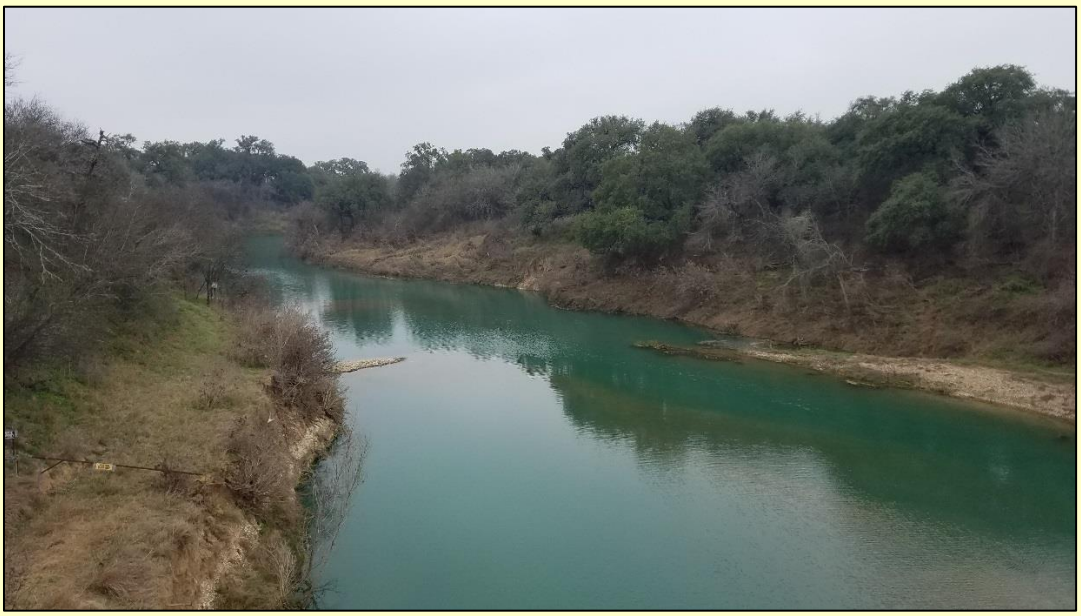
Nueces River Authority

Steering Committee and Stakeholder Update #6
(6th Quarter of FY 2018-2019)
December 2018 – February 2019

March 4th, 2019

Routine Clean Rivers Program Monitoring

Field staff from the Nueces River Authority conducted routine quarterly water quality sampling at all 43 river/reservoir and coastal stations in the sixth quarter.



New Accessibility Format

The NRA Stakeholder Report's format will change from previous reports to ensure that the document can be accessed by people that use a screen reader to view or scan documents online. Images will contain what's called alt text which gives information about an image as you move your cursor over it. However, the format does not allow images to be placed next to each other or wrapped into the text. Single images must go under the paragraph.

Lab Changes

NRA switched water quality analysis laboratories for FY 2019. The Corpus Christi Water Utilities Lab (WUL), a NELAP certified Lab, was chosen to analyze routine water samples. Additional changes include the use of the Center for Coastal Studies Lab at A&M University to conduct Chlorophyll-*a* and Pheophytin analysis. LCRA Environmental Laboratory Services will be used for all metals in water analyses. The QAPP revision was approved in mid-January.

Coordinated Monitoring Meeting on March 20th

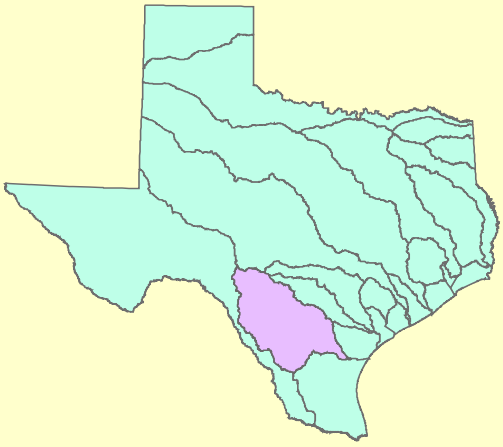
NRA will be hosting the annual Coordinated Monitoring Meeting in conference room 210 of the Regional Transportation Authority (RTA) building located at 602 N. Staples Street in Corpus Christi on March 20th from 1:00pm to 4:30pm. Stakeholders are welcome to provide input on water quality monitoring in the Nueces River Basin, San Antonio-Nueces Coastal Basin, Nueces-Rio Grande-Coastal Basin, and the Bays and Estuaries.

Basin 20 - San Antonio-Nueces Coastal Basin

The San Antonio-Nueces Coastal Basin covers approximately 3,100 square miles, draining to Copano and St. Charles bays. The basin is largely rural, with the dominant industries being crop farming and cattle rearing. Monitoring sites in Basin 20 are located on the tidal and above tidal portions of the Mission and Aransas rivers and Poesta Creek. Tidal portions of the Mission and Aransas rivers have been impaired for the contact recreation standard, bacteria, since the 2004 Assessment. The above tidal portion of Aransas River and Poesta Creek will likely be listed for the same parameter in the 2016 Assessment as it becomes finalized.

