (Recreation Use) | 5b | Nitrate, Total Phosphorus | CS CS |
| 0604B | Hurricane Creek | Bacteria (Recreation Use) | 5b | No Concerns | |

| SEGMENT ID | SEGMENT NAME | IMPAIRMENTS | CATEGORY | CONCERNS | LEVEL OF CONCERN |
|------------|--|--|----------------|--|----------------------------------|
| 0604C | Jack Creek | No Impairments | | Bacteria (Recreation Use) Depressed Dissolved Oxygen, | CN CS CS |
| 0604D | Piney Creek | Depressed dissolved oxygen | 5c | Ammonia | CS |
| 0604M | Biloxi Creek | Bacteria (Recreation Use), Depressed dissolved oxygen | 5b 5c | Ammonia, Total Phosphorus | CS |
| 0604N | Buck Creek | No Impairments | | No Concerns | |
| 0604T | Lake Ratcliff | Mercury in edible tissue | 5c | No Concerns | |
| 0605 | Lake Palestine | pH | 5b | Depressed Dissolved Oxygen | CS |
| 0605A | Kickapoo Creek | Bacteria (Recreation Use) Depressed dissolved oxygen | 5b 5c | No Concerns | |
| 0606 | Neches River Above Lake Palestine | Bacteria (Recreation Use) (AU 01), Bacteria (Recreation Use) (AU 02), Depressed dissolved oxygen | 5b 5c 5b | Depressed Dissolved Oxygen, Nitrate, Total Phosphorus, Zinc in Water | CN CS CS CN |
| 0606A | Prairie Creek | Bacteria (Recreation Use) | 5b | No Concerns | |
| 0606D | Black Fork Creek | Bacteria (Recreation Use) | 5c | No Concerns | |
| 0609 | Angelina River Below Sam Rayburn Reservoir | Dioxin in edible tissue, Mercury in edible tissue | 5c 5c | No Concerns | |
| 0610 | Sam Rayburn Reservoir | Mercury in edible tissue, Dioxin in edible tissue | 5c 5c | Copper in Water Depressed Dissolved Oxygen, Iron in Sediment, Manganese in Sediment, Mercury in Edible Tissue, pH | CN CS CS CS CS CN |
| 0610A | Ayish Bayou | Bacteria (Recreation Use) | 5b | Depressed Dissolved Oxygen | CS |
| 0610P | Bayou Carrizo | No Impairments | | Bacteria (Recreation Use) | CN |
| 0611 | Angelina River above Sam Rayburn | Bacteria (Recreation Use) | 5c | No Concerns | |
| 0611A | East Fork Angelina River | Bacteria (Recreation Use) | 5b | Bacteria (Recreation Use) | CN |
| 0611B | La Nana Bayou | Bacteria (Recreation Use) | 5b | Bacteria (Recreation Use), Nitrate, Total Phosphorus | CN CS CS |
| 0611C | Mud Creek | Bacteria (Recreation Use) | 5b | No Concerns | |
| 0611D | West Mud Creek | Bacteria (Recreation Use) | 5b | Ammonia, Nitrate | CS CS |
| 0611Q | Lake Nacogdoches | No Impairments | | No Concerns | |
| 0611R | Lake Striker | No Impairments | | No Concerns | |
| 0612 | Attoyac Bayou | Bacteria (Recreation Use) | 5b | No Concerns | |
| 0612F | West Creek | No Impairments | | Bacteria (Recreation Use) | CN |
| 0615 | Angelina/Sam Rayburn Reservoir | Depressed dissolved oxygen, Dioxin in edible tissue, Mercury in edible tissue | 5c 5c 5c | No Concerns | |
| 0615A | Paper Mill Creek | Bacteria (Recreation Use) | 5b | No Concerns | |

Narrative Descriptions Of Classified Segments In The Upper Neches Basin

0604 NECHES RIVER



This 231 miles-long freshwater stream extends from a point immediately upstream of the confluence of Hopson Mill Creek in Jasper/Tyler County to Blackburn Crossing Dam in Anderson/Cherokee County. Contact recreation, public water supply, general, and high aquatic life use are the designated uses for this segment. This segment has six different creeks that connect to this segment that are either impaired from bacteria, or mercury and dioxin is found within edible tissue. On the 2016 draft IR,

assessment units 01,02, and 03 are impaired for dioxin in edible tissue and mercury in edible tissue. Several unclassified segments of 0604 are also impaired. Lake Ratcliff (0604T) is listed for mercury in edible tissue. Cedar Creek (0604A), Hurricane Creek (0604B), and Biloxi creek (0604M) are listed for elevated bacteria levels, and Piney Creek (0604D) and Biloxi Creek (0604M) are listed for depressed dissolved oxygen levels.

