# *Nueces River Authority*

## Steering Committee and Stakeholder Update for Q2
## December 2021 - February 2022

### Basin 20 - San Antonio-Nueces Coastal Basin

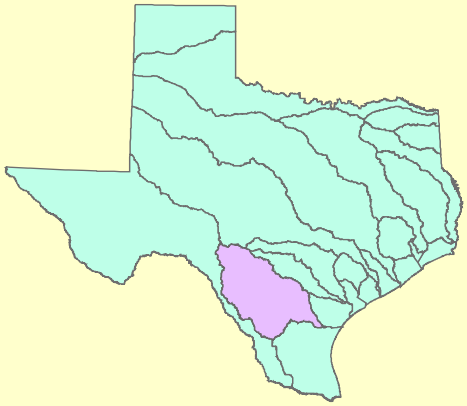
The San Antonio-Nueces Coastal Basin covers approximately 3,100 square miles, draining to Copano and St. Charles bays. The basin is largely rural, with the dominant industries being crop farming and cattle rearing. Monitoring sites in Basin 20 are located on the tidal and above tidal portions of the Mission and Aransas rivers and Poesta Creek (see map on page 8). 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 are listed for the same parameter in the 2020 Assessment.

### Mission and Aransas River Basin Sampling

Nueces River Authority conducts routine water quality monitoring at 7 locations in the Mission/Aransas watershed (map of sampling sites on page 8). Chiltipin Creek Tidal was monitored on December 20th. Bacteria results were elevated (Enterococcus was 110 CFU/100 mL). Mission and Aransas rivers as well as Aransas and Poesta creek stations were monitored on February 1st. All stations had bacteria results over the recreational standard of 126 CFU/100 mL. Station 12941, located on Aransas Creek at US 181 near Skidmore (pictured below), did have enough water to sample this quarter (E. coli was 190 MPN/100mL).

Station 12944 – Mission River at US 77 in Refugio

## 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. Nueces River Authority conducts routine water quality monitoring at 25 locations throughout the Nueces River Basin (see map on page 9).

## Nueces River Basin Sampling

The first 2 quarters of FY 2022 started off on a dry note in the Nueces River Basin. Site visits in Q2 encountered a lack of flowing water at the Nueces River at FM 624, Nueces River at SH 16, Leona River at FM 140, and San Miguel Creek at SH 16. Very low flow conditions were observed in the Lower Frio River as well. Due to the lack of water, 24-DO monitoring on the Leona River did not occur.

