

San Antonio River Basin 2019 Basin Highlight Update Report



Figure 1: Lower San Antonio River Confluence with the Guadalupe River



Figure 2: The preparation of this report was financed through grants from and in cooperation with the Texas Commission on Environmental Quality

Basin Overview

The San Antonio River Basin is located in south central Texas. While the San Antonio River Authority's political jurisdiction is comprised of four counties (Bexar, Wilson, Karnes and Goliad), the actual basin consists of all or part of 13 counties. The basin extends north into the Texas Hill country in the lower portion of Kerr County and continues southeast to the Guadalupe River about 10 miles from San Antonio Bay. Most of the basin is rural, except Bexar County, which is in the center of the basin and consists of the City of San Antonio and various smaller municipalities. Five major perennial streams flow into the San Antonio River: Cibolo Creek, Leon Creek, Medina River, Medio Creek and Salado Creek. There were 13 classified (main-stem) and 29 unclassified stream segments (tributaries) assessed in the Draft 2016 IR. A total of 27 impairments were identified in the San Antonio River Basin. Impairments include elevated bacteria levels, depressed dissolved oxygen (DO), elevated chloride, fish consumption restrictions, and impaired fish communities.

The Texas Clean Rivers Program

Texas Clean Rivers Program, Senate Bill 818 (SB 818), known as the Texas Clean Rivers Act, was enacted in 1991 by the 72nd Legislature to ensure the comprehensive regional assessment of water quality in each watershed and river basin of the State. This program is administered by the TCEQ and is very different from any other monitoring program in Texas.

The [Texas Clean Rivers Program](#) (CRP) creates a partnership with river authorities and local agencies to create a network of monitoring stations that reported data to the TCEQ. Partnering with other agencies created an atmosphere of cooperation, and built bonds and communication between the agencies. Another aspect of the CRP was the early use of stakeholders to guide the program. Currently, the San Antonio River Authority (SARA) uses an [Environmental Advisory Committee](#) (EAC) made up of stakeholders from various geographical areas within the basin who represent a variety of professional interests. This group meets quarterly, and is routinely contacted through email. The EAC serves as SARA's CRP Steering Committee and provides input to the CRP and a variety of other SARA projects and programs that have an environmental component.

Perhaps the most unique aspect of the CRP is the attention to quality assurance. Early on, the CRP provided quality control and data management training to its partners as part of its program. By 1996, all work performed under a TCEQ contract involving the acquisition, generation and collection of environmental data was conducted in accordance with a TCEQ-approved Quality Assurance Project Plan (QAPP). Current QAPP's must meet all applicable TCEQ and United States Environmental Protection Agency (EPA) requirements. The [EPA QA/R-5, EPA Requirements for Quality Assurance Project Plans](#) describes a QAPP as a formal document that comprehensively details the required quality assurance and quality control (QA/QC) and other technical activities must be implemented to

ensure that the results of the work performed will satisfy the stated performance criteria. The QAPP must provide a project-specific “blueprint” for obtaining the type and quality of environmental data needed for TCEQ regulatory decisions and assessments. The QAPP should identify:

- The technical and quality objectives;
- The sampling and analytical methods and acceptable criteria to meet the projects objective;
- Measurement(s) or information describing environmental processes, sampling locations and frequencies, conditions, and ecological conditions;
- All technical and quality aspects of a project, including planning, implementation, and assessment;

- How QA/QC is used to assure the results obtained are of the type and quality needed and expected.
- As the data generated from the CRP is used in support of TCEQ Integrated Reports, Texas Surface Water Quality Standards (TSWQS) and stream water compliance decisions, the program operates under a TCEQ-approved CRP QAPP. Adherence to the QAPP ensures the water quality data generated is of known and documented quality. Information on SARA's CRP efforts and QAPPs can be viewed at [SARA's Clean Rivers Program website](https://www.sara-texas.org/clean-rivers-program/).