0605 LAKE PALESTINE



Lake Palestine is an 23,500-acre reservoir from the Blackburn Crossing Dam in Anderson/Cherokee County to a point 6.7 km (4.2 miles) downstream of FM 279 in Henderson/Smith County, up to normal pool elevation of 345 feet (impounds Neches River). It was impounded in 1962. Designated uses for this segment

are general, public water supply, contact recreation, fish consumption, and high aquatic life use.

Lake Palestine is a popular angler site and houses several largemouth bass tournaments annually. Predominate fish species located within the lake include largemouth

bass, spotted bass, white and hybrid striped bass, crappie, flathead and channel catfish, and sunfish. Vegetation within the reservoir is moderate in upper end and creek arms, especially near Kickapoo Creek. The upper lake is shallow and has heavy aquatic vegetation. On the 2016 draft IR assessment units

01,03,09,10, and 11 are impaired for low pH. Kickapoo Creek in Henderson County (0605A) is impaired for bacteria and depressed dissolved oxygen. A watershed characterization project is about to begin on Kickapoo creek. See the basin updates section of this report for more details.

0606 NECHES RIVER ABOVE LAKE PALESTINE



This freshwater stream includes 27 miles from a point 6.7 km (4.2 miles) downstream of FM 279 in Henderson/Smith County to Rhines Lake Dam in Van Zandt County. Aquatic life, general, contact recreation, and public water supply are the designated uses for this segment. There are several listings within this segment on the 303(d)

list of impaired water bodies. On the 2016 draft IR, assessment units 01 and 02 are listed as impaired for bacteria and depressed dissolved oxygen levels. Prairie Creek (0606A) and Black Fork Creek (0606D) are also impaired for bacteria.

0610 SAM RAYBURN RESERVOIR



Sam Rayburn Reservoir includes 106,666 acres from Sam Rayburn Dam in Jasper County to a point 5.6 kilometers (3.5 miles) upstream of Marion's Ferry on the Angelina River Arm in Angelina/Nacogdoches County and to a point 3.9 km (2.4 miles) downstream of Curry Creek on the Attoyac Bayou Arm in Nacogdoches. Designated uses are general use, high aquatic life use, public water supply use, contact recreation, and fish

consumption. Located around Sam Rayburn are various contact recreational areas including trails, campgrounds, boating ramps, marinas, designated swimming areas, and group areas. All assessment units within the segment are impaired for mercury (Hg) in edible tissue and also Dioxins in edible tissue. Ayish Bayou (0610A) assessment units 1 & 02 are impaired for bacteria.

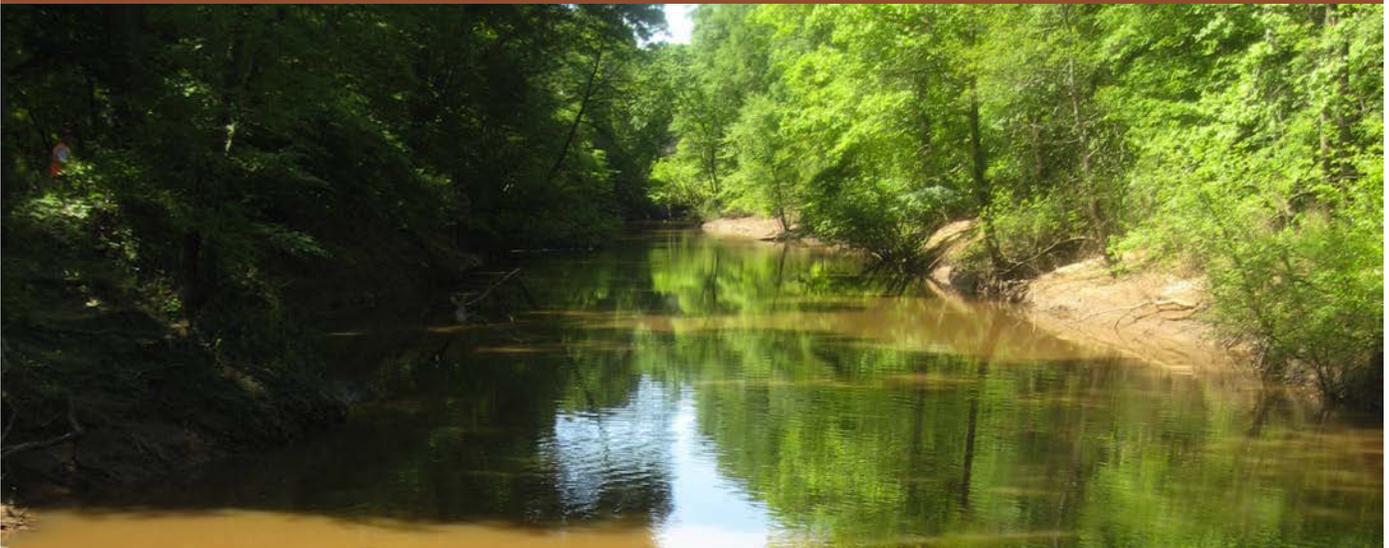
0611 ANGELINA RIVER ABOVE SAM RAYBURN



A 104 mile long freshwater stream. From the aqueduct crossing 0.6 miles upstream of the confluence of Paper Mill Creek in Angelina/Nacogdoches County to the confluence of Barnhardt Creek and Mill Creek at FM 225 in Rusk County. The designated uses for this segment include contact recreation, high aquatic life use, fish consumption use, public water supply use, and general

use. One assessment unit on the main stem, and six assessment units on unclassified tributaries are impaired for bacteria: Assessment unit 04 on the main stem, 01 on the East Fork Angelina (0611A), 01 & 02 on La Nana Bayou (0611B), 01 on Mud Creek (0611C), and 01 & 02 on West Mud Creek (0611D).

