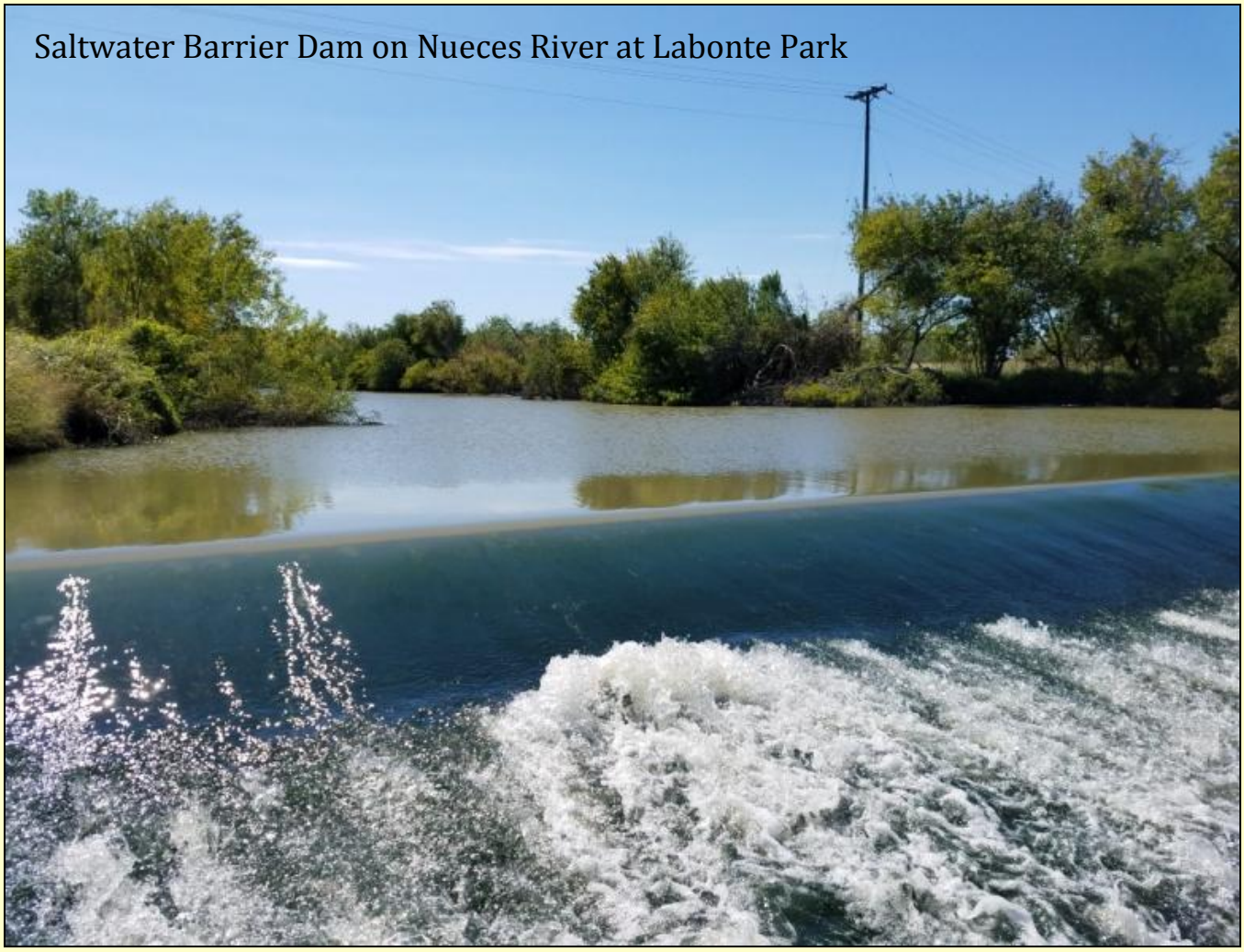
Nueces River Authority

Steering Committee and Stakeholder Update #1
(1st Quarter of FY 2018-2019)
September - November 2017

December 6th, 2017

Aside from the incredible amount of destruction along the middle and upper Texas coast, Hurricane Harvey proved to be a non-event in terms of water quality and quantity in the Nueces River Watershed. It wasn't until approximately one month after the storm that a rain event on the Nueces River in the western portion of the watershed resulted in a flood that filled Lake Corpus Christi for the first time since July 2015.