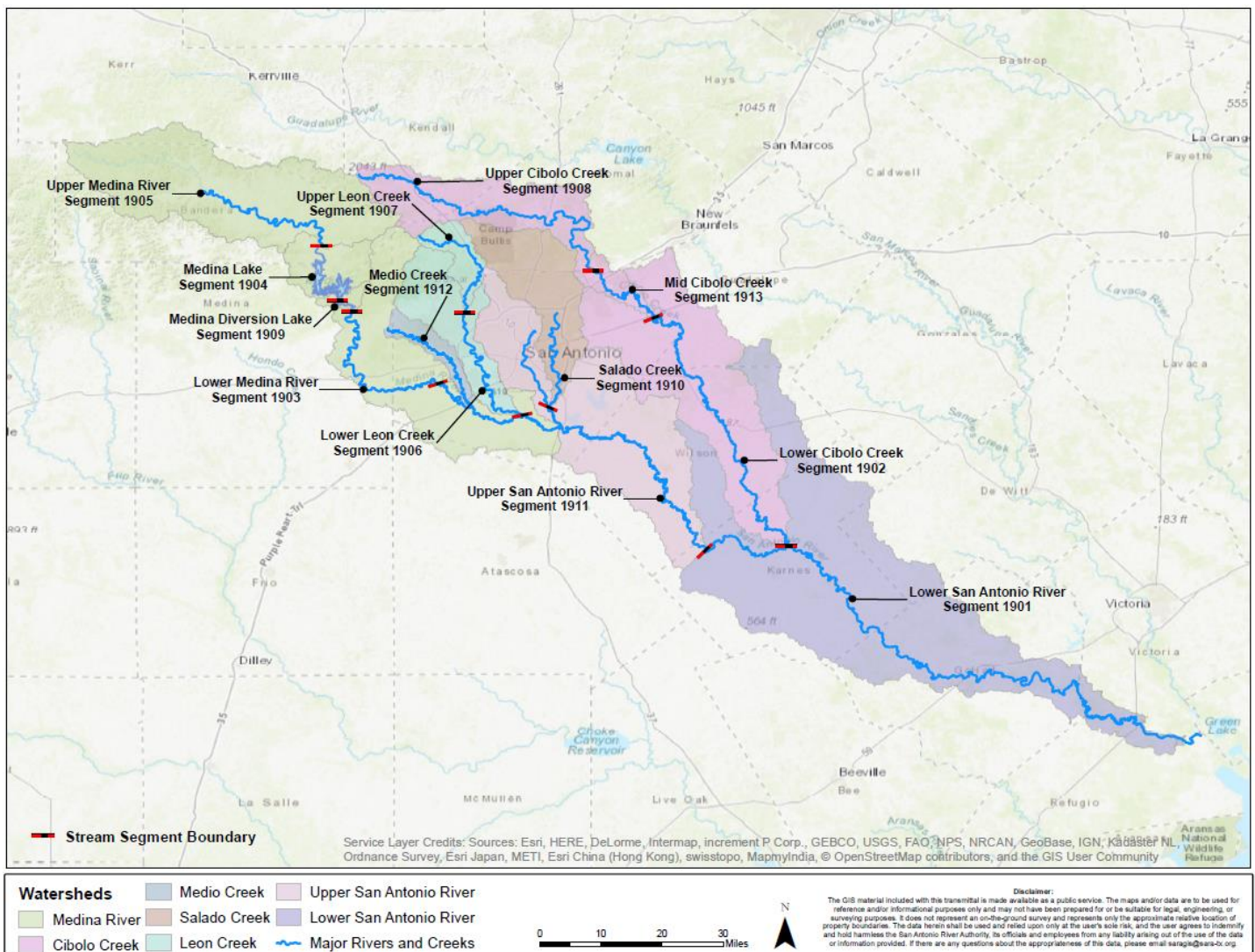


Figure 3: Major perennial streams flowing into the San Antonio River: Cibolo Creek, Leon Creek, Medina River, Medio Creek, and Salado Creek

Why Monitor?

Water quality monitoring is used to alert us to ongoing and emerging problems, to determine compliance with TSWQS, and to protect other beneficial uses of water throughout the San Antonio River Basin. Assessments based on the physical, chemical, biological, and microbiological characteristics of a waterbody helps the TCEQ measure the effectiveness of water policies, determine if water quality and riverine communities are getting better or worse, and formulate new policies to better protect human health and the environment.



Figure 4: Texas Logperch

The San Antonio River Basin is a dynamic ecosystem that drains over 4,194 square miles and contains over 8,800 miles of streams. The rivers, creeks, and streams have varying water characteristics, land uses, geology, and ecoregions. To remain adaptable to economic and environmental changes, each year SARA conducts a coordinated monitoring meeting (CMM) with the TCEQ and other basin monitoring partners. The CMM is a working meeting that addresses stakeholder concerns, comments, new and existing cooperative efforts, and

emerging priorities of the Basin. During the meeting, the upcoming annual Coordinated Monitoring Schedule (CMS) is reviewed and evaluated, segment by segment, station by station. This process ensures that Basin monitoring remains effective and viable, and prevents duplication, while maximizing the monitoring resources of the Basin. The CMS identifies sampling locations, associated maps, frequency of collections, parameters to be analyzed, as well as any relevant comments for sampling.

As a follow-up to the CMM, a “Summary of Changes” is produced. The summary reflects what decisions were made during the meeting, why a site was dropped or added, why the frequency was altered, why a parameter was dropped or added, why a monitoring need was unable to be addressed, and any future monitoring recommendations.

Participants in the CMS process continue to communicate schedule changes until the schedule is finalized. Once the CMS is finalized, the information is incorporated into a TCEQ-approved Quality Assurance Project Plan (QAPP). Past and current monitoring schedules are located at the [Coordinated Monitoring Schedule website](#). In 2018, routine water quality monitoring was conducted at 102 stations throughout the San Antonio River Basin. The CRP with additional funding from SARA along with the Bandera River Authority Ground Water District and TCEQ monitoring efforts, are the primary programs for the collection of water quality data in the San Antonio River Basin. Data generated from these programs are used in State assessments and compliance decisions.



