



Monitoring in the Mid and Lower Cibolo Creek Watershed

INSPIRING ACTIONS FOR HEALTHY CREEKS & RIVERS

CRP Overview

Quality-assured data for decision making

Identify, evaluate and adapt to existing and emerging water quality issues

CRP, SARA Monitoring and TCEQ are the primary programs for collecting and assessing WQ in the SAR Basin



Longear Sunfish (*Lepomis megalotis*)



CRP Routine Sampling

- *E. coli*
- Chloride
- Sulfate
- Total Kjeldahl nitrogen (TKN)
- Total suspended solids (TSS)
- Ammonia nitrogen
- Nitrite-nitrogen
- Nitrate-nitrogen
- Total phosphorus
- Chlorophyll-*a*
- Field
 - Temperature
 - pH
 - Conductivity
 - Dissolved oxygen
 - Secchi depth
 - Flow
- Metals in sediment (Specific sites throughout the basin)

CRP Biased Season Sampling

- Fish, benthic macroinvertebrates and habitat
- 24 hour dissolved oxygen
- Flow measurements



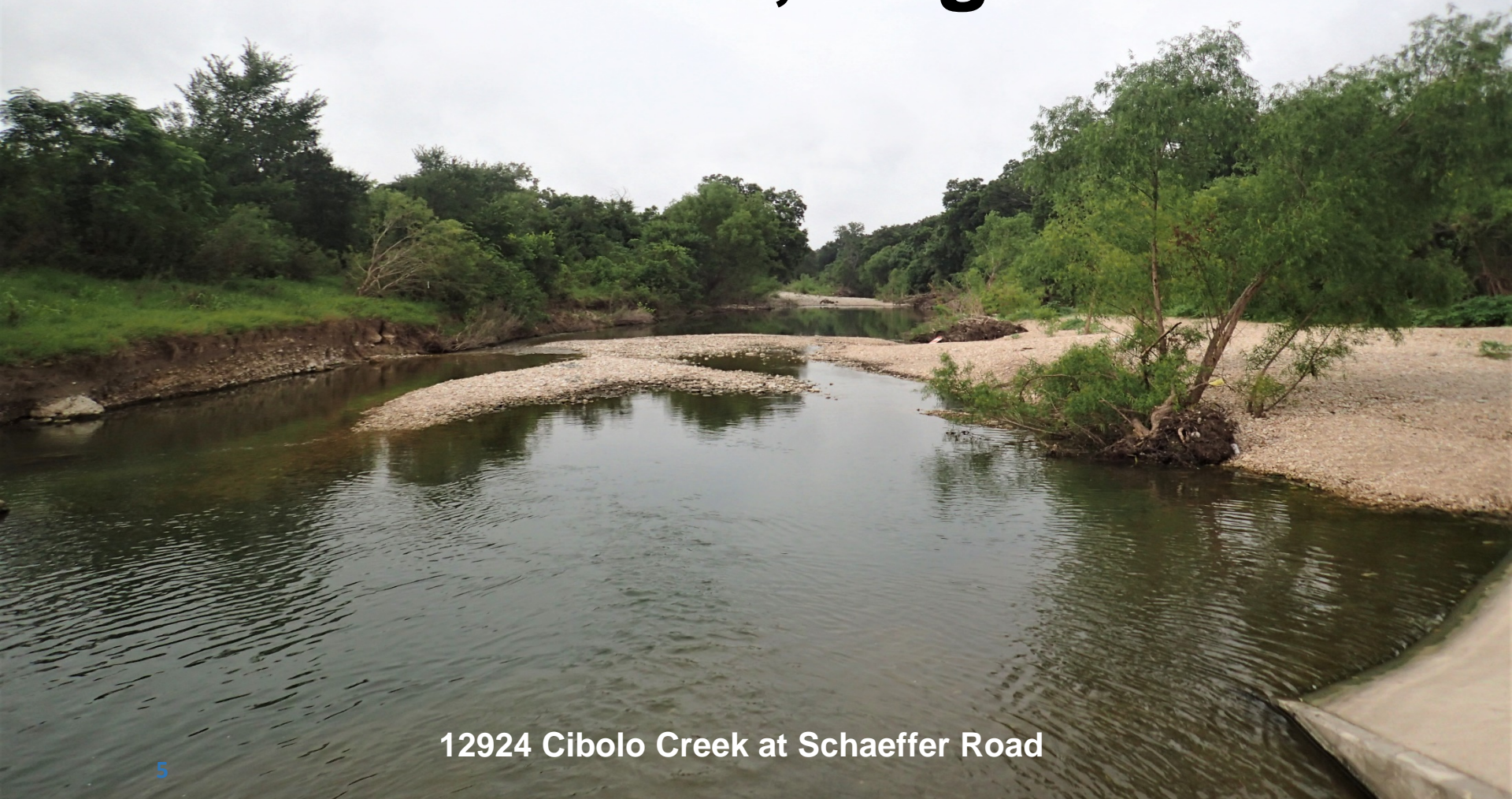


Texas Clean Rivers Program San Antonio River Basin 2013 Summary Report

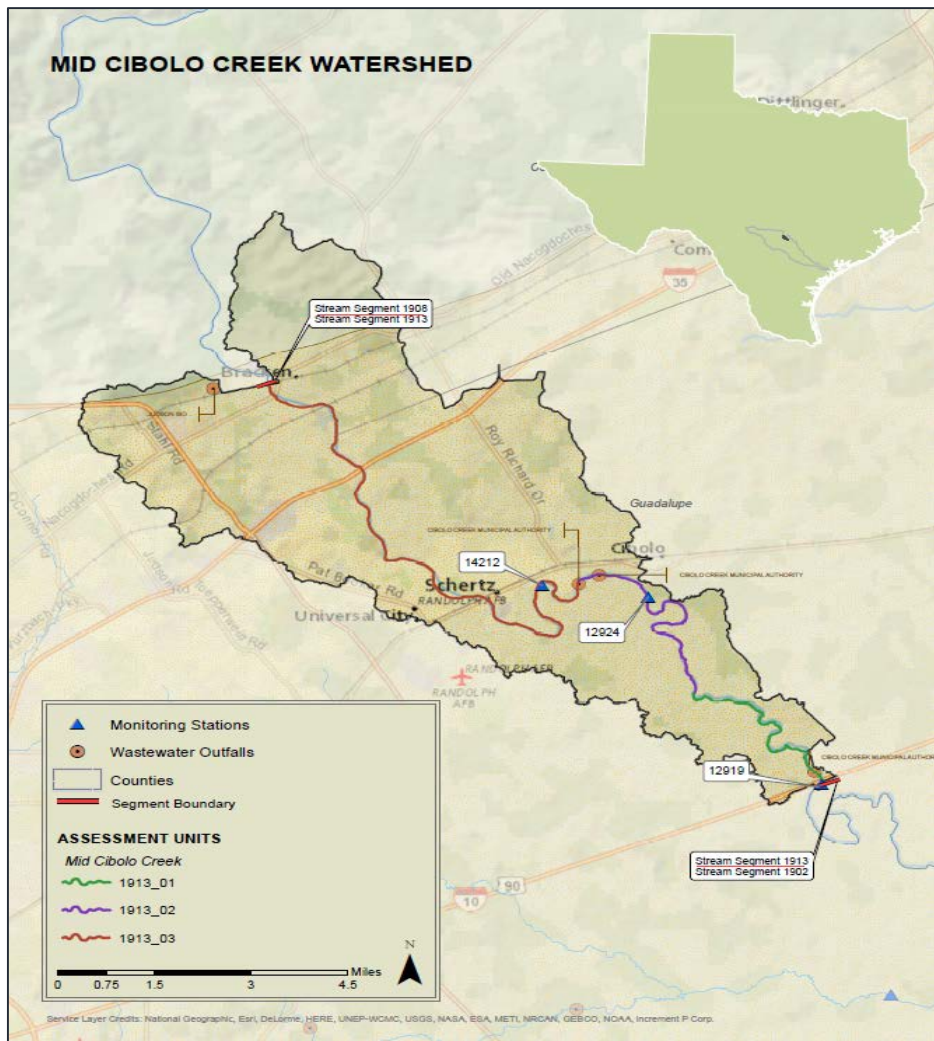
<https://www.sara-tx.org/wp-content/uploads/2015/06/2013BSR-web.pdf>

Prepared in cooperation with the Texas Commission on Environmental Quality
The preparation of this report was financed through grants from the Texas Commission on Environmental Quality

Mid Cibolo Creek, Segment 1913



12924 Cibolo Creek at Schaeffer Road



14212 Cibolo Creek Upstream Municipal WWTP



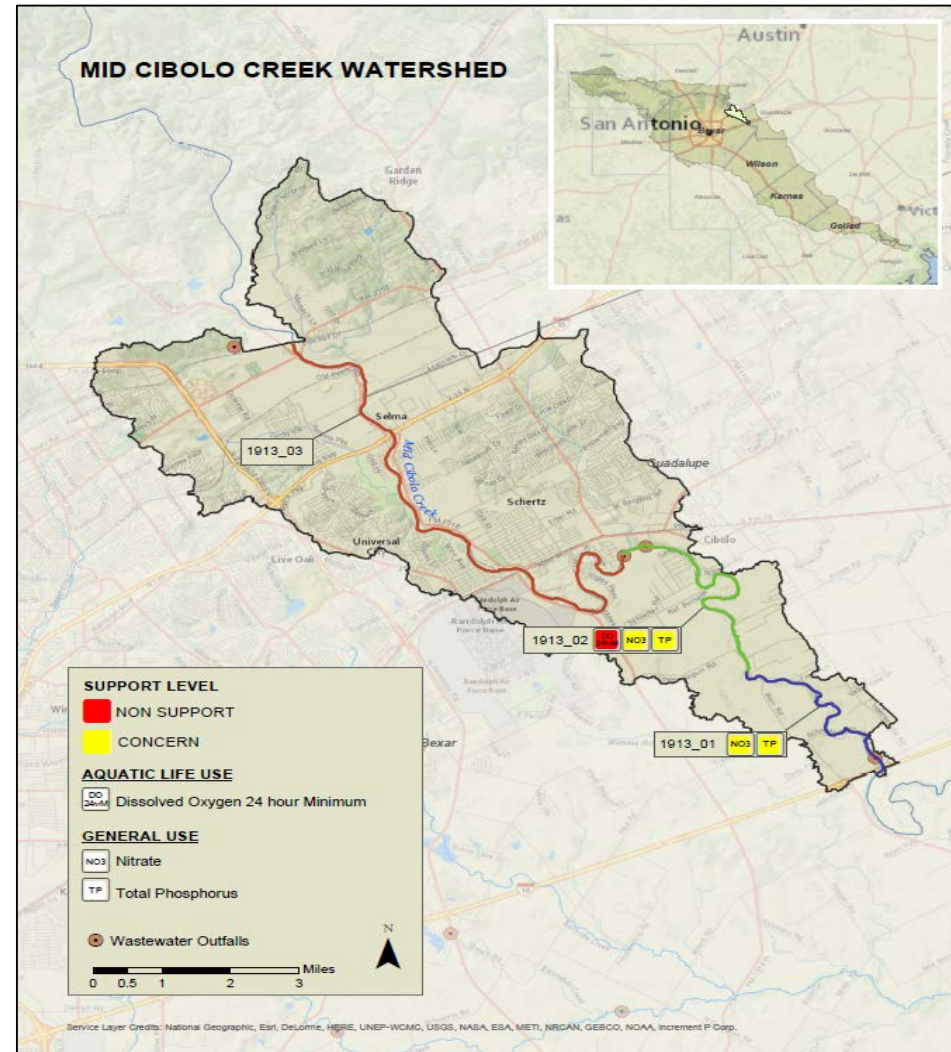
12919 Cibolo Creek at IH 10



Mid Cibolo Creek Impairments and Concerns

Watershed	Segment Type	Impairments and Concerns
1913 Mid Cibolo Creek	Perennial	24-Hour Dissolved Oxygen Minimum Impairment; Nitrate and Total Phosphorus Concerns