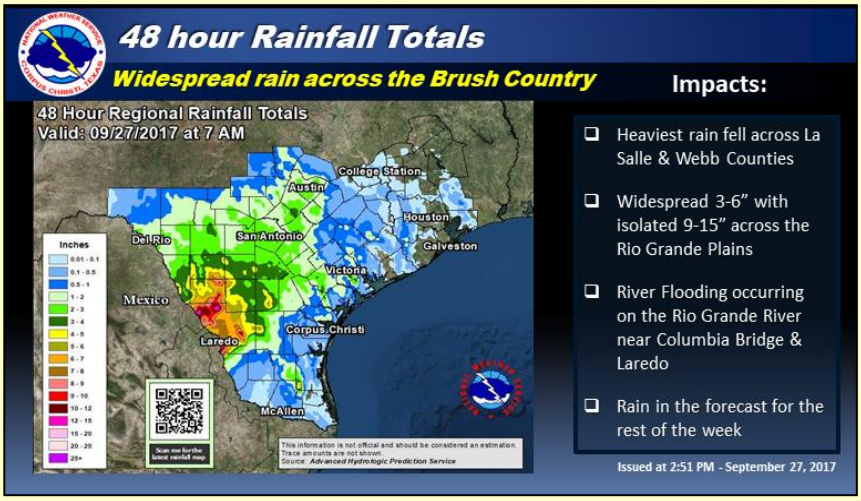

Saltwater Barrier Dam on Nueces River at Labonte Park

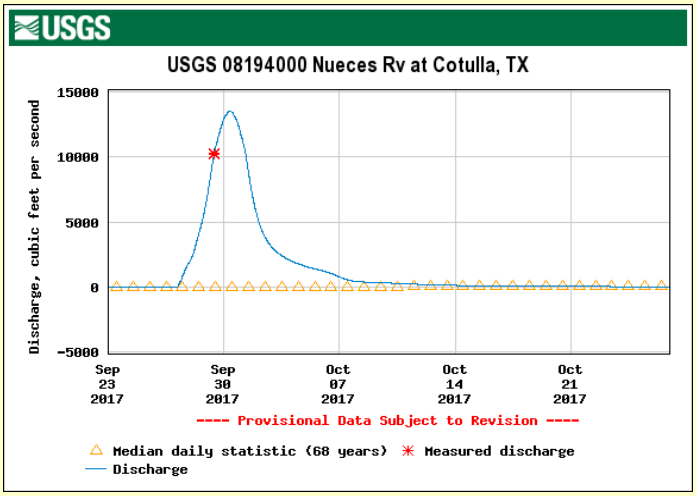
Routine Clean Rivers Program Monitoring

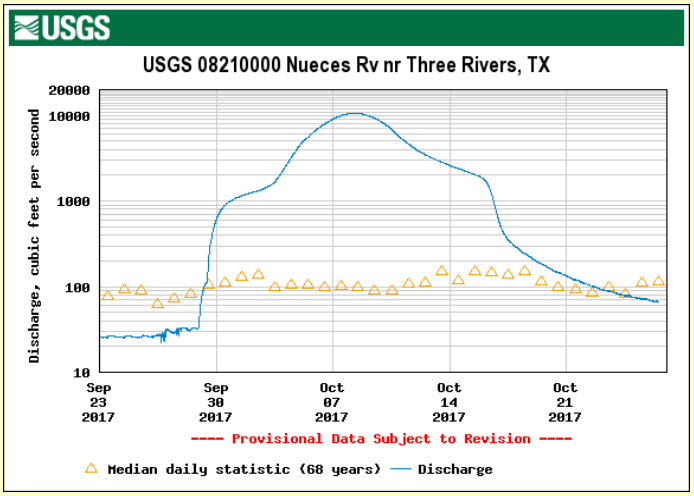
Field staff from the Nueces River Authority conducted routine quarterly water quality sampling at all 35 river/reservoir stations and 8 coastal stations in the first quarter of the Clean River Programs biennial fiscal year (FY 2018-19). No 24-hour dissolved oxygen monitoring occurred this quarter.