Figure 5: Water Quality Monitoring in the Medina Diversion Lake

Educational and Awareness Initiatives

SARA manages and completes projects under a wide range of activities including water quality, scientific studies, park improvements, major infrastructure initiatives for flood control, stormwater management, and community amenities. Although SARA does contribute funding towards projects, the majority of funding comes from community partners, notably the City of San Antonio and Bexar County. Additional funding through federal, state and local grants also helps support SARA's mission of safe, clean, enjoyable creeks and rivers. Many of SARA's projects also support CRP goals to educate, maintain, and improve the quality of water within each watershed in the San Antonio River Basin through an ongoing partnership involving the TCEQ, other agencies, regional entities, local governments, industry, and citizens. The CRP's watershed management approach identifies and evaluates water quality issues, establishes priorities for corrective action, works to implement those actions, and adapts to changing priorities.

[The San Antonio River Watershed Creek Book:](#) The San Antonio River Authority (SARA) has developed a handbook for residents of the San Antonio River Basin that promotes individual environmental stewardship and appreciation for our creeks and river. Intended for rural landowners and urban residents throughout the entire San Antonio River Basin, the book focuses on how to modify everyday behaviors and practices to improve water quality, minimize waste and reduce consumption of natural resources. SARA developed this manual to raise awareness of the commonly underestimated effects of nonpoint source pollution on water quality and the importance of healthy creeks in our ecosystem.

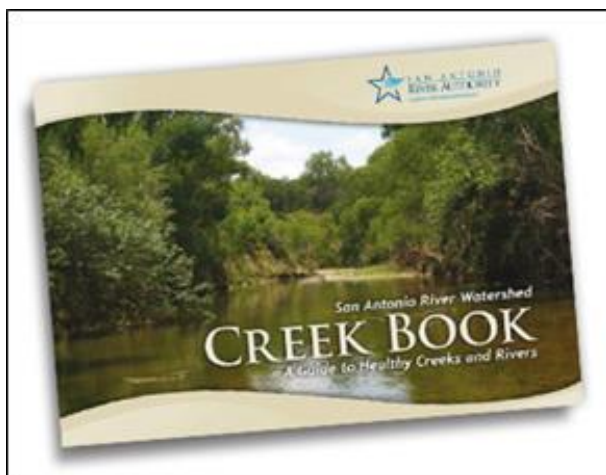


Figure 6: San Antonio River Watershed Creek Book

[Watershed Wise:](#) As a leader in environmental stewardship, the San Antonio River Authority (SARA) has developed an environmental awareness initiative designed to provide general watershed education to the residents of the San Antonio River Basin community and

to inform citizens about ways they can help protect and preserve the environment of the San Antonio River and its tributaries. This new environmental awareness initiative will encourage residents to "Be Watershed Wise" through a series of messages addressing issues such as general watershed education, prevention of illegal dumping, encouraging recycling and reducing the use of plastic bags, picking up your pet waste, proper lawn care and vehicle maintenance techniques and others.



Figure 7: Watershed Wise

[River Reach Community Newsletter:](#) River Reach is a quarterly newsletter designed to inform SARA's constituents about the agency's many projects, serve as a communication vehicle for the board of directors and foster a sense of unity and identity among the residents of Bexar, Wilson, Karnes and Goliad counties.

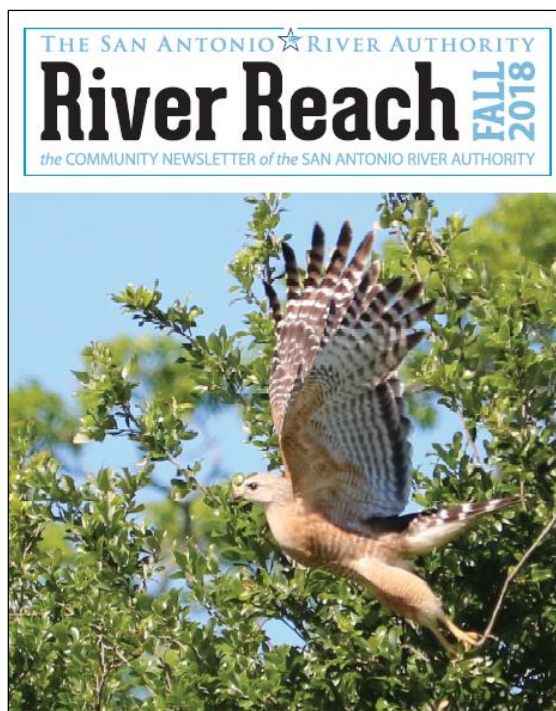


Figure 8: River Reach Newsletter

SARA's Educational Curricula and Materials: SARA has many resources for educational needs regarding topics including the San Antonio River, water quality, watersheds, and erosion. SARA also works closely with partner organizations to extend resources that can fit any classroom's needs regarding aquatic science topics. All lessons and resources provided are Essential Knowledge and Skill-aligned (TEKS). Examples of TEKS-aligned activities include:

- [Stormwater Runoff and Pollutant Travel through Watersheds](#)
- [Water for People and the Environment](#)
- [Building a Watershed Model](#)
- [Water Quality Testing Hands-On Activity](#)
- [Bays and Estuaries](#)
- [How to Build a Rain Garden](#)

River Recreation website: In support of the River Recreation website, *E. coli* bacteria and flow are collected weekly at eight sites throughout the San Antonio River Basin. Water quality data indicates the most widespread water quality problem within the San Antonio River Basin is high levels of bacteria after rain events. The samples are collected so the results of the

bacteria analysis can be placed on the website each Friday morning. The website presents bacteria, flow, and other information about recreational opportunities throughout the basin. Although not on the website, in support of the CRP, SARA routine monitoring parameters are also collected at these site.