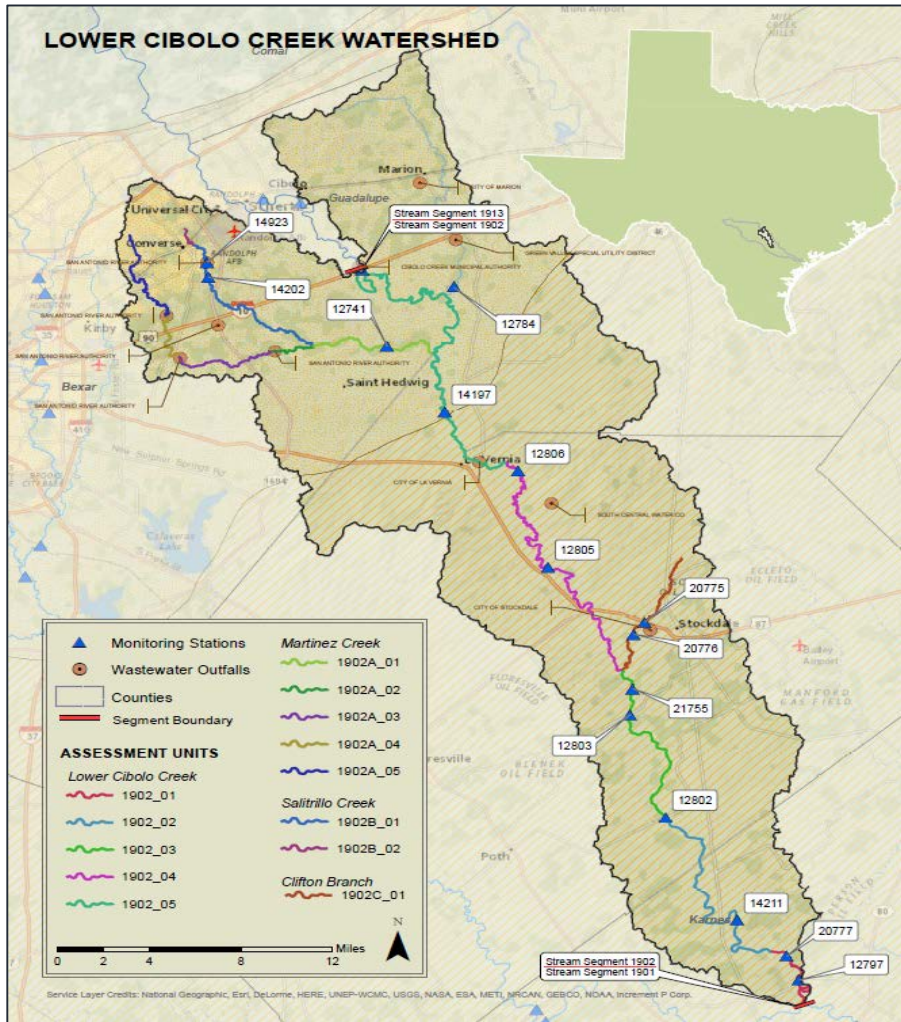
Station ID	Segment 1913 Mid Cibolo Creek	Metal Water	Metal Sediment	Chlorophyll Pheophytin	Conv	Bacteria	Flow	Field
12919	CIBOLO CREEK 40 METERS DOWNSTREAM FROM IH 10/US 90 ON EAST BANK	3	2	6	6	6	6	6
12924	CIBOLO CREEK AT SCHAEFFER RD 3 MI EAST OF RANDOLPH AFB			6	6	6	6	6
14212	CIBOLO CREEK UPSTREAM CIBOLO CREEK MUNICIPAL AUTHORITY'S OFF RIVER ROAD			6	6	6	6	6