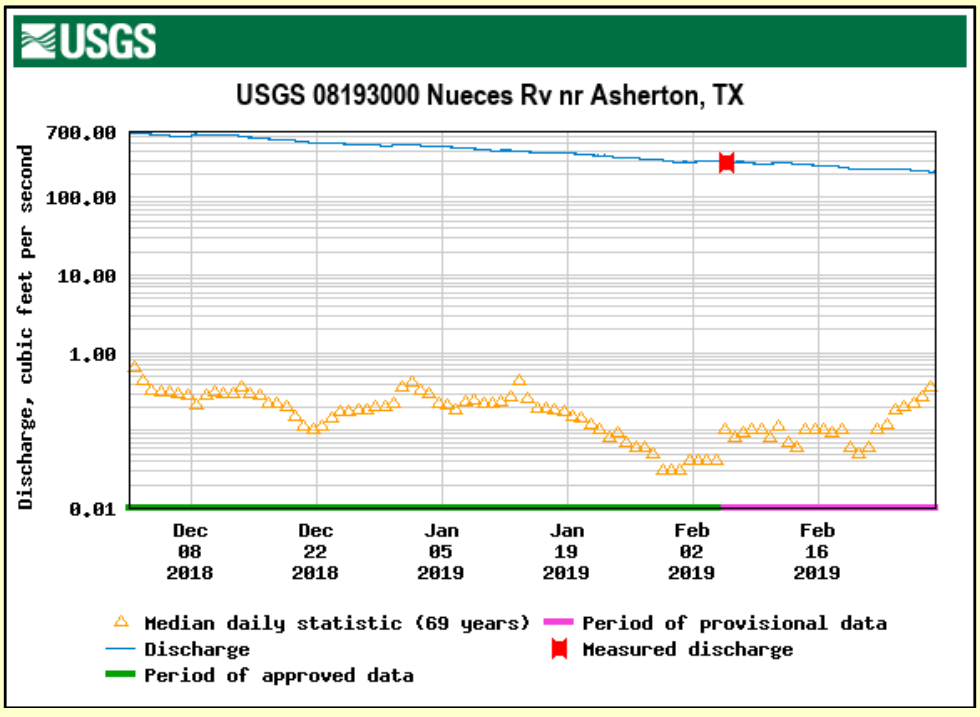
Basin 21 - Nueces River Basin

The Nueces River Basin covers approximately 17,000 square miles in South-Central Texas. The Nueces River winds 315 miles from its source in the Edwards Plateau near Rock Springs (elevation 2,402) through the brush country of the South Texas Plains to its end in Nueces Bay, located near Corpus Christi. The Nueces River is joined by the Frio and Atascosa rivers near the town of Three Rivers.



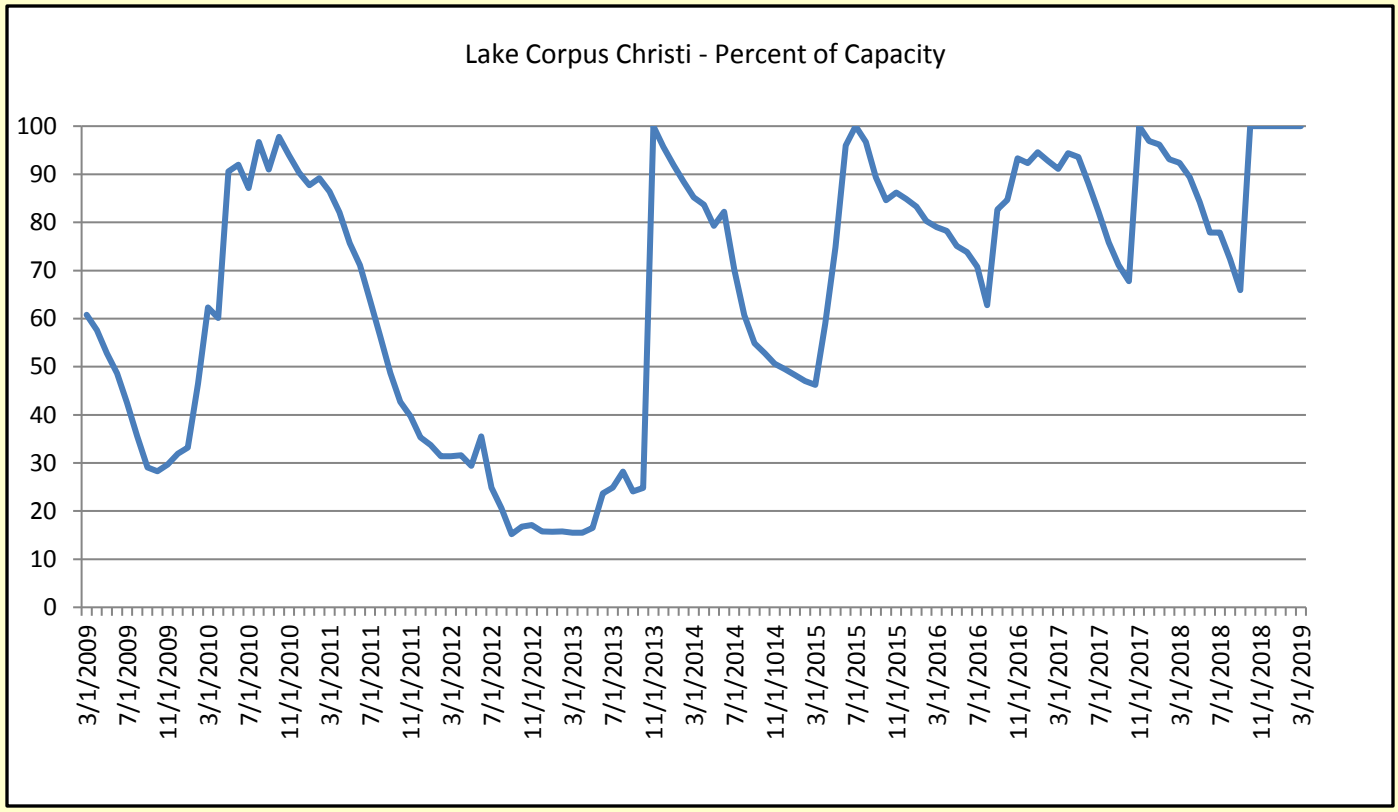
The Return of Baseflow on the Nueces River