Figure 9: Kayaking on the San Antonio Mission Reach

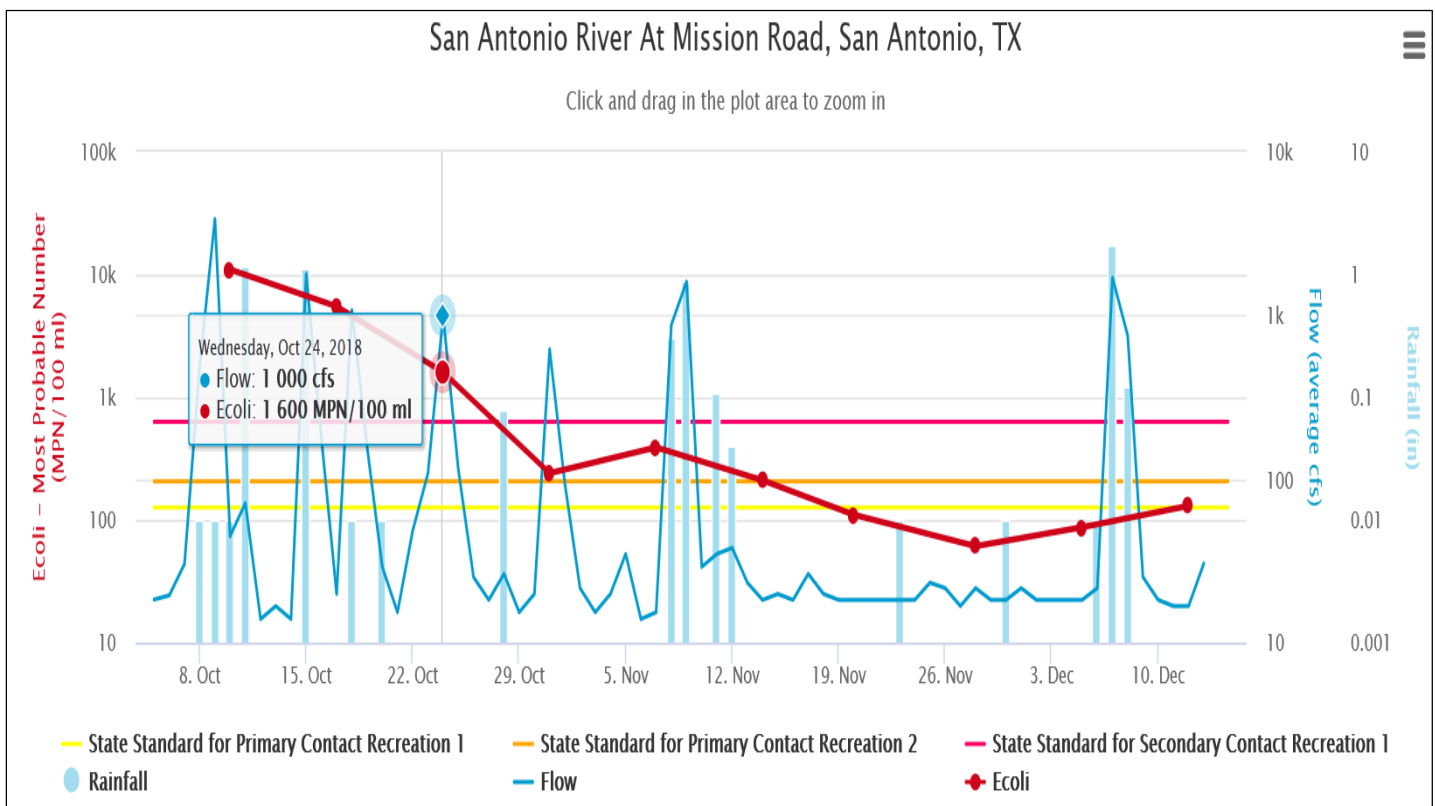


Figure 10: River Recreation *E. coli* versus Flow at San Antonio River at Mission Road

Assessment of the San Antonio River Basin

Every five years, SARA publishes a Basin Summary Report as required by the CRP. This report, last conducted in 2018, provides a detailed review of parameters analyzed, designated uses and associated water quality concerns and impairments in the San Antonio River Basin. The 2018 summary report, including past highlight reports, are available at [SARA's Basin Highlights and Summary Report website](#).



Figure 11: San Antonio River Basin 2018 Summary Report

Water quality data, habitat assessments and fish and macrobenthic communities are assessed every two years in even-numbered years by the TCEQ. Results of the assessments are published as the [Texas Integrated Report of Surface Water Quality](#). The Texas Integrated Report evaluates the quality of surface waters in the State and provides resource managers with a tool for making informed water quality decisions. The Texas Integrated Report describes the status of Texas' natural waters based on historical data and the extent to which they attain the Texas Surface Water Quality Standards. The Texas Integrated Report satisfies the requirements of the federal Clean Water Act Sections 305(b) and 303(d). The 303(d) List must be approved by the EPA before it is final.