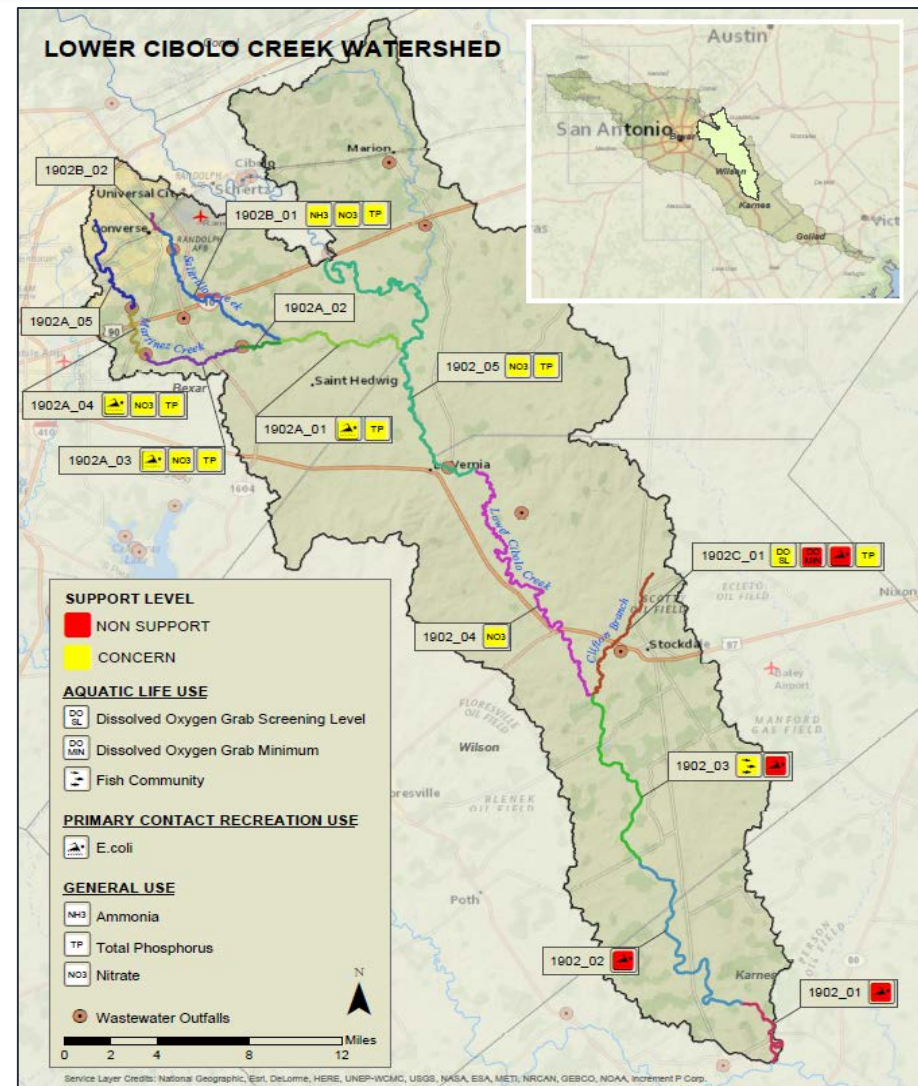
Lower Cibolo Creek, Segment 1902

12802 Cibolo Creek at FM 541 West of Kosciusko



Lower Cibolo Creek Impairments and Concerns

Watershed	Segment Type	Impairments and Concerns
1902 Lower Cibolo Creek	Perennial	Bacteria Impairment; Fish Community, Nitrate, and Total Phosphorus Concerns
1902A Martinez Creek	Perennial	Bacteria, Nitrate and Total Phosphorus Concerns
1902B Salitrillo Creek	Intermittent with Pools	Ammonia, Nitrate and Total Phosphorus Concerns
1902C Clifton Branch	Perennial	Bacteria and Dissolved Oxygen Grab Minimum Impairments; Dissolved Oxygen Grab Screening and Total Phosphorus Concerns