0612 ATTOYAC BAYOU



A freshwater stream measuring 81.7 miles in length from a point 3.9 km (2.4 miles) downstream of Curry Creek in Nacogdoches/San Augustine County to FM 95 in Rusk County. The designated uses for this segment include the following: high aquatic life, general, contact recreation, and public water supply. The area surrounding the watershed is managed for agricultural (cattle and poultry), silvicultural, recreational, and wildlife uses. The

watershed contains many rural residents. Assessment units 02 & 03 are impaired for bacteria. After diligent work from local stakeholders as part of the ongoing watershed protection plan, the southernmost assessment unit (01) has begun meeting the criteria for its designated uses, and it has been removed from the impaired list in the 2016 IR.

0613 LAKE TYLER/LAKE TYLER EAST

Segment 0613 extends from Whitehouse Dam and Mud Creek Dam in Smith County up to the normal pool elevation of 375.38 feet. The reservoir impounds both Prairie Creek and Mud Creek. Lake Tyler West and East include a total of 4,880 acres. This segment is designated for high aquatic life use, general use, fish consumption use, public water supply use, and recreation

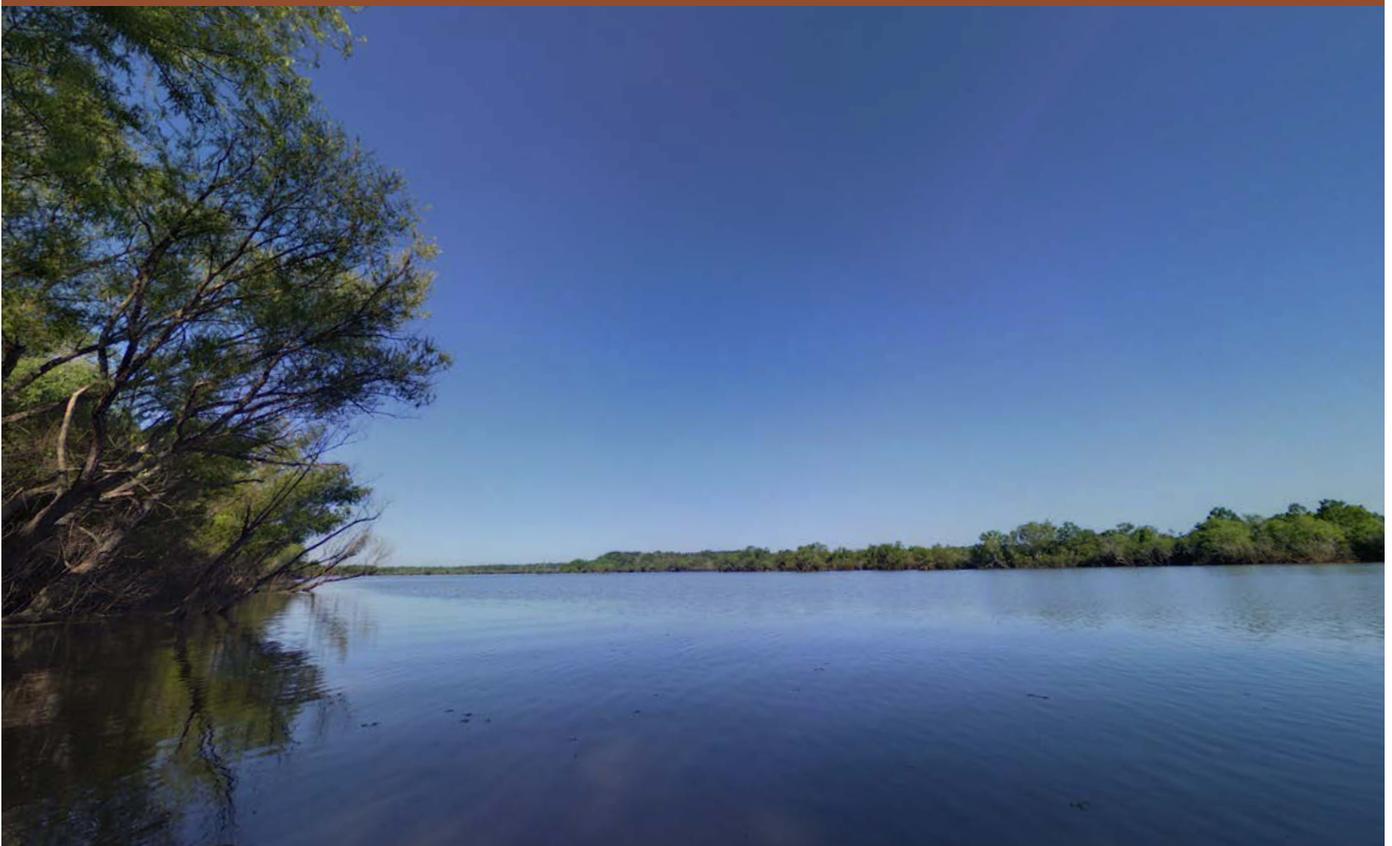
use. Lake Tyler West and East were impounded in 1949 and 1966, respectively. The reservoir serves as a major source for water supply and recreational use. There are several park areas adjacent to the lakes. The lakes have a storage capacity of 15 billion gallons of water within the watershed. The maximum depth is forty feet. This segment meets all the standards for its designated uses.