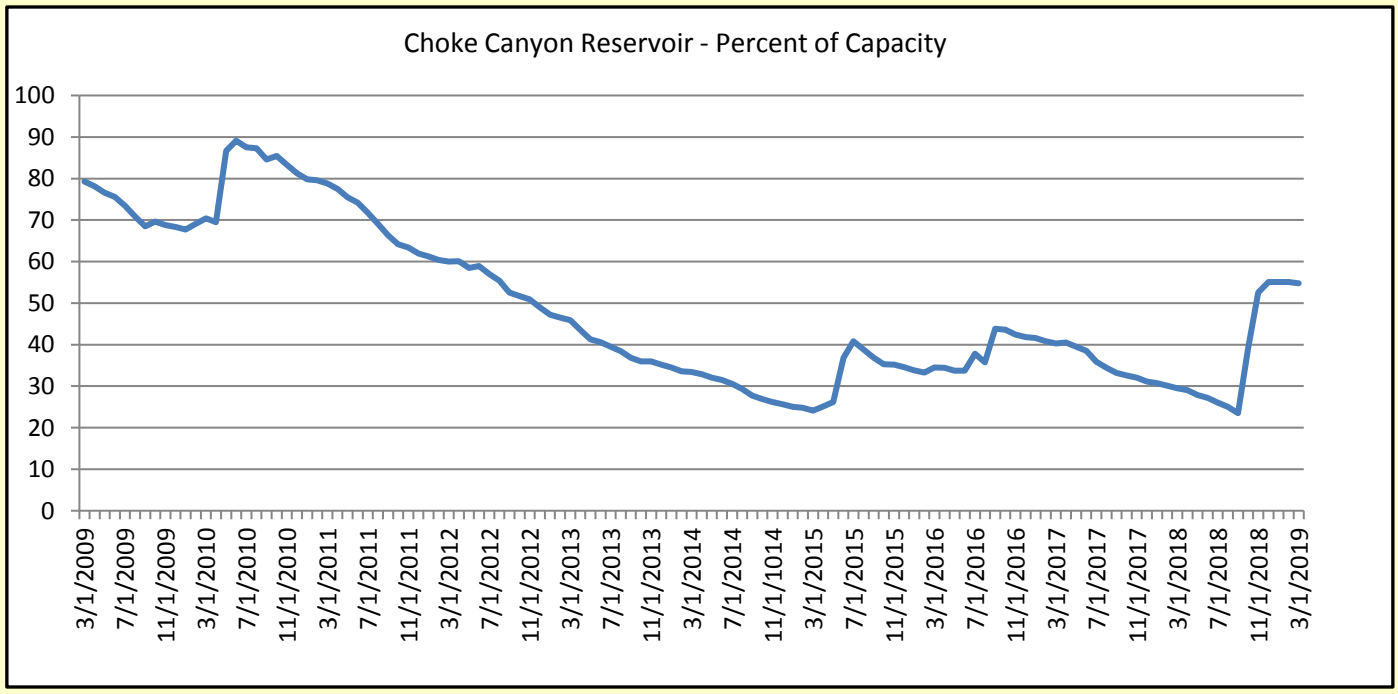
Following a wet Fall, the middle and lower Nueces River has had consistent flow all quarter long. The streamflow rate at the Asherton gage, which is the downstream from the Uvalde gage, started off the quarter at approximately 700 ft^3/sec and gradually tapered down to the 200 ft^3/sec range by the end of February. Due to this, Lake Corpus Christi has had one of the longest stretches (127 days so far) of being at 100% since 2003 (150 days). The winter months have lower evapotranspiration rates than in hotter months. The next longest stretch was back in 1992 at 188 days. A big thanks goes to Rocky Freund for keeping that daily lake level spreadsheet updated.