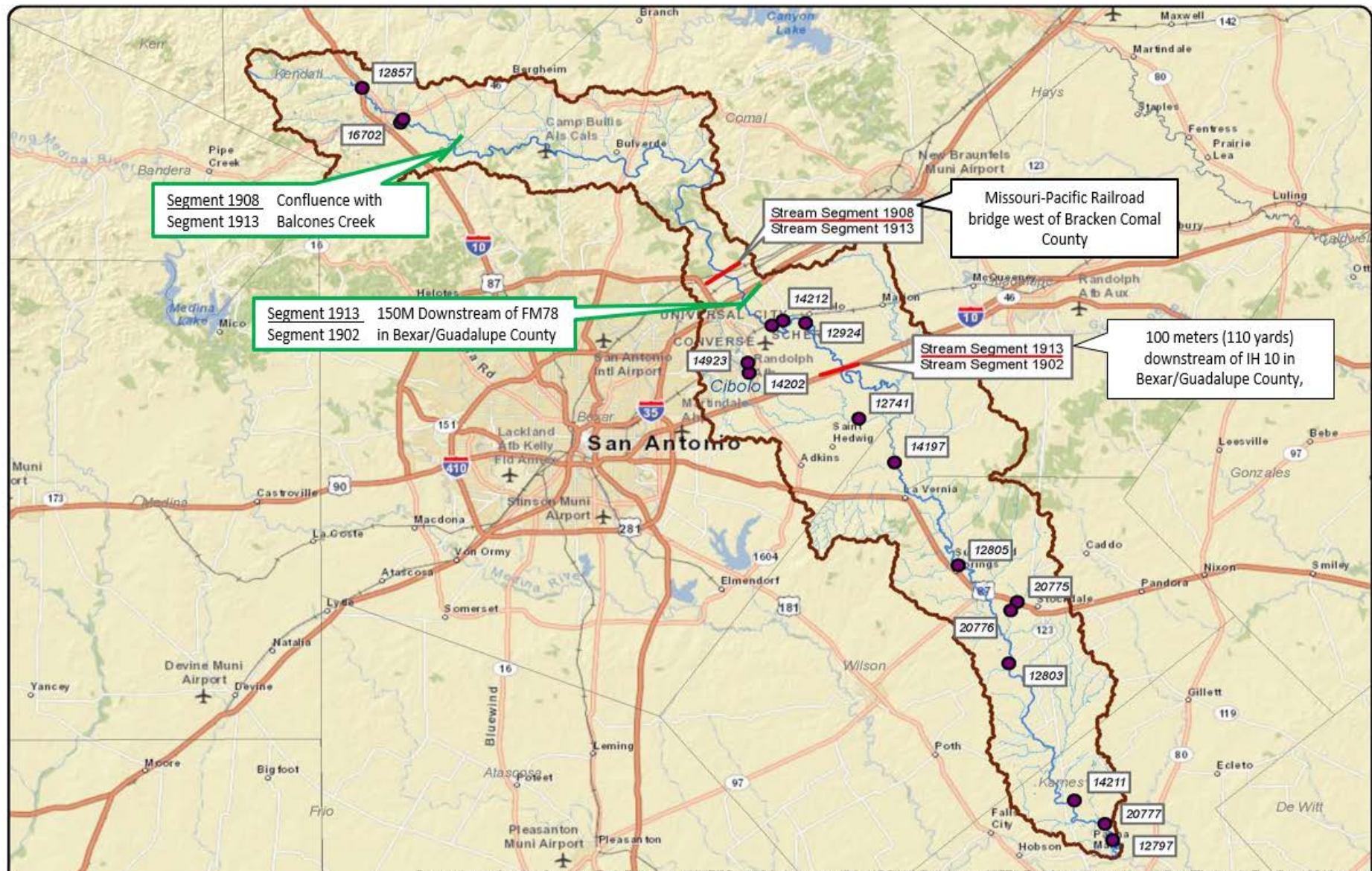
Lower Cibolo Creek FY17 Monitoring

Proposed FY18 CMS Site Description	Station ID	Waterbody ID	Assessment Unit	SE	CE	MT	24 hr DO	AqHab	Benthos	Nekton	Metal Water	Metal Sediment	Chlorophyll Phaeophytin	Conc	Bacteria	Flow	Field
SANTA CLARA CREEK ON CR 315 SANTA CLARA RD NORTHWEST OF NEW BERLIN 2.19 KM 1.34 MI UPSTREAM OF THE CONFLUENCE WITH CIBOLO CREEK	12784	1902	1902	SA	SA	RT							6	6	6	6	6
CIBOLO CREEK AT FM 81 EAST OF PANNA MARIA	12797	1902b	1902_01	SA	SA	RT							6	6	6	6	6
CIBOLO CREEK 28 METERS DOWNSTREAM FROM FM 537 ON WEST BANK 4 MI WEST OF SH 123 SOUTH OF STOCKDALE	12803	1902	1902_03	WC	FO	RT								4	4	4	4
CIBOLO CREEK AT FM 541 WEST OF KOSCIUSKO	12802	1902	1902_03	SA	SA	BS	1	1		1						1	1
CIBOLO CREEK AT SCULL CROSSING	14197	1902	1902_05	SA	SA	RT						2	6	6	6	6	6
CIBOLO CREEK AT CR389 NEAR CESTOWHWA TEXAS	14211	1902	1902_02	SA	SA	RT							6	6	52	52	6
CIBOLO CREEK AT FM 2724 3.9 KILOMETERS NORTHEAST OF PANNA MARIA	20777	1902	1902_01	SA	SA	RT					3	2		6	6	6	6
MARTINEZ CREEK ON NORTH GABLE ROAD SOUTH OF ZUEHL	12741	1902A	1902A_01	SA	SA	BS	1										
MARTINEZ CREEK ON NORTH GABLE ROAD SOUTH OF ZUEHL	12741	1902A	1902A_01	SA	SA	RT						2		6	6	6	6
SALTILLO CREEK AT AUTUMN RUN	14202	1902B	1902B_01	SA	SA	RT							6	6	6	6	6
SAN ANTONIO RIVER AUTHORITY'S Saltillo w/WTP 249 METERS DOWNSTREAM FROM SCHAEFER RD	14923	1902B	1902B_01	SA	SA	RT								6	6	6	6
CLIFTON BRANCH AT STATE HIGHWAY 97/US HIGHWAY 87 1.9 KILOMETERS NORTHWEST OF STOCKDALE	20775	1902C	1902C_01	SA	SA	RT								6	6	6	6
CLIFTON BRANCH AT STATE HIGHWAY 97/US HIGHWAY 87 1.9 KILOMETERS NORTHWEST OF STOCKDALE	20775	1902C	1902C_01	SA	SA	BS	2										
CLIFTON BRANCH AT OLD FLORESVILLE ROAD/WILSON COUNTY ROAD 401 2.7 KILOMETERS WEST OF STOCKDALE	20776	1902C	1902C_01	SA	SA	RT								6	6	6	6
CLIFTON BRANCH AT OLD FLORESVILLE ROAD/WILSON COUNTY ROAD 401 2.7 KILOMETERS WEST OF STOCKDALE	20776	1902C	1902C_01	SA	SA	BS	2										
CIBOLO CREEK APPROX 2.25 KM UPSTREAM OF FM 537 SOUTHWEST OF STOCKDALE	21755	1902	1902_03	SA	SA	BS	1	1		1						1	1
CIBOLO CREEK AT FM 539	12805	1902	1902_04	SA	SA	RT							6	6	6	6	6
CIBOLO CREEK AT COUNTY ROAD 337 SE OF LA VERNIA	12806	1902	1902_04	SA	SA	RT					3			6	6	6	6



Cibolo Creek Watershed Boundary Redefinition





Upper – Mid Cibolo Creek Boundary

Existing Boundary

Missouri-Pacific Railroad bridge
west of Bracken in Comal County



Proposed Boundary

Confluence of Balcones Creek and
the Cibolo Creek



Mid – Lower Cibolo Creek Boundary

Existing Boundary

100 meters (110 yards)
downstream of IH 10 in
Bexar/Guadalupe County



Proposed Boundary

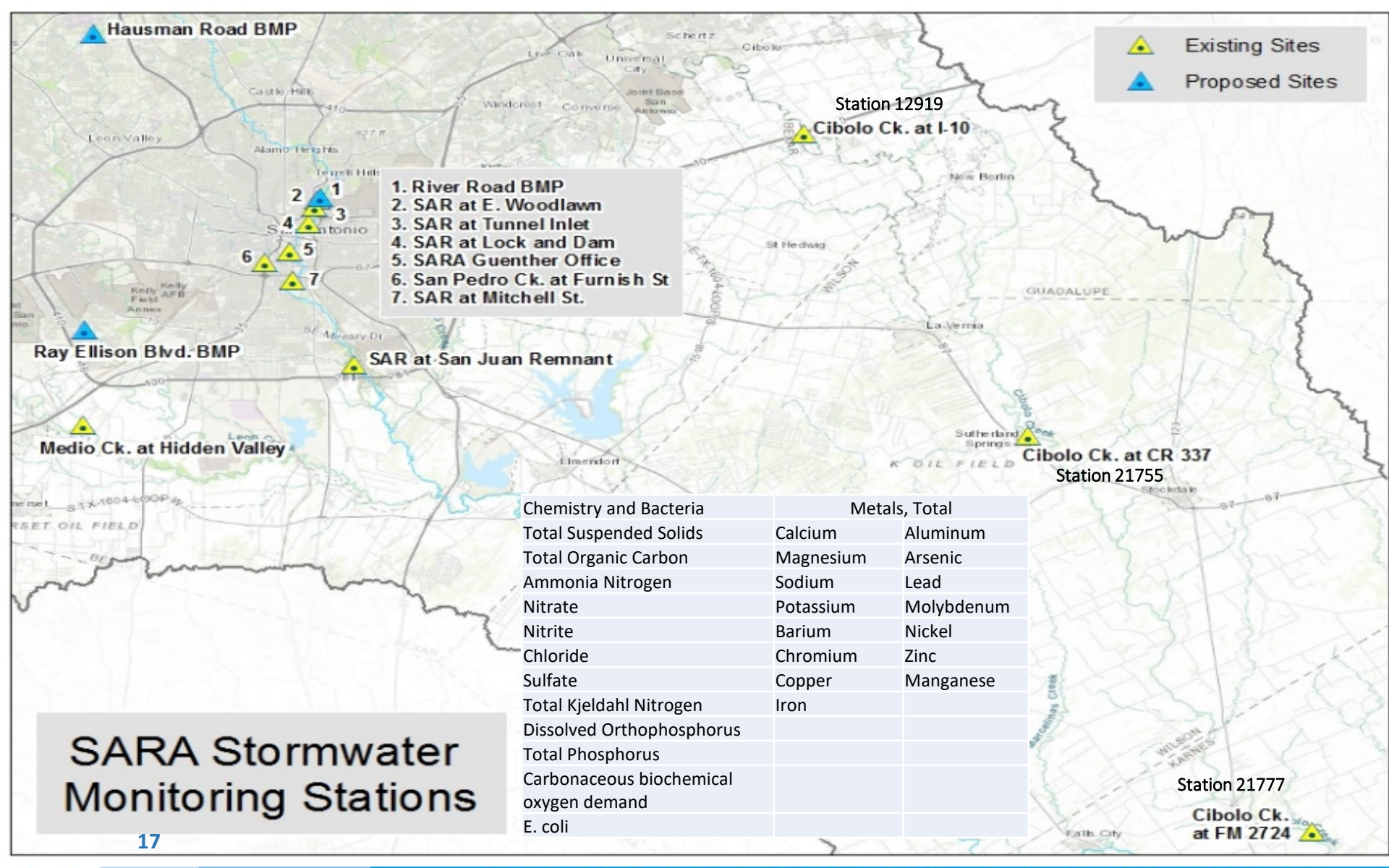
150 meters Downstream of FM78 in
Bexar/Guadalupe County