0614 LAKE JACKSONVILLE

Segment 0614 is designated as a classified reservoir, Lake Jacksonville. The description of this lake includes from an area from Buckner Dam in Cherokee county up to a normal pool elevation of 422 feet (impounds

Gum Creek). The reservoir is classified for public water supply use, high aquatic life use, general use, and contact recreation use. This segment meets all the standards for its designated uses.

0615 RIVERINE PORTION OF SAM RAYBURN RESERVOIR



The riverine portion of Sam Rayburn Reservoir extends from a point 5.6 kilometers (3.5 miles) upstream of Marion's Ferry to a point 2.75 kilometers (1.71 miles) upstream of the confluence of Paper Mill Creek. The segment includes 5,068 acres. The designated uses for this segment include intermediate aquatic life use,

contact recreation, general use, and public water supply. In the 2016 draft IR, assessment unit 01 is impaired for depressed oxygen levels, and dioxin and mercury in edible tissue. Paper Mill Creek (0615A) is impaired for bacteria.

■ ■ ■ Other Water Quality Related Projects In The Basin

Attoyac Bayou Projects

Although not funded by the Clean Rivers Program, the Attoyac Bayou Watershed Protection Plan (WPP) has been a conduit for numerous grant programs to help monitor and improve water quality in the basin.

There are two projects currently active that are continuing the efforts of the Attoyac Watershed Protection Plan.

■ ATTOYAC WATERSHED BEST MANAGEMENT PRACTICE (BMP) EFFECTIVENESS MONITORING

The Texas State Soil and Water Conservation Board (TSSWCB), Texas Water Resource Institute (TWRI), Stephen F. Austin State University (SFA), and ANRA are working together to perform monthly routine monitoring in the Attoyac Bayou watershed, as well as public education and outreach efforts.

This project began work in October of 2016, and was originally intended to end in March of 2019, but all parties agreed to extend the project through August of 2019 at no additional cost to the state.

SFA collects samples monthly at five sites within the watershed. ANRA's environmental laboratory analyzes

the samples and sends the results to TWRI and TCEQ for use in determining the effectiveness of BMPs that have been put in place with the assistance of the Attoyac WPP, as well as assessing the water quality for the Integrated Report. Several educational events have been held in the area over the course of the project as well.

A follow-up project that would extend monitoring and educational outreach for an additional 22 months is currently making its way through the approval process.

This project is funded by the Texas State Soil and Water Conservation Board (TSSWCB) through a Clean Water Act, Section 319(h) grant from the U.S. EPA.

■ ATTOYAC ON-SITE SEWAGE FACILITY (OSSF) REPAIR & REPLACEMENT

The Texas Commission on Environmental Quality (TCEQ), TWRI, Pineywoods Resources Conservation & Development (RC&D), and ANRA are re-placing or repairing failing On-Site Sewage Facilities (OSSFs) within The Attoyac Bayou Watershed and educating residents on best practices related to owning and maintaining OSSFs. The Attoyac Bayou WPP identified failing or non-existent OSSFs as one of the leading contributors to lower water quality in the Attoyac Bayou watershed, so TWRI and ANRA are continuing to develop a database of OSSF systems in the area in order to better monitor the age and health of those systems.

This project began in March of 2017, and was originally intended to replace/repair approximately 13 OSSFs. Response to the program was very positive, and additional funds were secured to provide an additional 10 repairs/replacements (for a total of 23). All funded systems/repairs are expected to be installed/completed by end of summer 2019.

This project also has a follow-up in the approval process, and it is expected to be in place to continue the OSSF repair/replacement efforts by the time this one closes out.

OSSF repair and replacements are funded by TCEQ through a Clean Water Act Section 319 Grant and Supplemental Environmental Projects (SEP) funds.