Flooding on the Nueces River

On September 26-27th, heavy rains fell in Dimmit, La Salle, and Webb counties causing localized flooding. The flooding was severe enough in some locations to cause road closures and traffic delays. Floodwaters made their way to the Nueces River causing a moderate flood event. By October 10th Lake Corpus Christi was full and spilling water downstream to the Nueces Estuary.

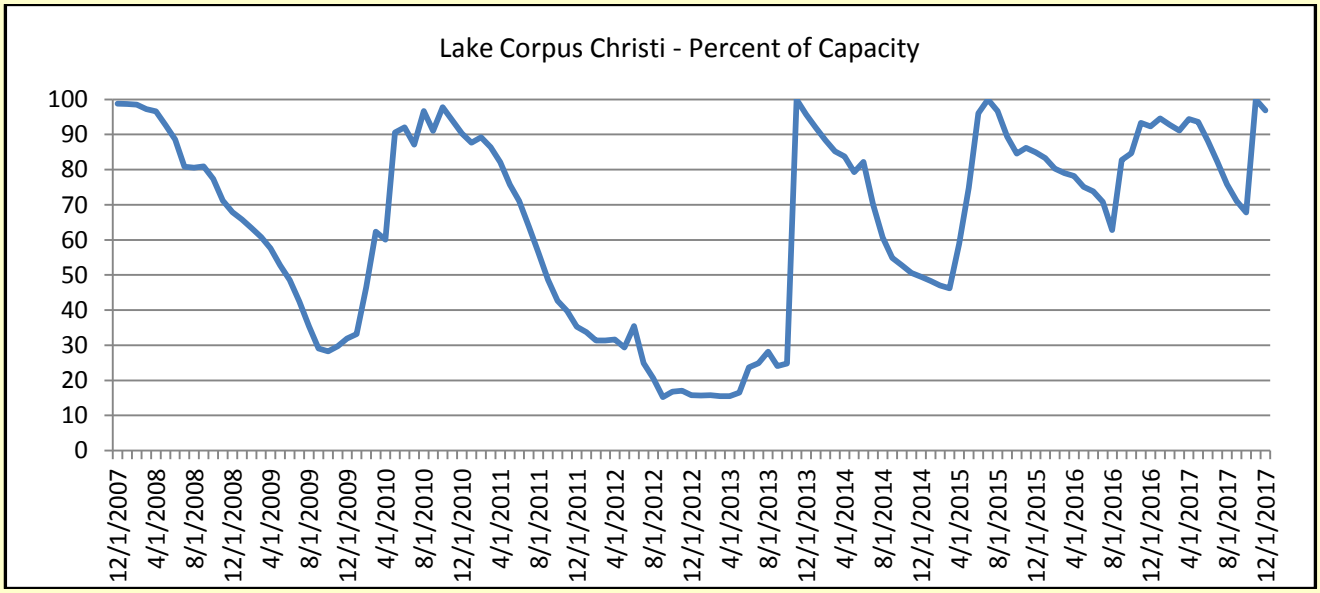


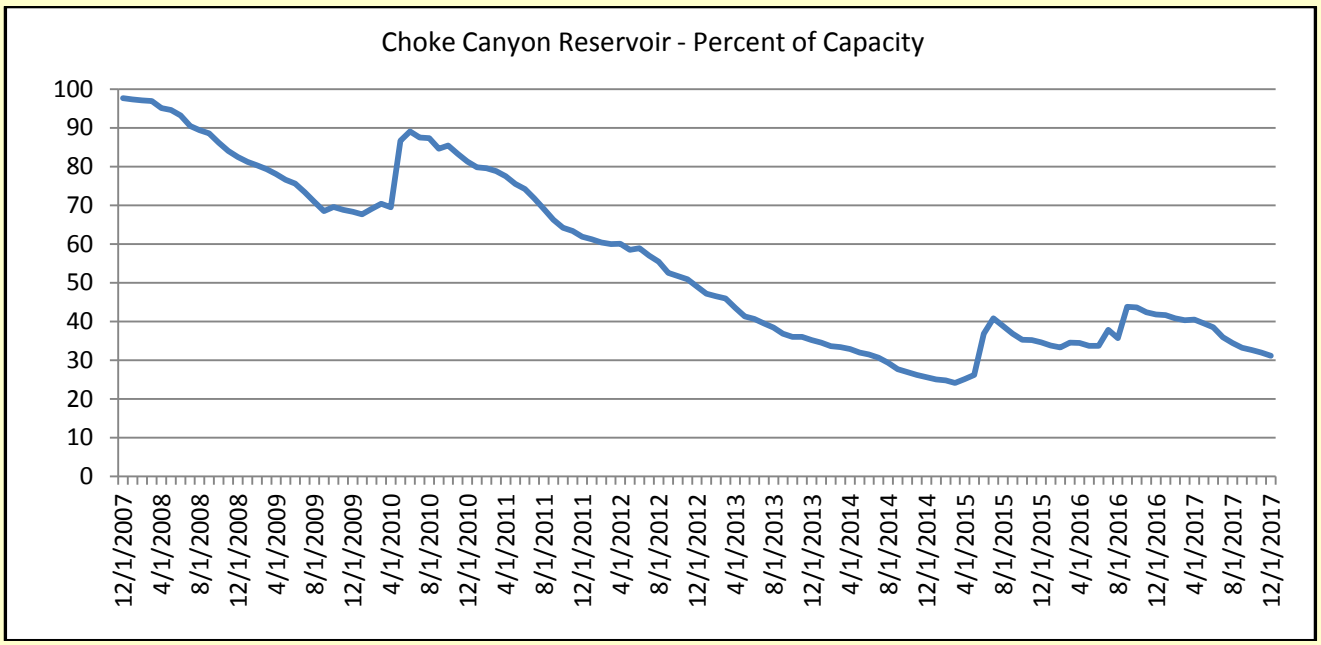




Lake Levels

Percent capacity of the Reservoir System (Choke Canyon + Lake Corpus Christi) rose from 43.6% to 49.4% of capacity during the 1st quarter. For the Daily Reservoir System and Pass-Thru Status Report, please visit the website https://www.nueces-ra.org/CP/CITY/passthru/index.php.