The purposes of this basin highlights update report is to provide a brief update on the Draft 2016 TCEQ Integrated Report and on basin activities that have occurred during the 2018 year. Water quality monitoring events include physicochemical, biological, and hydrological information from waterbodies throughout the San Antonio River Basin. Smaller unclassified waterbodies are also monitored to evaluate and define water quality and to respond to perceived risk for pollution. Routine water quality parameters collected under CRP include: pH, dissolved oxygen, conductivity,

water temperature, field observations, stream flow, total suspended solids, sulfate, chloride, nitrate, nitrite, *E. coli*, ammonia nitrogen, total Kjeldahl nitrogen, and total phosphorus. At selected stations, metals in water and sediment, 24-hour diel measurements, nekton (fish), macrobenthic invertebrate, and habitat information are also collected. In 2018, routine water quality monitoring was conducted at 102 stations throughout the San Antonio River Basin. The information in this section and in the table summarize of the impairments and concerns as identified in the Draft 2016 Integrated Report, are identified for each of the 13 watershed in the San Antonio River Basin. If an impairment or concern is listed below it means a portion of the segment was identified in the Texas Integrated Report.

Lower San Antonio River – Segment 1901

The Lower San Antonio River starts from the confluence with the Guadalupe River in Refugio/Victoria County to a point 600 meters (660 yards) downstream of FM 791 at Mays crossing near Falls City in Karnes County.

- Impairment - bacteria and fish community
- Concerns - fish community, habitat, nitrate nitrogen, total phosphorus, and chlorophyll-a

Unclassified stream segments of the Lower San Antonio River include:

- Segment 1901A Escondido Creek – bacteria impairment; concerns for nitrate nitrogen and total phosphorus
- Segment 1901B Cabeza Creek – bacteria impairment
- Segment 1901E Manahuilla Creek – bacteria concern
- Segment 1901F Ecletto Creek – dissolved oxygen impairment; concerns for chlorophyll-a and dissolved oxygen



Figure 13: Guadalupe Bass in the Lower San Antonio River

Lower Cibolo Creek – Segment 1902

The Lower Cibolo Creek extends from the confluence with the Lower San Antonio River in Karnes County to a point 100 meters (110 yards) downstream of IH-10 in Bexar/Guadalupe County.

- Impairment - bacteria
- Concerns - fish community, nitrate nitrogen, and total phosphorus

Tributaries of the Lower Cibolo Creek include:

- Segment 1902A Martinez Creek – bacteria impairment; concerns for bacteria, nitrate nitrogen, and total phosphorus
- Segment 1902B Salitrillo Creek - concerns for ammonia nitrogen, nitrate nitrogen, and total phosphorus
- Segment 1902C Clifton Branch – dissolved oxygen impairment; concerns for dissolved oxygen and total phosphorus



Figure 14: Flathead Catfish in the Lower Cibolo Creek

Medina River Below Medina Lake - Segment 1903

The Medina River below Medina Lake extends upstream from its confluence with the San Antonio River in southeast Bexar County to the Medina Diversion Dam in Medina County.

- Impairment - bacteria
- Concerns – bacteria, ammonia nitrogen, nitrate nitrogen, and total phosphorus



Figure 15: Green Sunfish in the Lower Medina River

Medina Lake – Segment 1904

Medina Lake extends from Medina Lake Dam in Medina County to a point immediately upstream of the confluence of Red Bluff Creek in Bandera County, up to the normal pool elevation of 1064.2 feet. No impairments or concerns have been identified.

Medina River Above Medina Lake – Segment 1905

The Medina River above Medina Lake extends from a point immediately upstream of the confluence of Red Bluff Creek in Bandera County to the confluence of the North Prong Medina River and West Prong Medina River in Bandera County.

- Impairment - fish community
- Concerns - fish community and habitat

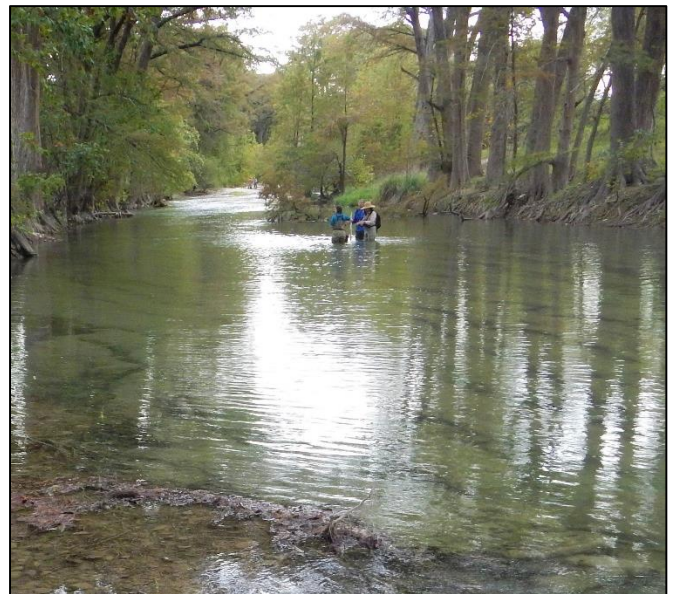


Figure 16: Biological Monitoring in the Upper Medina River

Lower Leon Creek – Segment 1906

Lower Leon Creek extends from the confluence with the Medina River in Bexar County to a point 100 meters (110 yards) upstream of State Highway 16 northwest of San Antonio in Bexar County.