Lake Levels

Combined lake levels at the end of the quarter were 67.2%. of capacity. For the Daily Reservoir System and Pass-Thru Status Report, please visit the website https://www.nueces-ra.org/CP/CITY/passthru/index.php.





Nueces River Watershed Partnership – Implementation of the Lower Nueces River Watershed Protection Plan (WPP)

Funding for the NRA, as watershed coordinator to seek funding for and initiate implementation of the WPP, is provided by the TSSWCB through a §319(h) grant from EPA.

OSSF Repair and Replacement

As of January 2019, 47 OSSFs within the watershed have been pumped out and inspected. Fourteen were found to be in good working order. Of the remaining 33 systems, 21 need to be completely replaced and 12 need some repair work. Fifteen replacements and 11 repairs have been completed. The program, funded by the TCEQ through a §319(h) grant from EPA, will continue through February 2020 or until the budgeted funds are spent.

NRA is working with TCEQ on a proposal to continue implementation of this program. If the 319h(h) Nonpoint Source Grant is approved for funding by the U.S. EPA, it will begin in September 2019. In anticipation of approval, the NRA will continue to accept applications so that the additional work can commence as soon as possible.

OSSF Conversion

The City of Corpus Christi continues its evaluation of the feasibility of converting homes in the River Forest subdivision in Calallen from OSSFs to the City's wastewater collection system. A second stakeholder meeting to present the results will be scheduled for some time between September 23 and October 4, 2019.

Environmental Education

Texas Water Resources Institute will be hosting a Landowner Riparian Workshop on April 16, 2019 at the recreation hall at Kleberg Park in Kingsville, and an Urban Riparian Workshop on April 17, 2019 at the South Texas Botanical Gardens in Corpus Christi. More information will be posted on NRA's website when it becomes available.

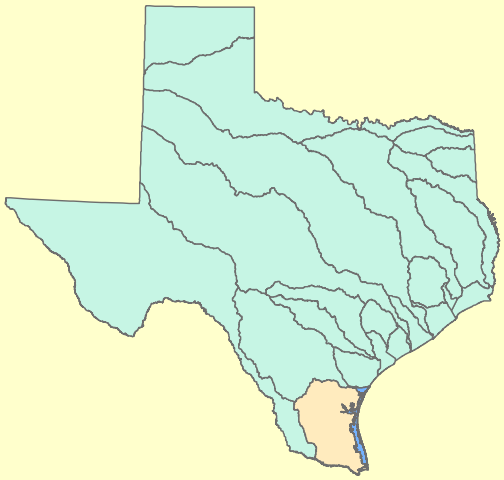
Website Update

The Partnership's website, http://www.nuecesriverpartnership.org**,** is being revamped. The revision should be completed during the latter half of March.

The next stakeholder meeting is scheduled for May 8, 2019. For more information about the Partnership and the WPP, visit the website, or contact Rocky Freund at (361) 653-2110 or rfreund@nueces-ra.org**.**

Basin 22 – Nueces-Rio Grande Coastal Basin

The Nueces-Rio Grande Coastal Basin covers approximately 10,400 square miles in South Texas and includes streams such as the Arroyo Colorado Tidal (Segment 2201) and above tidal (Segment 2202) in the Rio Grande Valley and Petronila Creek Tidal (Segment 2203) and above tidal (Segment 2204), which is a tributary to Alazan Bay located on the northern arm of Baffin Bay.



Rio Grande Valley Monitoring – Segment 2202

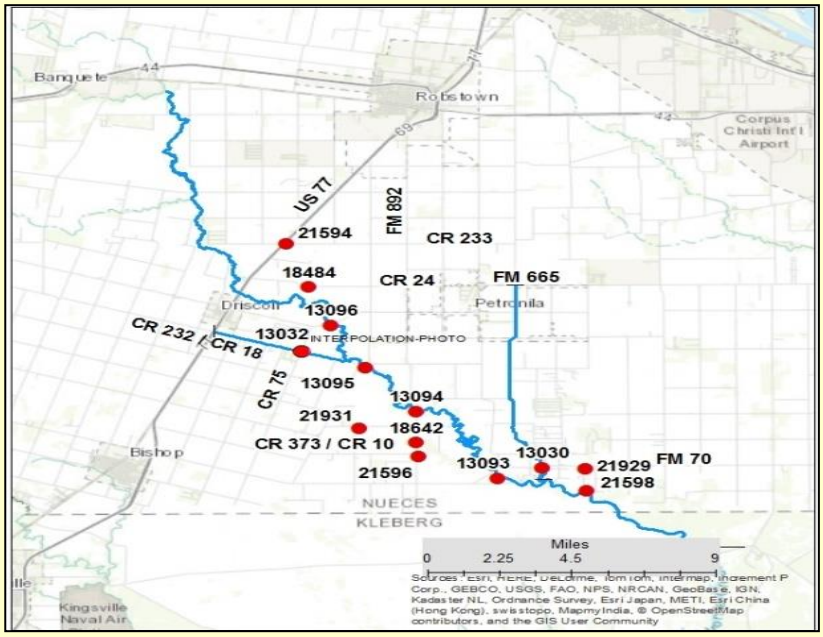
For FY2019, NRA is monitoring three sites down in the Rio Grande Valley (see page 10 for the map of stations). Station 13079 is located on the above tidal portion of the Arroyo Colorado (Segment 2202) at the US-77 Bridge in Harlingen. The other two stations, the Hidalgo and Raymondville Drains, are tributaries of the Laguna Madre (Segment 2491). All three sites were visited on January 30st during dry weather. (Disclaimer – Data has not been validated or input into the SWQMIS Database.)