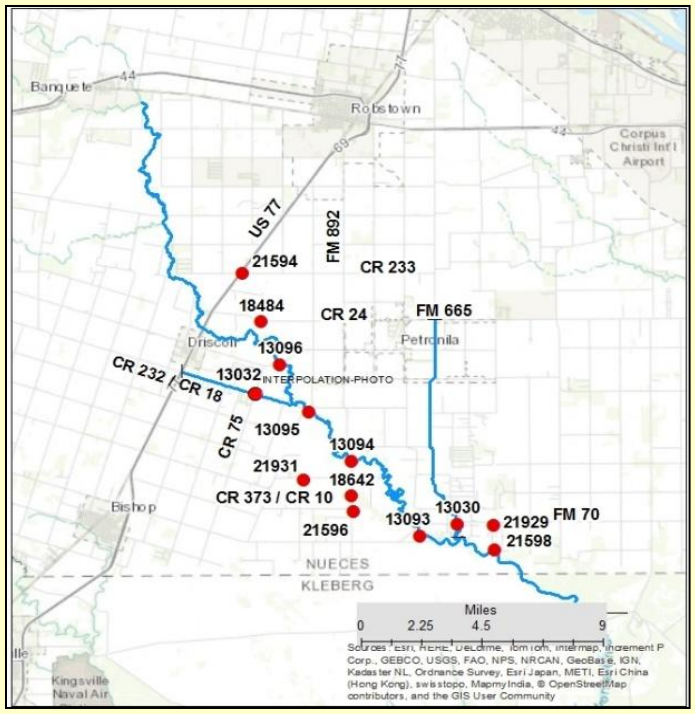
Water Color

After many years of collecting water quality data on the Nueces River, observations such as water clarity and color can be useful in determining where flows originate from in the watershed. Relatively clear water is often attributed to flows originating from the hill country whereas highly turbid water with an orange tint is often observed coming from the middle watershed where tributaries contain finer sediments and/or iron laden soils (as observed around Asherton). On occasion, after moderate to severe flood events, water color can take on a very dark, almost black, appearance. Although it may look alarming at first glance, the phenomenon is due to the presence of tannins. Tannins are the result of vegetation (leave litter and dead wood) that becomes inundated during flood events and stains the water yellow or a tea-like color. In deeper areas, the water can almost appear to be black. Tannins cause a musty or earthy odor to the water that was observed and noted during this quarter's sampling events.

Mission Aransas TMDL addendum

The TCEQ adopted *Two Total Maximum Daily Loads for Indicator Bacteria in the Tidal Segments of the Mission and Aransas Rivers: Segments 2001 and 2003.* The TMDLs were approved by EPA back in August 2016. An addendum to the original TMDL document includes information concerning two additional assessment units (AUs) that were identified in the *2014 Texas Integrated Report* as having bacteria impairments (*E. coli)*. The impaired AUs are Aransas River Above Tidal (2004_02) and Poesta Creek (2004B_02). Texas Water Resources Institute (TWRI) hosted a public stakeholder meeting on August 10, 2017 to present findings of the study and addendum. The public has an opportunity to comment on this addendum during a 30-day WQMP update public comment period (November 10 through December 12, 2017).

Petronila Creek Tributary Study



Petronila Creek (Segment 2204), is a freshwater stream approximately 44 miles long, with a 526 square-mile watershed. The creek was listed on the 2000 Texas 303(d) list of impaired water bodies for exceeding the standards for chloride (1,500 mg/l), sulfate (500 mg/l), and total dissolved solids (TDS) (4,000 mg/l). Field investigations identified that excessive chloride, sulfate, and TDS concentrations occur in the downstream section of the creek, southeast of US 77, in an area where man-made nonpoint sources such as produced water, brine pits, and brine injection wells, related to oil and gas production, are most numerous. *Three Total Maximum Daily Loads (TMDL) for Chloride, Sulfate, and TDS in Petronila Creek Above Tidal* were adopted by the TCEQ in January 2007 and approved by the EPA in March 2007.

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, including drainage ditches. For FY 2018-2019, NRA will be monitoring at 13 sites (see map for site locations) to further characterize the source and relative loadings from each of the tributaries to capture the effects of various conditions, both antecedent and during the time of sampling. In addition, three sites on the main stem of the creek will be monitored for chlorides, sulfate, and TDS during the two month of each quarter in which routine quarterly monitoring, under CRP, is not being conducted.