For further information about either of these projects, contact Dylan Coleman at ANRA (dcoleman@anra.org), or Emily Monroe at TWRI (Emily.Monroe@ag.tamu.edu).

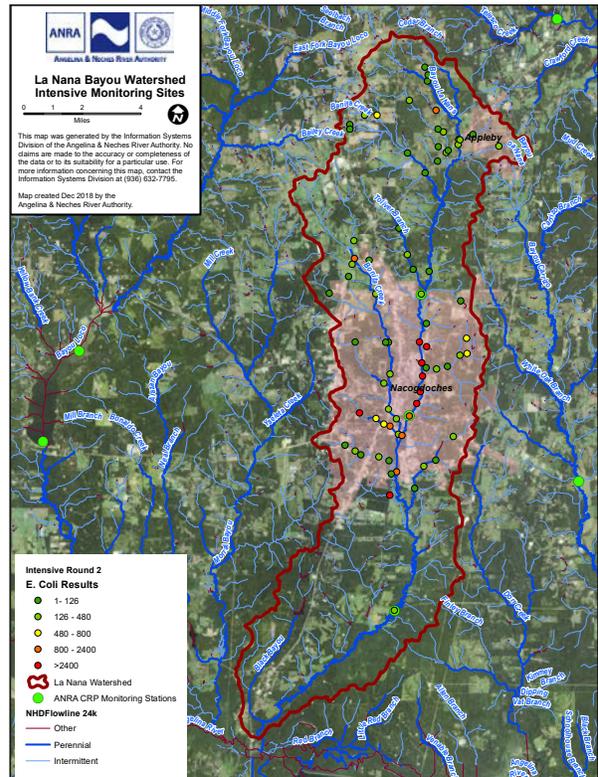
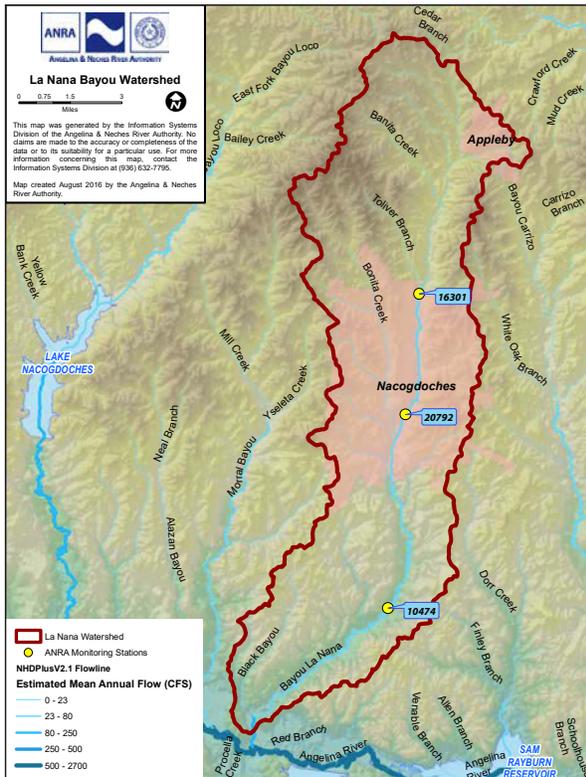
La Nana Bayou Watershed Characterization

TCEQ, TWRI, and ANRA are evaluating and characterizing potential sources of pollution in the watershed and evaluating current water quality conditions. ANRA collected monthly water quality samples from March 2018 to February 2019 at three sites in the watershed. Analysis of the collected data is underway. 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 are being evaluated and will be developed into a watershed characterization report in the near future.

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

This project is funded by the Texas Commission on Environmental Quality (TCEQ) through a Clean Water Act, Section 319(h) grant from the U.S. EPA.

For further information about this project, contact Dylan Coleman at ANRA (dcoleman@anra.org), or Ed Rhodes at TWRI (Edward.Rhodes@ag.tamu.edu).