- Impairments - fish consumption advisory, do not consume any species of fish from the Lower Leon Creek
- Concerns - bacteria, 24-hr dissolved, chlorophyll-a, and silver in sediment



Figure 17: Station 14198 Leon Creek Upstream of the Leon Creek WWTP

Upper Leon Creek – Segment 1907

The Upper Leon Creek extends from a point 110 yards upstream of SH-16 (Bandera Road) northwest of San Antonio in Bexar County to a point 5.6 miles upstream of Scenic Loop Road north of Helotes in Bexar County.

- Concern - nitrate nitrogen



Figure 18: Upper Leon Creek Watershed High Flow

Upper Cibolo Creek – Segment 1908

The Upper Cibolo Creek starts a little more than 10 miles northwest of the City of Boerne, approximately one mile upstream of the confluence of Champee Springs in Kendall County, and ends at the Missouri-Pacific Railroad Bridge west of Bracken, Texas.

- Impairments - bacteria and chloride
- Concerns - total phosphorus and dissolved oxygen

Medina Diversion Lake – Segment 1909

The Medina Diversion Lake in Medina County, extends from Medina Diversion Dam to Medina Lake Dam and reaches the normal pool elevation of 926.5 feet (impounding the Medina River). No impairments or concerns have been identified.



Figure 19: Water Quality Monitoring in Medina Diversion Lake

Salado Creek – Segment 1910

Salado Creek extends from the confluence with the San Antonio River in Bexar County to the confluence of Beitel Creek in Bexar County.

- Impairments - bacteria and dissolved oxygen
- Concerns - macrobenthic and fish community, 24-hr dissolved oxygen, and nitrate nitrogen

Tributaries of Salado Creek include:

- Segment 1910A Walzem Creek – bacteria impairment
- Segment 1910C Salado Creek Tributary – bacteria concern
- Segment 1910D Menger Creek – bacteria impairment; concern for dissolved oxygen
- Segment 1910E Beitel Creek – concern for dissolved oxygen
- Segment 1910F Upper Salado Creek - concern for chlorophyll-a



Figure 20: Water Quality Monitoring in the Salado Creek Watershed



Figure 21: 2018 Mike Gonzales Memorial Intern Celicia Garza, Upper San Antonio River Watershed

Upper San Antonio River – Segment 1911

The Upper San Antonio River extends from a point 600 meters (660 yards) downstream of FM 791 at Mays Crossing near Falls City in Karnes County to a point 100 meters (110 yards) upstream of Hildebrand Avenue at San Antonio in Bexar County.

- Impairments - bacteria and fish community
- Concerns – ammonia nitrogen, nitrate nitrogen, total phosphorus, fish community, and habitat

Tributaries of the Upper San Antonio River include:

- Segment 1911B Apache Creek – bacteria impairment; concerns for dissolved oxygen, and nitrate nitrogen
- Segment 1911C Alazan Creek – bacteria impairment; concern for chlorophyll-a
- Segment 1911D San Pedro Creek – bacteria impairment; concern for nitrate nitrogen
- Segment 1911E Sixmile Creek – bacteria impairment
- Segment 1911H Picoso Creek – impairments for dissolved oxygen; concern for dissolved oxygen
- Segment 1911I Martinez Creek - bacteria impairment; concern for dissolved oxygen
- Segment 1911J Pajarito Creek – bacteria concern
- Segment 1911K Seguin Branch – bacteria concern
- Segment 1911L Unnamed tributary of Upper San Antonio River – concern for dissolved oxygen

Medio Creek – Segment 1912

Medio Creek extends upstream from its confluence with the Medina River in southwest Bexar to a point 1.0 Kilometer (0.6 miles) upstream of IH 35 in San Antonio in Bexar County.

- Concerns – nitrate nitrogen and total phosphorus

Tributaries of Medio Creek:

- Segment 1912A Upper Medio Creek - concerns for nitrate nitrogen and total phosphorus



Figure 22: Channel Catfish Medio Creek Watershed

Mid Cibolo Creek – Segment 1913

Mid Cibolo Creek begins at the Missouri-Pacific Railroad Bridge west of the City of Bracken and ends 110 yards downstream of IH-10.

- Impairments - dissolved oxygen; concerns for nitrate nitrogen and total phosphorus

Table 1: Draft 2016 TCEQ Integrated Report San Antonio River Basin Impairments and Concerns