Oso Bay Total Maximum Daily Load

Since 2002, Oso Creek (Segment 2485A), 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 studies of bacteria sources and quantities in the Oso Creek watershed. Based on the results of those studies, a TMDL 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

It was another busy quarter for NRA's Education and Outreach Program. The program saw 3,122 people at 26 events using tools such as the custom made watershed model as well as the rain catchment, and groundwater models. Pictured (right) is Katy Fulcher teaching water cycle lessons in our "Catching Rain – Teaching Water" series. For more information about outreach and education, contact slewey@nueces-ra.org.

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. Following is a brief update on the status of the implementation of some of the management measures identified in the WPP that are currently underway or have been recently completed.

OSSF Repair and Replacement

During the September – November 2017 quarter, 33 OSSFs within the watershed have been pumped out and inspected. Twelve were found to be in good working order. Of the remaining 21 systems, 11 need to be completely replaced, one of which has been completed; and the rest need some repair work, four of which 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.

OSSF Conversion
This project will result in a detailed plan and cost estimate to connect some existing homes with OSSFs to the City of Corpus Christi's existing infrastructure. This project is also funded by the TCEQ through a §319(h) grant from EPA. The contract between TCEQ and NRA was recently signed and the project is commencing.

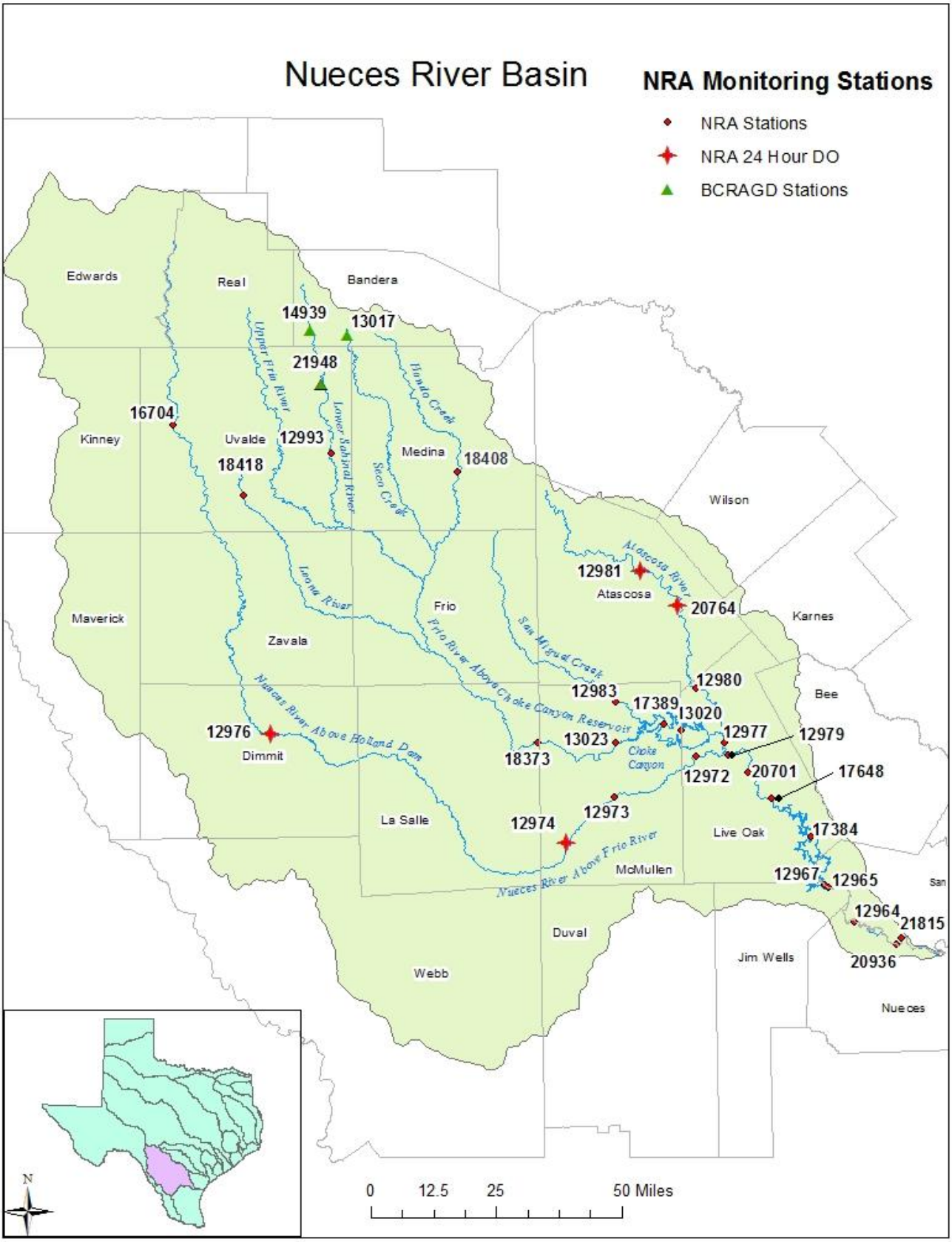
Pet Waste Collection Stations
A total of nine stations were purchased and delivered: four for Hazel Bazemore Park, two for San Patricio County parks, two for the Wilderness Lakes RV Park in Mathis, and one for the Tackle Box Bait and RV Park in Mathis. 500 leash bag holders were ordered and are being distributed at workshops and education and outreach events. This project was funded by a grant from the Coastal Bend Bays and Estuaries Program.