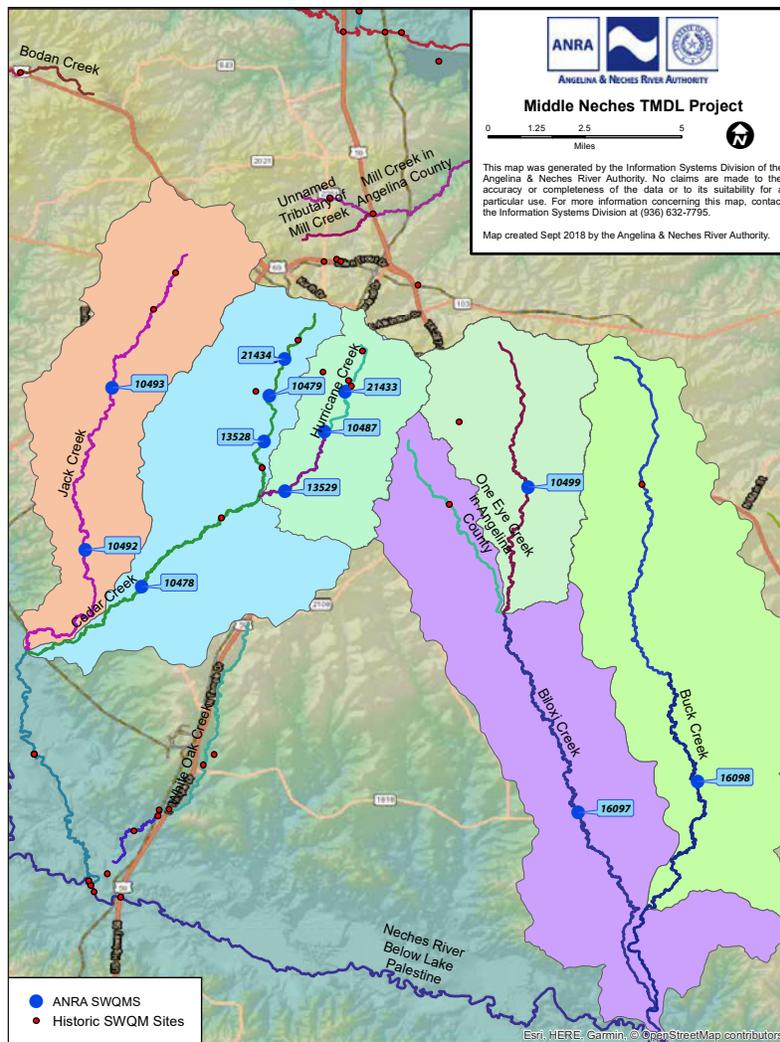
Middle Neches Tributary TMDL Project (Jack, Hurricane, Cedar, Biloxi)

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 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 began in December of 2018 and will continue until June of 2019. 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.

This work is being funded by the Texas Commission on Environmental Quality (TCEQ).

For further information about this project, contact Dylan Coleman at ANRA (dcoleman@anra.org), or Anna Gitter at TWRI (Anna.Gitter@ag.tamu.edu).



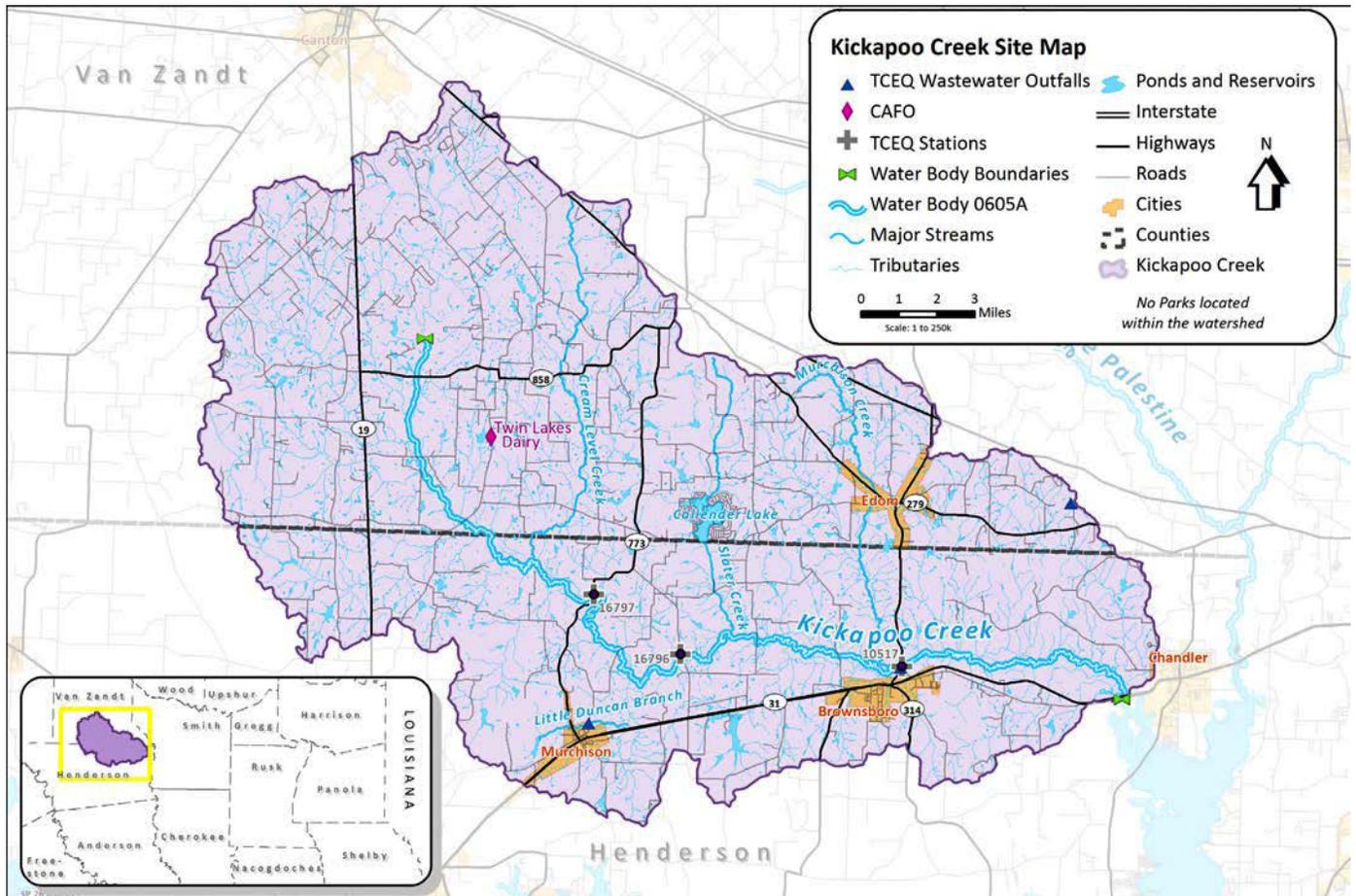
Kickapoo Creek Watershed Characterization Project