A photograph of a creek with a bridge in the background and dense vegetation on the banks. The water is calm and reflects the surrounding greenery. The bridge is a concrete structure with a metal railing, partially obscured by the trees. The vegetation is dense and lush, with many green leaves and some yellowing foliage. The overall scene is a natural, somewhat overgrown waterway.

Long Term Stormwater Monitoring

Station 12919 Cibolo
Creek IH10/US 90



SARA Stormwater Monitoring Stations

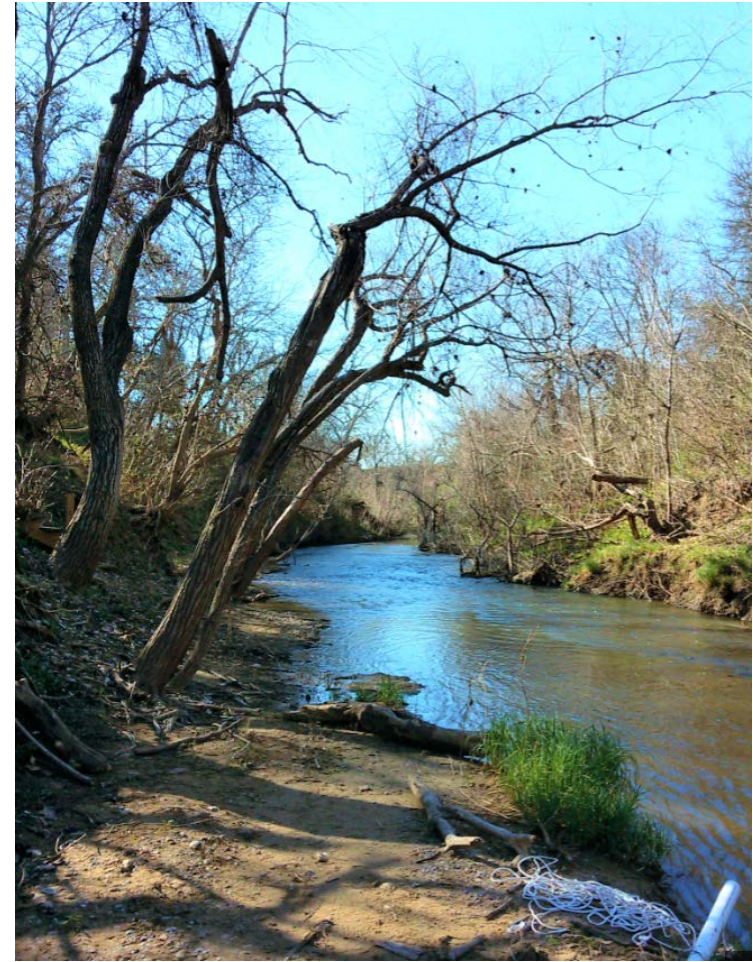
Station 12919 Cibolo Creek IH10/US 90



Station 20777 Cibolo Creek at FM 2724 NE Panna Maria



Station 21755 Cibolo Creek at FM537 West of Stockdale

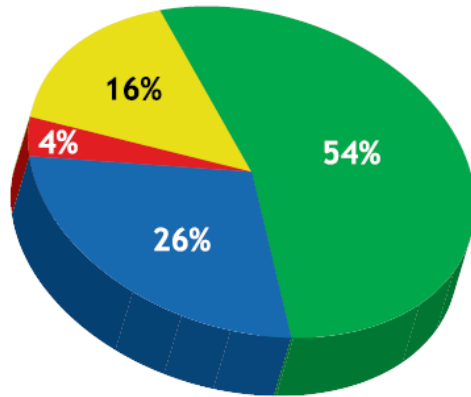


12802 Cibolo Creek @ FM 541

Bacteria Source Tracking

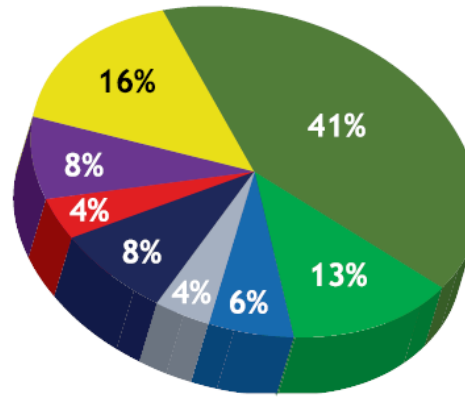
Bacteria Source Tracking

Overall 3-Way Split



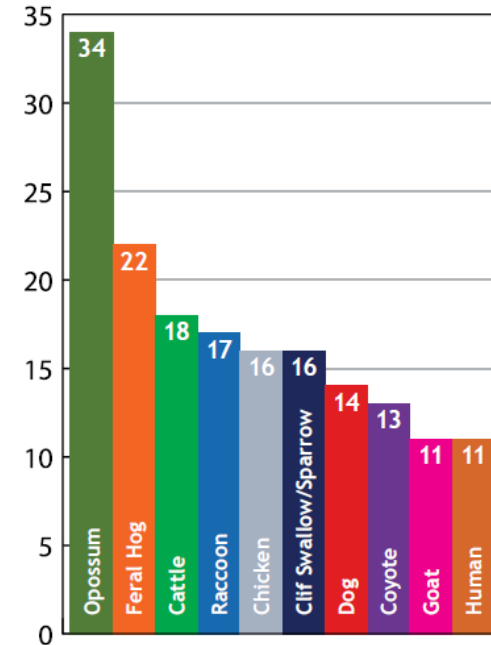
- Wildlife (n=136)
- Livestock & Domesticated Animals (n=65)
- Human (n=9)
- Unidentified (n=40)