Trash Can Lids at Hazel Bazemore Park
The Nueces County Inland Parks Department designed and funded the installation of raccoon-proof lids on the trash cans at Hazel Bazemore Park.

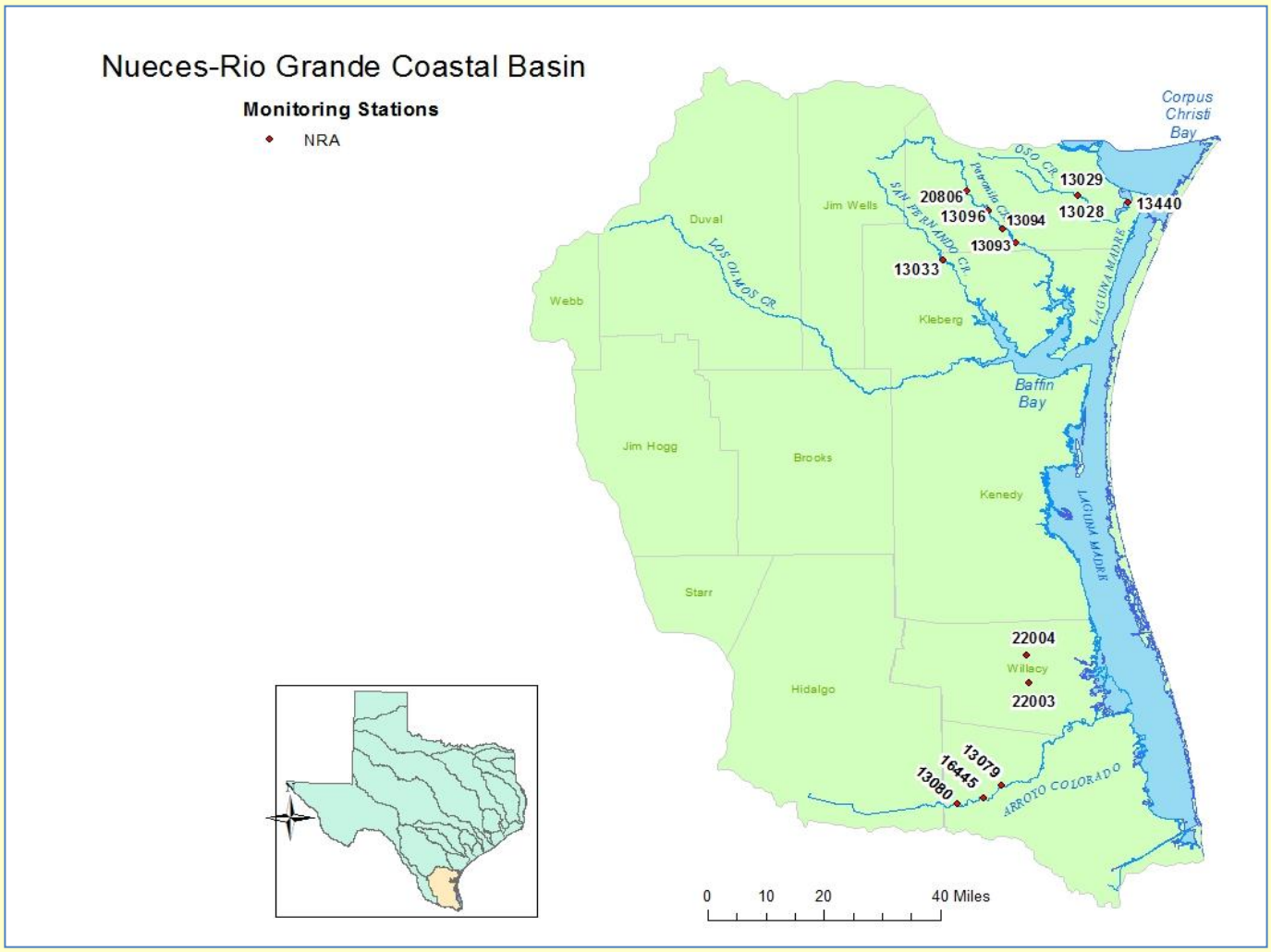
Riparian Workshop
Texas Water Resource Institute conducted a day-long riparian workshop on October 3, 2017. This workshop included an indoor classroom session in the morning and an afternoon field session at Hazel Bazemore Park.