Segment	Segment Description	Parameters of Impairment	Parameters of Concern
1901	Lower San Antonio River	Bacteria and fish community	Habitat, fish community, nitrate nitrogen, total phosphorus, chlorophyll-a
1901A	Escondido Creek	Bacteria	Nitrate nitrogen and total phosphorus
1901B	Cabeza Creek	Bacteria	No Concerns
1901E	Manahuilla Creek	No Impairments	Bacteria
1901F	Ecletto Creek	Dissolved oxygen	Chlorophyll-a and dissolved oxygen
1902	Lower Cibolo Creek	Bacteria	Fish community, nitrate nitrogen, total phosphorus
1902A	Martinez Creek	Bacteria	Bacteria, nitrate nitrogen, total phosphorus
1902B	Salitrillo Creek	No Impairments	Ammonia nitrogen, nitrate nitrogen, total phosphorus
1902C	Clifton Branch	Dissolved oxygen	Dissolved oxygen, total phosphorus
1903	Medina River Below Medina Diversion Lake	Bacteria	Bacteria, ammonia nitrogen, nitrate nitrogen, total phosphorus
1904	Medina Lake	No Impairments	No Concerns
1905	Medina River Above Medina Lake	Fish community	Habitat, and fish community
1906	Lower Leon Creek	Fish Consumption Advisory	Bacteria, dissolved oxygen, chlorophyll-a, silver in sediment
1907	Upper Leon Creek	No Impairments	Nitrate nitrogen
1908	Upper Cibolo Creek	Bacteria and chloride	Total phosphorus and dissolved oxygen
1909	Medina Diversion Lake	No Impairments	No Concerns
1910	Salado Creek	Bacteria and Dissolved oxygen	Macrobenthic and fish community, dissolved oxygen, nitrate nitrogen
1910A	Walzem Creek	Bacteria	No Concerns
1910C	Salado Creek Tributary	No Impairments	Bacteria
1910D	Menger Creek	Bacteria	Dissolved oxygen
1910E	Beitel Creek	No Impairments	Dissolved oxygen
1910F	Upper Salado Creek	No Impairments	Chlorophyll-a
1911	Upper San Antonio River	Bacteria and fish community	Ammonia nitrogen, nitrate nitrogen, total phosphorus, fish community, habitat
1911B	Apache Creek	Bacteria	Dissolved oxygen and nitrate nitrogen
1911C	Alazan Creek	Bacteria	Chlorophyll-a
1911D	San Pedro Creek	Bacteria	Nitrate nitrogen
1911E	Sixmile Creek	Bacteria	No Concerns
1911H	Picosa Creek	Dissolved oxygen	Dissolved oxygen
1911I	Martinez Creek	Bacteria	Dissolved oxygen
1911J	Pajarito Creek	No Impairments	Bacteria
1911K	Seguin Branch	No Impairments	Bacteria
1911L	Unnamed tributary of Upper San Antonio River	No Impairments	Dissolved oxygen
1912	Medio Creek	No Impairments	Nitrate nitrogen and total phosphorus
1912A	Upper Medio Creek	No Impairments	Nitrate nitrogen and total phosphorus
1913	Mid Cibolo Creek	Dissolved oxygen	Nitrate nitrogen and total phosphorus
End of Table			

Water Quality Projects

Basin activities and water quality projects are designed to communicate information about water quality, sediment pollutants, aquatic and riparian habitats and organism's health. The information gathered from these initiatives are used to preserve, restore, and protect the aquatic health in the San Antonio River Basin, estuaries, bays, creeks, and to influence management decisions.

One Total Maximum Daily Load for Bacteria in the Lower San Antonio River Report: The Lower San Antonio River was first identified as impaired for recreational use in 2000. In response to the listing, the TCEQ developed the Lower San Antonio River Bacteria Total Maximum Daily Load (LSAR TMDL) to determine the amount, or loading, of a pollutant the San Antonio River could receive and still support its designated uses. The allowable load was then allocated among categories of sources within the watershed. Possible sources of contamination included discharges from wastewater treatment facilities, urban and non-urban stormwater runoff, contributions from wildlife, pets and livestock, leaking sewer infrastructure and failing septic systems. The TCEQ adopted the LSAR TMDL on August 20, 2008, and the EPA's approved it on October 20, 2008.



Figure 23: American Eel caught and released in the Lower San Antonio River Watershed

Implementation Plan for Five Total Maximum Daily Loads for Bacteria in the Lower San Antonio River

Watershed Report: The TCEQ TMDL Program contracted with Texas A&M AgriLife Research to work with stakeholders to develop a Lower San Antonio River Implementation Plan (LSAR I-Plan) that will describe the steps the watershed stakeholders and the TCEQ will take toward achieving pollutant reductions identified in the TMDL report, and outline the schedule for implementation activities. The ultimate goal of the LSAR I-Plan is to restore the primary contact recreation uses in Segments 1901 by reducing concentrations of bacteria to levels established in the 2008 LSAR TMDL. The TMDL document was based on segment units (Segment 1901) but the TCEQ program now uses assessment units (AUs) within segments. The LSAR I-Plan will focus on the five impaired TMDL Assessment Unit (AU) watersheds within the original segment, but some information based on the TMDL covers the full segment watershed. On August 8, 2018, the commission approved the I-Plan for the river.

Mid and Lower Cibolo Creek Watershed Protection Plan:

In 2017, the Mid and Lower Cibolo Creek Watershed Protection Plan (WPP) was initiated to address bacteria and depressed Dissolved Oxygen (DO) impairments in the watersheds. The WPP was developed by the stakeholders through the Mid and Lower Cibolo Creek Watershed Coordination Committee with support from the Texas Water Resources Institute (TWRI), SARA and the Texas State Soil and Water Conservation Board (TSSWCB). The WPP, guided by stakeholder input and the best available data and science, identified BMPs to ensure the bacterial and DO impairments identified in the 2014 IR are addressed in the development of the WPP. The WPP will include three stormwater monitoring stations in the Mid and Lower Cibolo Creek at Station 12806 Cibolo Creek at CR 337 Southeast of La Vernia, Station 12919 Cibolo Creek at IH 10/US90 East Bank and Station 20777 Cibolo Creek at FM 2724 Northeast of Panna Maria. The water quality data generated will be used to estimate *E. coli* and other pollutant(s) loading within the watershed and act as a base of information for planning purposes. As of this report the project is ongoing.