Overall 7-Way Split



- Non-Avian Wildlife (n=103)
- Avian Wildlife (n=33)
- Cattle (n=14)
- Other Livestock, Avian (n=10)
- Human (n=9)
- Pets (n=21)
- Unidentified (n=40)
- Other Livestock, Non-Avian (n=10)

10 Most Common Species



Clifton Branch

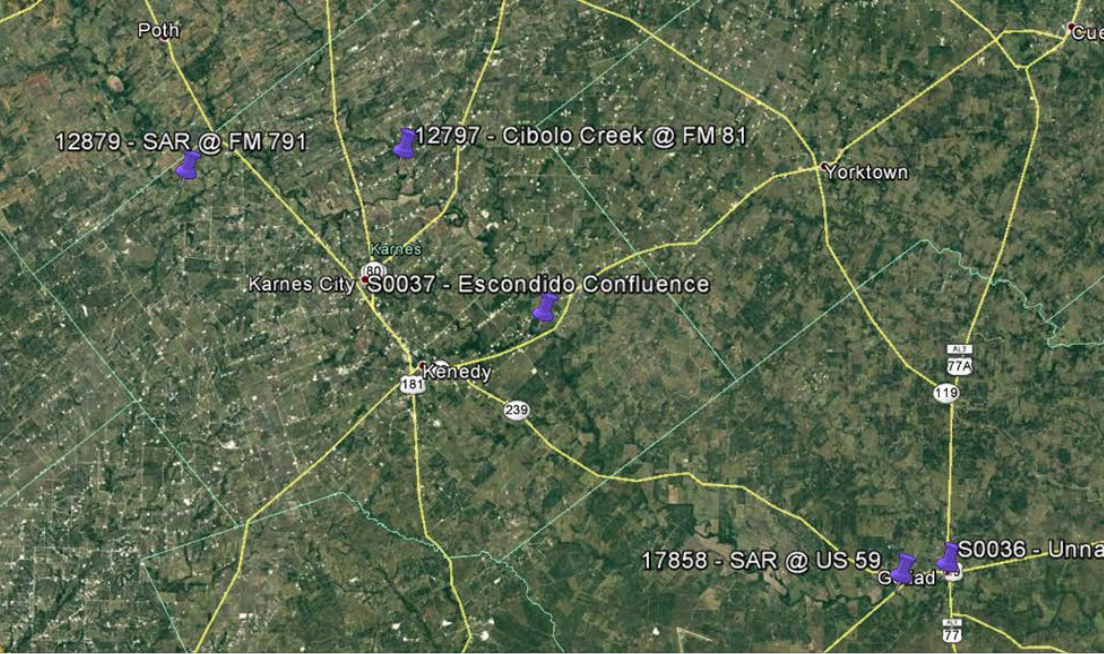


Cibolo Creek at FM 539



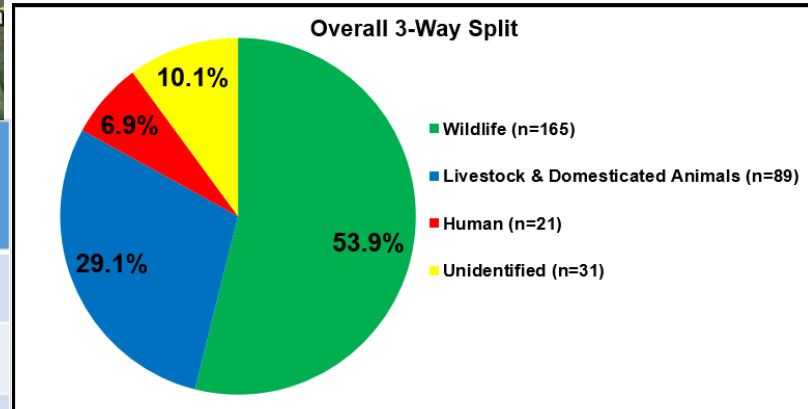
Unnamed Tributary
Confluence with the Cibolo
Creek





Station	Ambient Samples	<i>E. coli</i> Geomean (cfu/100 mL)	Avg. Flow (cfs)	High-Flow Samples	<i>E. coli</i> Geomean (cfu/100 mL)	Avg. Flow (cfs)
Goliad Trib.	4	320.6	0.2	2	5099.0	0.2
SAR @ US 59	4	94.4	280.0	2	2683.3	930.5
Escondido Creek	4	452.6	1.3	2	7071.1	18.2
Cibolo @ FM 81	4	137.7	29.2	2	1805.5	548.0
SAR @ FM 791	4	102.6	195.5	2	1578.0	1256.0