This project is a partnership of Texas State Soil and Water Conservation Board (TSSWCB), Texas Institute for Applied Environmental Science (TIAER), and ANRA. The monitoring that will take place will potentially assess local Water Quality impairments above Lake Palestine within the Kickapoo Creek segment (0605A). Project goals include providing stakeholders and agencies with the sufficient information needed address the bacteria and dissolved oxygen impairments within Kickapoo Creek (0605A). Secondly to developing a data inventory of existing water quality and land-use information to evaluate and characterize causes and sources of pollution for the segment. Lastly, to collect any additional water quality data to aid with assessment and identification of sources.

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 the Texas State Soil and Water Conservation Board (TSSWCB).

For further information about this project, contact Dylan Coleman at ANRA (dcoleman@anra.org), or Leah Taylor at TIAER (ltaylor@tarleton.edu).



Bacterial Monitoring On The Neches Above Palestine

As part of the basinwide effort to address bacterial impairments, TCEQ has partnered with the University of Texas at Tyler to collect bacterial samples from April through July 2019 on the Neches River and Black Fork Creek once a month at one site, and twice a month at two other sites.

This work is being funded by the Texas Commission on Environmental Quality (TCEQ).

For further information about this project, contact Dania Grundmann at TCEQ (danial.gundmann@tceq.texas.gov).

| STATION ID | SEG ID | STATION DESCRIPTION | SUBMITTING ENTITY | COLLECTING ENTITY | MONITORING TYPE CODE | ANNUAL MONITORING FREQUENCY |
|------------|--------|---|-------------------|-------------------|----------------------|-----------------------------|
| 10597 | 0606 | Neches River at SH 64 | UY | UY | RTWD | 4 |
| 10595 | 0606 | Lake Palestine in Neches River channel at SH 31 northeast of Chandler | UY | UY | RTWD | 8 |
| 10522 | 0606D | Black Fork Creek at CR 46 | UY | UY | RTWD | 8 |

ANRA's New Central Office And Laboratory



After 48 years in our previous location in downtown Lufkin, the Angelina & Neches River Authority has moved to our all new, state of the art Central Office & Laboratory located on the Northwest side of loop 287 in Lufkin.

Our new facility will provide us the ability to expand and improve services, provide a space for our public meetings, and will greatly improve access and parking among other things.

Our new laboratory should give us enough space and capacity to allow us to finally begin analyzing Total Kjeldahl Nitrogen (TKN), and we also expect to be able to begin analyzing Chlorophyll-a and Pheophytin in house soon.





■ A BRIEF PHOTO TOUR...



Public Education And Outreach

MAJOR RIVERS

ANRA recently supplied Saint Cyprians School in Lufkin with the Major rivers curriculum for their middle school classes. The Major Rivers program is an excellent way for Texas water providers to do cost-effective water education outreach in their communities with a program that has a proven track record of acceptance by Texas educators. Major Rivers and his horse Aquifer will

make learning all about water in Texas irresistibly fun. Major Rivers is a water education program designed to teach students about Texas' major water resources, how water is treated and delivered to their homes and schools, how to care for their water resources, and how to use them wisely.



NECHES RIVER RENDEZVOUS

In 2018 the Angelina & Neches River Authority sponsored, and had many employees volunteer their own time for the 21st Annual Neches River Rendezvous. An annual summer tradition, the Neches River Rendezvous is a scenic 10-mile trip on the Neches River. This event is designed to promote outdoor wilderness adventure in East Texas by framing a day of paddling with the panoramic Neches River and surrounding forests in a fun, family-oriented experience. A delicious hamburger lunch is served at the conclusion of the paddling trip. Free Shuttle service is provided to and from the river. For 2019 the 22nd Annual Neches River Rendezvous will be held on June 1, 2019, and ANRA will again be a sponsor.