Figure 24: Feral Hog, picture courtesy of Texas A&M AgriLife Extension

Basin Efforts

Feral Hog Management Program: During the 2018 year, SARA worked with [Texas A&M AgriLife](#) and the [US Department of Agriculture \(USDA\) - APHIS Wildlife Services](#) to promote feral hog education and management strategies to landowners in SARA's four-county jurisdiction. The goal of the Feral Hog Management Program is to connect landowners to local and state agencies with experience in this issue and help minimize feral hog damage in the region. Managing the feral hog population in the four-county region will help to protect public and private lands as well as improve the water quality of the creeks and rivers in the San Antonio River Watershed.

Cibolo Creek Watershed Segment Boundary Re-Definition Effort: In 2015, SARA, in collaboration with the TCEQ and the City of Boerne, initiated the Cibolo Creek Watershed Segment Boundary Re-Definition Effort. The purpose of the effort was to assist the TCEQ in assigning more appropriate segment boundaries, in respect to the recharge zone of the Edwards Aquifer, for the Upper, Mid and Lower Cibolo Creek Watersheds based on hydrology. Appropriate boundary adjustments to reflect flow conditions for the three segments would ensure proper aquatic life use designations and DO

criteria. In 2016, the data was submitted to the TCEQ. Flow data supported the presumption of a perennial high aquatic life use designation for the Upper and Lower Cibolo Creek, but an intermittent with perennial pools with a limited aquatic life use designation for Mid Cibolo Creek. The revisions were sent to the TCEQ commissioners for proposal on August 23, 2017 with a 30-day comment period to close on October 17, 2017. Final revisions were presented to the commissioners and adopted as a final rule on February 7, 2018. The final rulemaking was published in the February 23, 2018, issue of the Texas Register, and became effective as a State rule on March 1, 2018. An [Overview of Major Revisions to the Texas Surface Water Quality Standards](#) supported the findings and included revisions to the segment description for Lower Cibolo Creek, Mid Cibolo Creek, and the Lower Cibolo Creek. On February 27, 2018, a submittal package in support of the adopted revisions to the 2018 Standards was sent to the EPA Region 6 for approval. On November 2, 2018 the EPA forwarded an [EPA Review of the 2018 Texas Surface Water Quality Standards letter](#) to the TCEQ indicating that the EPA will take a separate action on the revised boundary description for the Cibolo Creek Watershed. Until the EPA approves the revisions, the revisions cannot be used for federal actions, which includes permitting and the IRs.

SARA Water Quality Viewer: The San Antonio River Authority's Environmental Sciences Department, along with its partners, collects water quality monitoring, biological community, and habitat data throughout the San Antonio River Basin. The TCEQ utilizes this data to produce Integrated Reports every two years in even-numbered years and satisfies the requirements of the federal Clean Water Act Sections 305(b) and 303(d). SARA's Water Quality Viewer displays the most currently EPA approved TCEQ [Texas Integrated Report Assessment](#) to summarize water quality in the Basin to the extent to which it attains the [Texas Surface Water Quality Standards](#). The data can be downloaded from the viewer and analyzed through a Geographic Information System (GIS) application. Information generated can be used in various reports using graphs, charts, and maps. The SAR Water Quality Viewer serves as an important tool to inform stakeholders and

constituents, and promote cooperative watershed planning within the Basin.

How To Get Involved

SARA's Community Relations staff is busy producing SARA's quarterly newspaper, [the River Reach](#), and participating in numerous events promoting the environment and recreation within the Basin. They are also active in organizing Environmental Advisory Committee (EAC) quarterly meetings including the annual [CRP Steering Committee](#) meeting normally held between March-April of every year. If you would like to contact a member of the EAC or would like more information about becoming a committee member, please contact Barry Walker at (210) 302-3623 or bwalker@sara-tx.org.

SARA Water Quality Viewer

SARA - Environmental Sciences

Water Quality | Impairments & Concerns

Data Download

Download Full Datasets, by Extent

Description:
The links below provide instant access to the latest available data for their respective geographic scope related to the county or watershed. The data is available in .CSV format and contains a variety of information including but not limited to: water quality parameters, descriptions of the site location, site coordinates, and site ID's.

County	Watershed
Bandera	Medina River Watershed
Brewer	Medio Creek Watershed
Goliad	Cibola Creek Watershed
Guadalupe	Leon Creek Watershed
Karnes	Salado Creek Watershed
Kendall	Upper San Antonio River Watershed
Medina	Lower San Antonio River Watershed
Victoria	
Wilson	

View Data Dictionary

Water Quality Sample Stations

Search by address...

Figure 25: SARA Water Quality Viewer

End of the San Antonio River Basin 2019 Basin Highlight Update Report.