Site	E. coli	Ammonia	TKN	Total Phos	Nitrate	Nitrite	Chlorophyll a
13079	158 MPN	<0.1 mg/L	0.92 mg/L	0.7 mg/L	5.2 mg/L	0.10 mg/L	2.8 µg/L
22003	31 MPN	<0.1 mg/L	1.21 mg/L	0.7 mg/L	5.6 mg/L	0.06 mg/L	19.3 µg/L
22004	74 MPN	0.17 mg/L	1.43 mg/L	0.2 mg/L	2.7 mg/L	0.07 mg/L	3.8 µg/L

Petronila Creek Tributary Study – Segment 2204

Since FY 2013-2014, the TCEQ has contracted with NRA to conduct monthly water quality monitoring to identify chloride, sulfate, and TDS contributions from tributaries of Petronila Creek, including drainage ditches. For FY 2019, NRA is conducting monthly monitoring at 13 sites. Four sites are located on the main stem of Petronila Creek (13096, 13095, 13094, and 13093 – data is in bold on the graph). (Disclaimer – Data has not been validated or input into the SWQMIS Database.)

Monitoring in the sixth quarter (Dec-February) is summarized below. The dynamics of Petronila Creek are more apparent during periods of low flow (2-4 ft^3/sec) than during high flows. Petronila Creek slowly becomes more saline as it receives water from the tributaries.



Site #	December (µmhos)	January (µmhos)	February (µmhos)
21594	849	9,730	2,640
18484	No data	22,800	10,200
13032	6,280	31,800	32,200
13096	**5,250**	**12,000**	**14,300**
13095	**5,910**	**12,200**	**15,800**
21931	21,000	32,100	30,300
13094	**7.560**	**15,500**	**16,900**
18642	20,700	34,200	33,800
21596	15,700	23,900	22,900
13093	**9,300**	**8,930**	**17,300**
13030	14,500	28,800	31,300
21929	22,500	31,700	31,400
21598	26,100	34,200	33,400

Basin 24 –Bays and Estuaries

The Bays and Estuaries region of Texas covers approximately 2,002 square miles along the entire Texas Coast. There are 48 classified estuarine segments that are monitored by several River Authorities and TCEQ regional offices. Nueces River Authority monitors water quality in 5 of the coastal segments including: Copano/Port/Mission Bay (Segment 2472), Redfish Bay (Segment 2483), Oso Bay (Segment 2485), Laguna Madre (Segment 2491), and Baffin Bay/Alazan Bay/Cayo del Grullo/Laguna Salada (Segment 2492).

Oso Bay & Oso Creek TMDL and IP – Segments 2485 and 2485A

Since 2002, Oso Creek, which flows 28 miles to the confluence of Oso Bay in Nueces County has been identified as being impaired for having bacteria concentrations that exceed state water quality standards. Since 2003, the TCEQ and the TSSWCB have conducted numerous studies of bacteria sources and quantities in the Oso Creek watershed. Based on the results of those studies, a Total Maximum Daily Load (TMDL) and an Implementation Plan (IP) for Oso Creek is being developed to address the contact recreation impairment. Staff from the Center for Coastal Studies at Texas A&M University – Corpus Christi and the Coastal Bend Bays Foundation is disseminating information to the public.

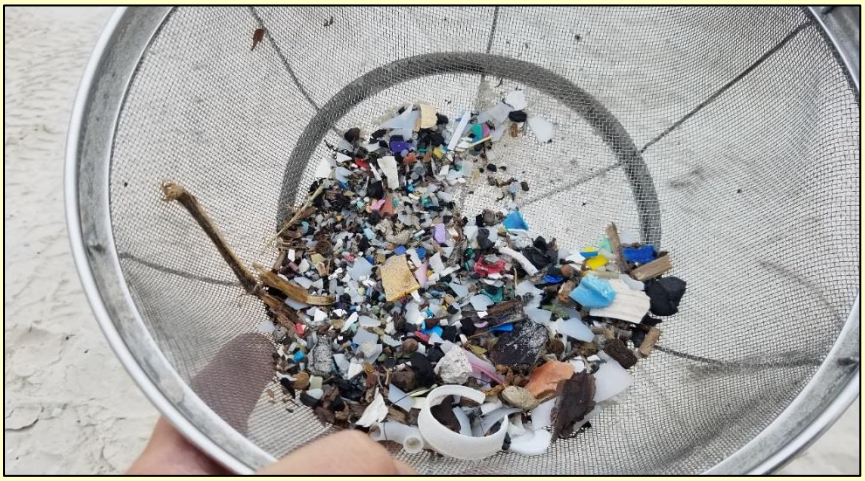
You can learn more about the Oso Bay TMDL and/or the Oso Creek Watershed Public Outreach at the TCEQ project page: http://www.tceq.texas.gov/waterquality/tmdl/67-osobaybacteria.html;