■ TEXAS STREAM TEAM

ANRA serves as the Texas Stream Team regional partner for the Upper Neches Basin and provides training, monitoring kits, and replacement reagents to the volunteer monitors in the basin. ANRA supports a number of water quality monitors in the basin.

In 2019 Kennard ISD joined the Texas Stream Team. ANRA supplied them with two monitoring kits that they intend to use for expanding their science education program.

For more information on Texas Stream Team, please contact Dylan Coleman (dcoleman@anra.org) or visit their website at: <http://txstreamteam.rivers.txstate.edu>

■ STEERING COMMITTEE

Through the Clean Rivers Program, ANRA has established a Steering Committee of stakeholders to guide us in our monitoring activities. The Steering Committee's role is advisory in nature and involves assistance with the review of local issues and creation of priorities for the Upper Neches river basin. Committee members assist with the review and development of work plans, reports, basin monitoring plans, allocation of resources, and basin action plans. CRP Steering Committee meetings are held annually, typically in the spring. The committee is made up from a diverse group of stakeholders, including:

- Private citizens
- Fee-payers (identified in Texas Water Code TWC 26.0135(h))
- Political subdivisions (including local, regional, and state officials)
- Texas State Soil and Water Conservation Board
- Other appropriate state agencies including: Texas Parks and Wildlife Department, Texas Water Development Board, Texas General Land Office, Texas Department of State Health Services, Texas Department of Agriculture, Texas Railroad Commission, and Texas Department of Transportation.
- Other entities interested in water quality matters including: Texas Commission on Environmental Quality regional staff, business and industry, agriculture, environmental and other public interest groups.

One of the objectives of the CRP Long-Term Plan is to engage and inform stakeholders. The Steering Committee process gives stakeholders an opportunity to contribute their ideas and concerns through Steering Committee meetings, public meetings, and other forums. The process also allows for the communication of issues related to water quality so that priorities may be set which consider local, regional, state, and federal needs. The Steering Committee aids in increasing opportunities for citizens to identify pressing issues and concerns, contribute ideas to the CRP process, and functions to expand the public's role in water quality management issues.

To become a member of the CRP Steering Committee, contact Dylan Coleman (dcoleman@anra.org).

Upcoming Items Of Interest

■ **BASIN SUMMARY REPORT**

Historically, every fifth year ANRA has prepared a Basin Summary Report, which provides an assessment of the Upper portion of the Neches River Basin, but the schedule was recently changed to align better with the Integrated report cycle, and it will be published every sixth year (every third biennium) in the future. The summary report identifies concerns related to the watershed, including an identification of water bodies with impaired or potentially impaired uses. The report also discusses the cause(s) and possible source(s) of use impairment, and recommends actions that may be used to address those concerns. The summary report also discusses the public benefits of the water quality monitoring and assessment program, including efforts to increase public input in activities related to water quality.

The most recent Basin Summary Report was prepared in 2015. Much like the Basin Highlights Report, this report is prepared in conjunction with the Texas Commission on Environmental Quality and ANRA's Clean Rivers Program Steering Committee. This report is distributed to Steering Committee members, as well as other interested parties, in either print or electronic versions. Current and historical reports are available on ANRA's website at <http://www.anra.org>.

ANRA will be publishing our next summary report in 2020. We look forward to presenting it to you.

Additional Information

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ANRA Operations

The Angelina & Neches River Authority promotes public involvement in the Upper Neches Basin through numerous operations and departments. In addition to monitoring water quality through the Clean Rivers Program, ANRA operates and maintains numerous public drinking water and municipal wastewater facilities, maintains the on-site septic system program for Sam Rayburn Reservoir, San Augustine County, and Angelina County, and operates an Environmental Laboratory offering services to the public. Additionally, ANRA produces and sells biosolids compost through our Neches Compost Facility.

Informational Literature

Numerous pamphlets, brochures, and other educational and informational literature on such topics as water quality, conservation, and on-site septic facilities are available to the public at ANRA's offices. ANRA supports the TPWD invasive species awareness campaign "Hello Giant Salvinia, Goodbye Texas Lakes" by making informational pamphlets available to the public.

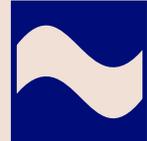
ANRA Publications

Every year, ANRA's Clean Rivers Program produces either a Basin Highlights Report or Basin Summary Report (every third biennium) that discusses water quality in the Neches River Basin. These reports are distributed to our Steering Committee members, interested stakeholders, and other interested parties.

ANRA Website

The Angelina & Neches River Authority provides the public with information concerning water quality issues on our website, which is updated frequently. The ANRA website provides public access to information on the Clean Rivers Program, current and historical Basin Summary and Basin Highlights reports, meeting agendas and minutes, maps, and water quality data.

Please visit us online at <http://www.anra.org>.



ANGELINA & NECHES RIVER AUTHORITY

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WWW.ANRA.ORG



RIVERINE PORTION OF SAM RAYBURN RESERVOIR