Lone Star Healthy Streams Workshop
A workshop, conducted by the Texas AgriLife Extension Service, is being planned for early April 2018.

The quarterly Nueces River Watershed Partnership Stakeholder Meeting originally scheduled for November at the Doughtery House in San Patricio, had to be cancelled due to damage from Hurricane Harvey. The next stakeholder meeting will be scheduled for some time in January 2018. For more information about the Partnership and the WPP, visit http://www.nuecesriverpartnership.org or contact Rocky Freund at (361) 653-2110 or rfreund@nueces-ra.org.


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
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
Sabinal River
Hondo Creek
Seco Creek
Leona River
Frio River Above Choke Canyon Reservoir
San Miguel Creek
Atascosa River
Choke Canyon
Nueces River Above Holland Dam
Nueces River Above Frio River
0
12.5
25
50 Miles
N


San Antonio-Nueces Coastal Basin
NRA Stations
NRA 24 Hour DO
Goliad
Bee
San Patricio
Aransas
Refugio
SARCO CREEK
BLANCO CREEK
MEDIO CREEK
COPANO CREEK
POESTA CR.
WARAS CR.
PAPALOTE CREEK
CHILIPITIN CR.
12937
12952
12941
12944
12943
12947
13405
18848
13426
San Antonio Bay
St. Charles Bay
Mesquite Bay
Aransas Bay
Copano Bay
Corpus Christi Bay
Nueces Bay
Redfish Bay
0 3.75 7.5 15 Miles
N


Nueces-Rio Grande Coastal Basin
Monitoring Stations
NRA
Corpus Christi Bay
Jim Wells
Duval
Webb
Kleberg
Jim Hogg
Brooks
Kenedy
Starr
Hidalgo
Willacy
Baffin Bay
LAGUNA MADRE
OSO CR.
SAN FERNANDO CR.
LOS OLMOS CR.
ARROYO COLORADO
20806
13029
13096
13094
13028
13440
13093
13033
22004
22003
13079
16445
13080
0 10 20 40 Miles