Phase II - Bacteria Source Tracking



Source classification of *E. coli* isolates (n=306) from 30 samples

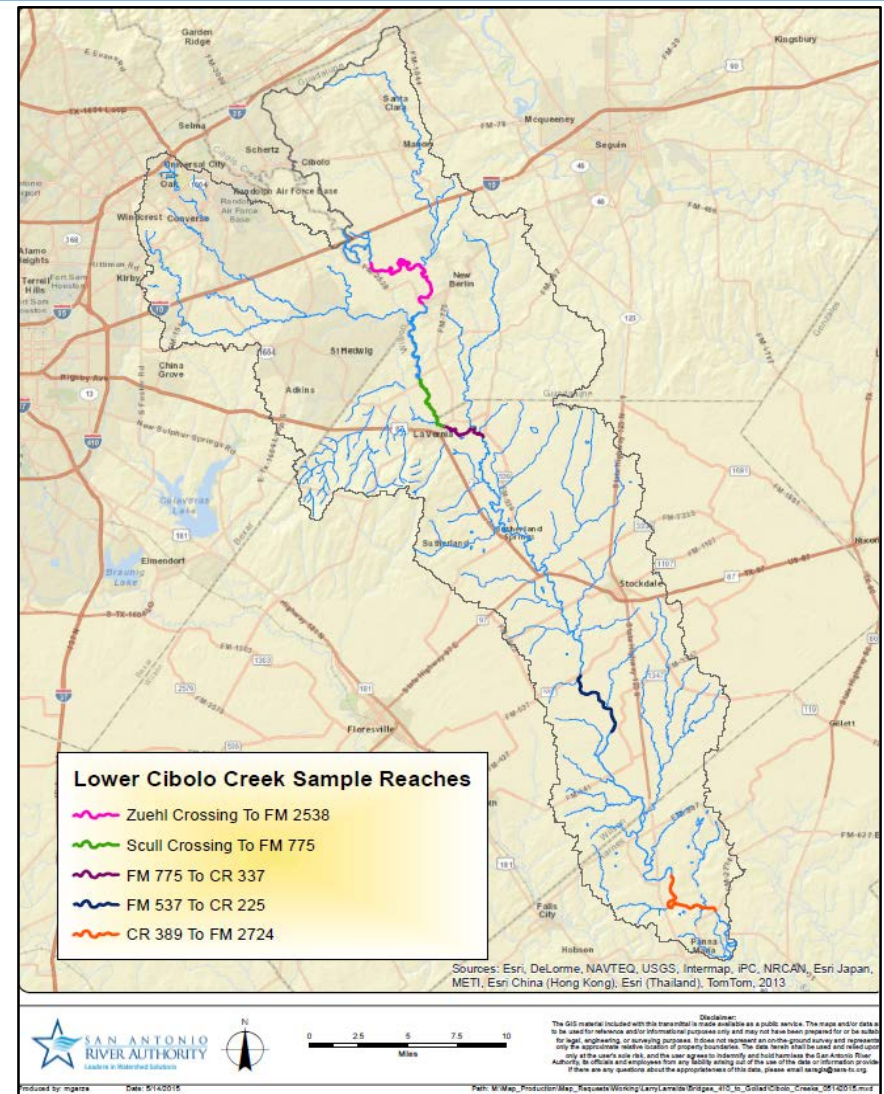


Holistic Mussel Project

Golden Orb Mussel (*Quadrula aurea*) and Asian Clam (*Corbicula species*)

Holistic Mussel Project

- 2009, TPWD 15 of the 50 known Texas species of freshwater mussels placed on the threatened species list.
- 2011, U. S. Fish and Wildlife Services, three of the five central Texas freshwater mussels with historic SARB as threatened or endangered (pending)
 - Texas Fatmucket
 - Texas Pimpleback
 - Golden Orb



Holistic Mussel Project

Between 2011-2013 Qualitative and limited time search for Mussels on the Lower Cibolo Creek:

- Golden Orb (26)
- Yellow Sandshell (17)
- Threeridge (7)
- Louisiana Fatmucket (2)
- Pistolgrip (1)



Feral Hog Management Program

TEXAS A&M
AGRI LIFE
EXTENSION

WS Wildlife
Services

Protecting People | Protecting Agriculture | Protecting Wildlife

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Wild Pig Newsletter

Wildlife and Fisheries Extension Unit ~ Vol.1:2 ~ Summer 2016 ~ www.feralhogs.tamu.edu



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Wild Pig Outreach in Action: Face-to-face Educational Programs

By: Mark Tyson, M.S., Extension Associate, Wildlife and Fisheries and Richard Parrish, M.S., County Extension Agent, Leon County, Texas

“If you can’t explain it simply, you don’t understand it well enough.” – Albert Einstein.

Providing face-to-face educational programs are just one of the ways the wild pig team provides research-based information to the public. Programs can be valuable to both landowners and members of the public seeking to learn about wild pigs and their management. Wild pigs have been a problem in Texas for well over 20 years and new, relevant information is often hard to find, especially online. These programs present an opportunity for land managers to receive the latest information on how to remove wild pigs and reduce their damage.

These events provide a chance for landowners to ask questions and get answers right away. Additionally, it is an opportunity for participants to learn from other attendees. Many times, questions generate other questions that lead to

(Continued on page 2)

Feral Hog Management

Working with Texas A&M Agrilife and USDA-AHIS Wildlife Services to help lower the number of feral hogs in SARA’s four county district.

- Current estimated population is 5.4 million hogs in Texas.
- Cause \$500 million worth of damage annually throughout Texas.
- Cause \$52 million worth of damage to Texas Agriculture.
- Cost landowners \$7million a year to control.





Clifton Branch, Lower Cibolo Creek



CONTACT

If you're a landowner interested in participating in the Feral Hog Management Program please contact your local Texas Wildlife Services office.

KERRVILLE DISTRICT OFFICE

Bexar and Wilson Counties
(North of Highway 97)
Phone: (830) 896-6535

CORPUS CHRISTI DISTRICT OFFICE

Wilson (South of Highway 97),
Karnes and Goliad counties
Phone: (361) 299-1176



SAN ANTONIO RIVER AUTHORITY FERAL HOG MANAGEMENT PROGRAM

"In Texas, it is estimated that feral hogs cause approximately \$52 million of damage annually to the agricultural industry."

The San Antonio River Authority (SARA) has partnered with Texas A&M AgriLife and USDA - APHIS Wildlife Services to promote feral hog education and management strategies to landowners in SARA's four county jurisdiction— Bexar, Wilson, Karnes, and Goliad.

The Feral Hog Management Program will address education and provide technical support to landowners interested in controlling the feral hog population. With the assistance of USDA - APHIS Wildlife Services, the program will actively manage the feral hog population in specific regions of the watershed.

USDA - APHIS Wildlife Services is looking for landowners that live in the Bexar, Wilson, Karnes, and Goliad area who are dealing with feral hog issues on their property. This program is open to landowners in SARA's District and does not require riparian land to be on the property.



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Feral Hog Management Program

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Services

Protecting People | Protecting Agriculture | Protecting Wildlife



Feral Hog Management

Rooting along Clifton Branch