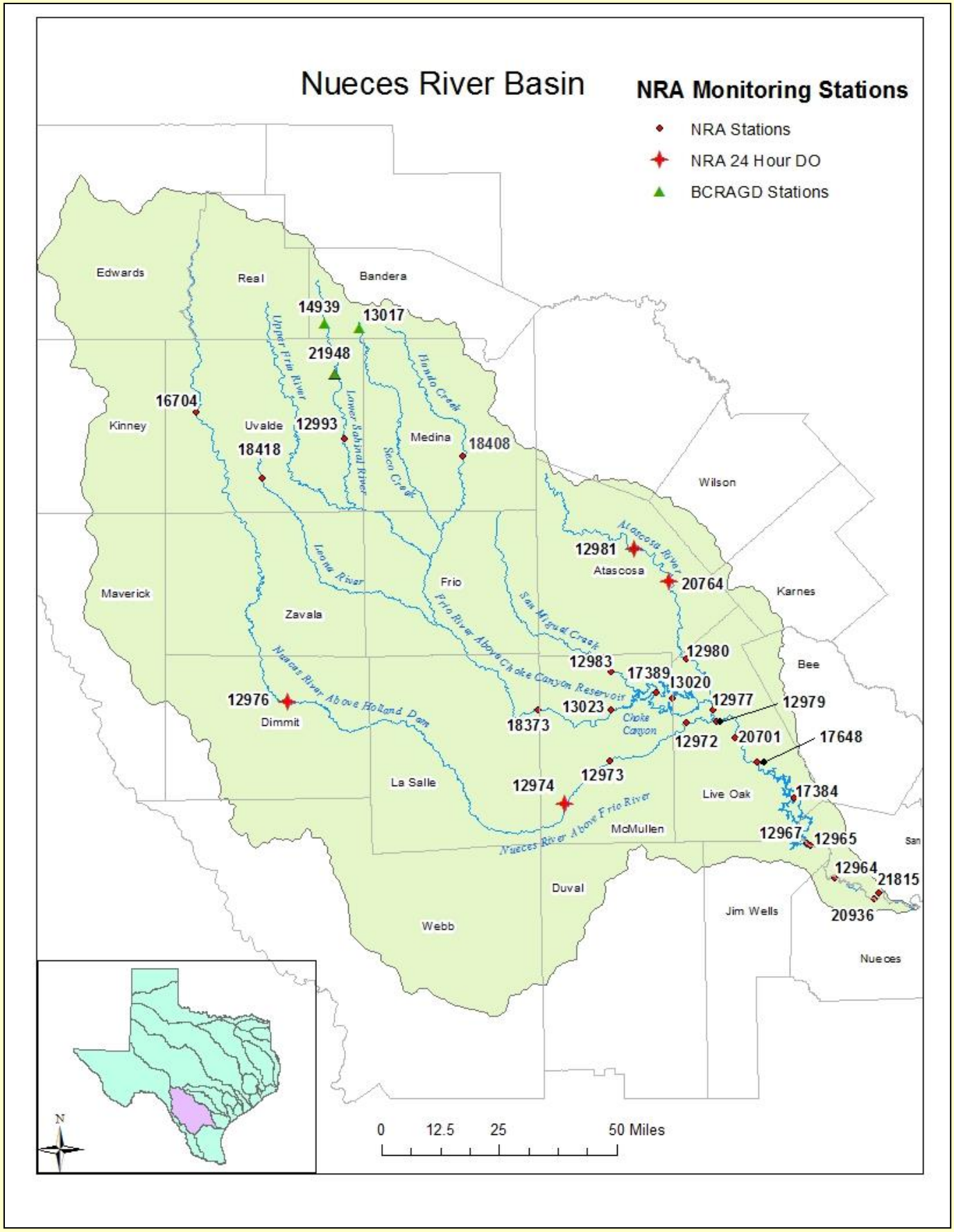
Outreach and Education

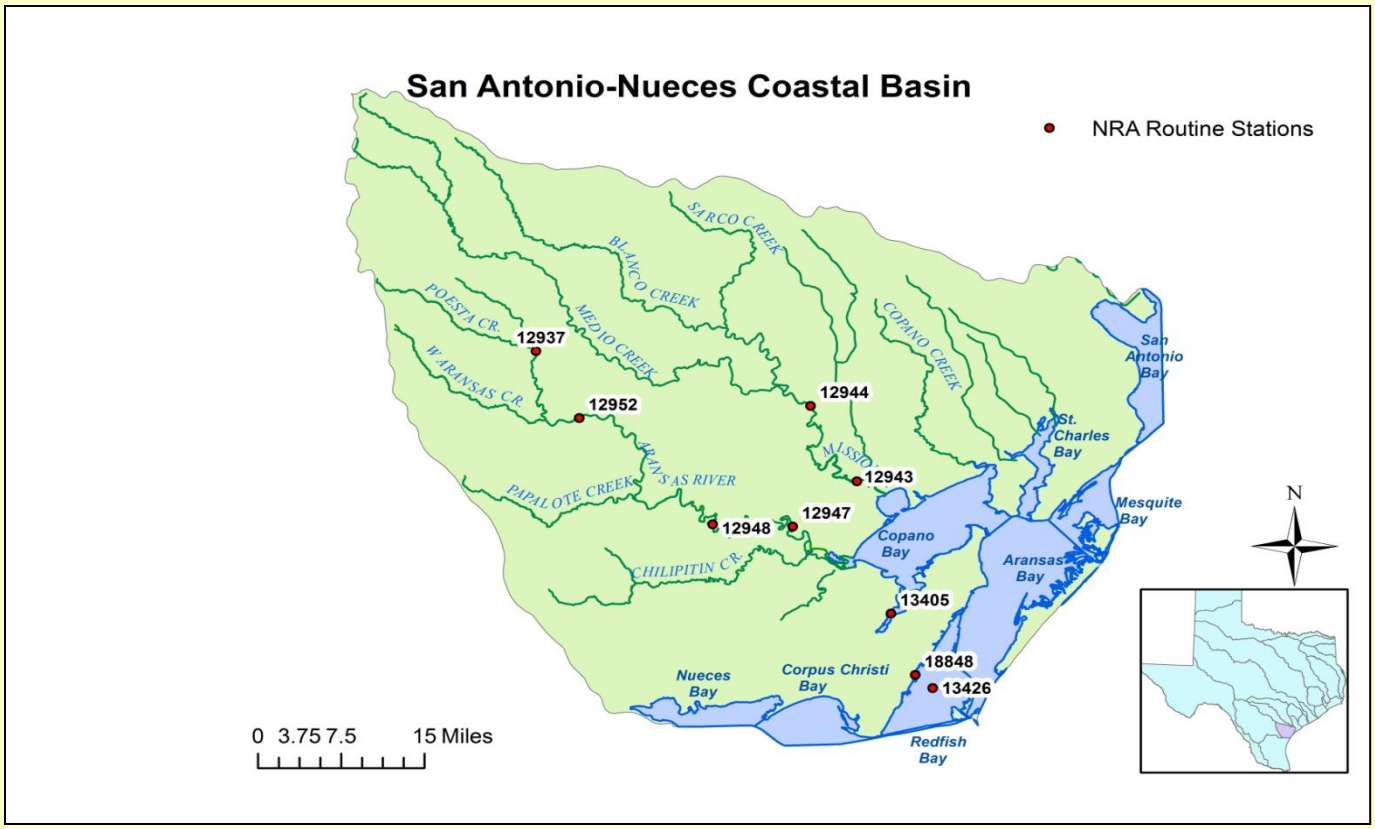
NRA's Education and Outreach Program saw 448 people in December, 841 people in January and 2,145 people in February for a total of 3,434 for the quarter. Thank you, Mary Bales for your hard work showing off our river basin and groundwater models. For more information about outreach and education, contact slewey@nueces-ra.org.

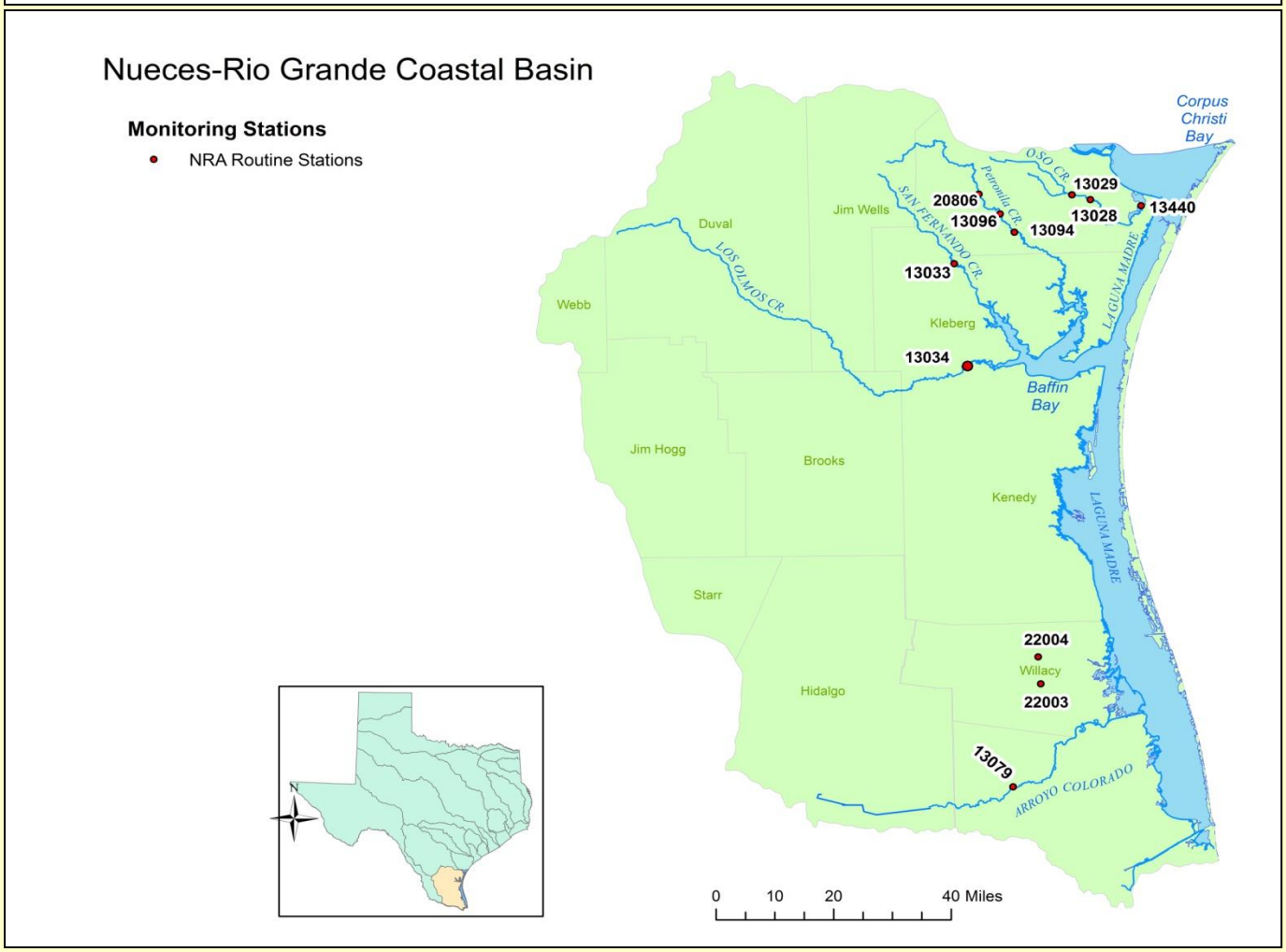
Sand Sieving

To increase the awareness of plastic pollution on our receiving water bodies, NRA field staff conducted an educational demonstration called sand sieving. Sand sieving is the practice of using a sieve (we used a $10 kitchen colander) to collect the small bits of broken plastics and nurdles from sand. The demonstration took place on the beach of Padre Island at a location known as the "bowl". The goal was to time how long it would take to fill a 5-gallon bucket with plastic bits and nurdles. After approximately 3 hours, the bucket was filled.




Nueces River Basin
NRA Monitoring Stations
NRA Stations
NRA 24 Hour DO
BCRAGD Stations
Edwards
Real
Bandera
Kinney
Uvalde
Medina
Wilson
Maverick
Zavala
Frio
Atascosa
Karnes
Bee
Dimmit
La Salle
Live Oak
McMullen
Duval
Webb
Jim Wells
Nueces
San
14939
13017
21948
16704
12993
18418
18408
12981
20764
12980
12983
17389
13020
12977
12979
12976
13023
18373
12972
20701
17648
12973
12974
17384
12967
12965
12964
21815
20936
Upper Frio River
Lower Sabinal River
Hondo Creek
Seco Creek
Atascosa River
Leona River
San Miguel Creek
Frio River Above Choke Canyon Reservoir
Choke Canyon
Nueces River Above Holland Dam
Nueces River Above Frio River
N
0
12.5
25
50 Miles


San Antonio-Nueces Coastal Basin
NRA Routine Stations
SARCO CREEK
BLANCO CREEK
POESTA CR.
MEDIO CREEK
COPANO CREEK
WARANSAS CR.
12937
12952
12944
MISSION
ARANSAS RIVER
12943
PAPALOTE CREEK
12947
12948
CHILIPITIN CR.
Copano Bay
Aransas Bay
13405
San Antonio Bay
St. Charles Bay
Mesquite Bay
N
18848
13426
Nueces Bay
Corpus Christi Bay
Redfish Bay
0 3.75 7.5 15 Miles


Nueces-Rio Grande Coastal Basin
Monitoring Stations
NRA Routine Stations
Corpus Christi Bay
OSO CR.
Petronila CR.
SAN FERNANDO CR.
20806
13029
13028
13440
13096
13094
Jim Wells
Duval
13033
LOS OLMOS CR.
LAGUNA MADRE
Webb
Kleberg
13034
Baffin Bay
Jim Hogg
Brooks
Kenedy
Starr
22004
Willacy
Hidalgo
22003
13079
ARROYO COLORADO
0 10 20 40 Miles