Station 12974 - Nueces River at FM 624

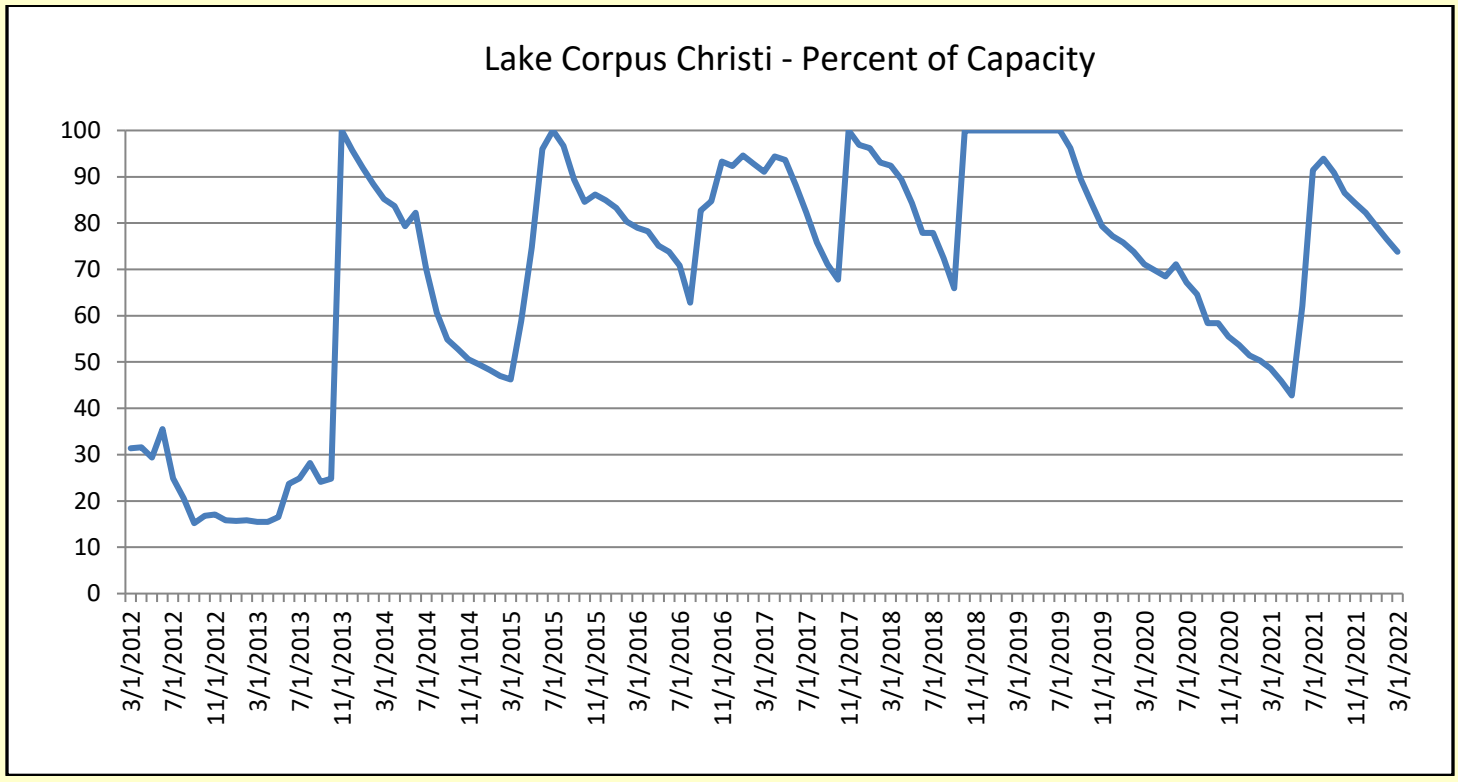
Station 18373 – Frio River at Fowlerton

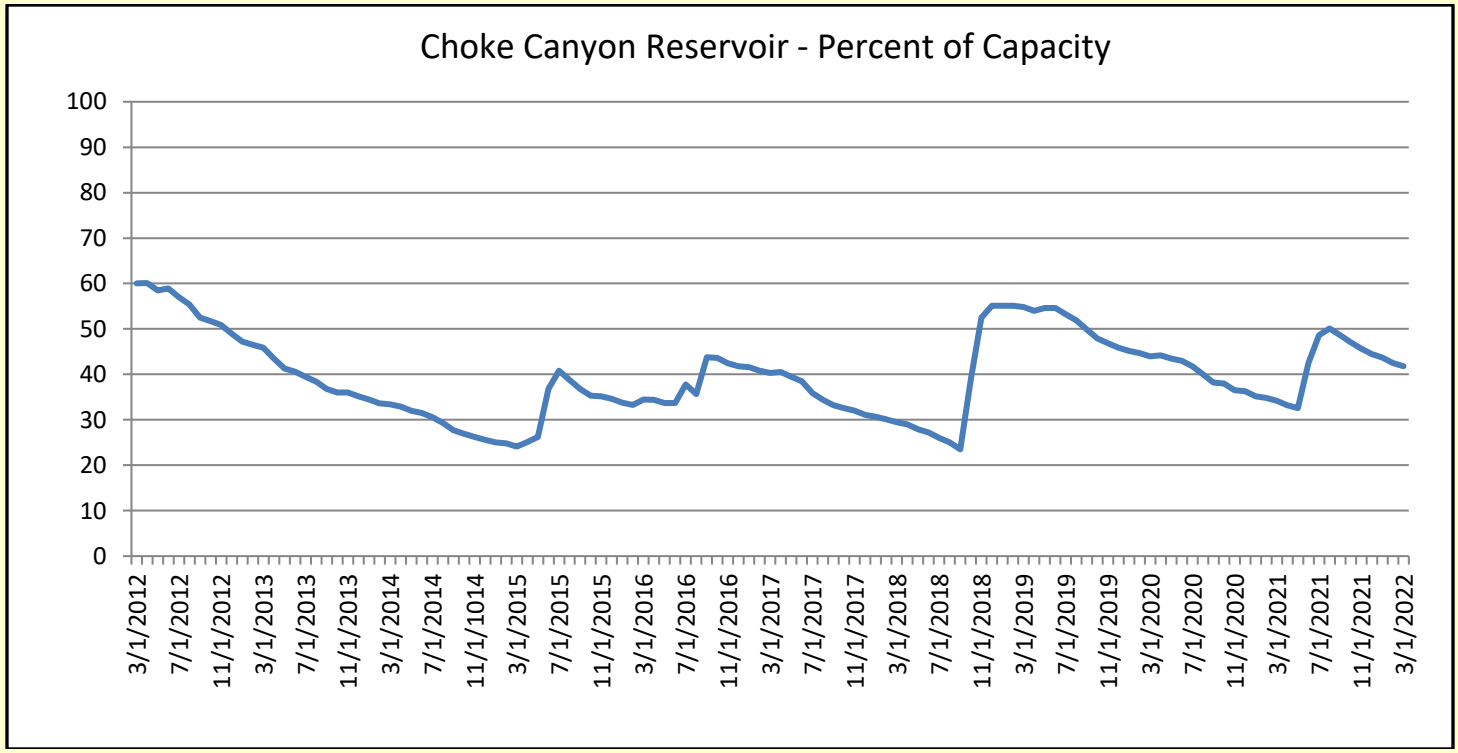
Station 13023 – Frio River at SH 16 at Tilden

Station 18418 – Leona River at FM 140 near Uvalde

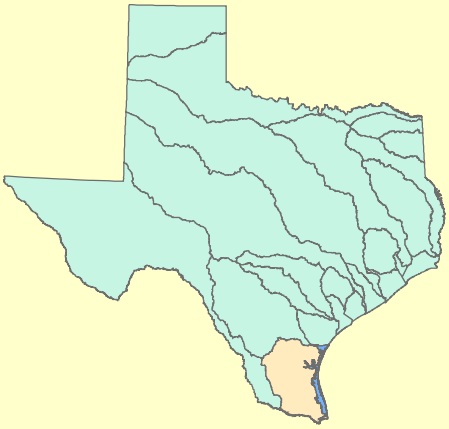
## Lake Levels

The Nueces River Watershed hit a dry spell that starting back in September 2021. Combined lake levels began the quarter (Dec 1st) at 55.0% and dropped to 50.8% by the end of February. For the Daily Reservoir System and Pass-Thru Status Report, please visit the website https://www.nueces-ra.org/CP/CITY/passthru/index.php.



## Basin 22 – Nueces-Rio Grande Coastal Basin

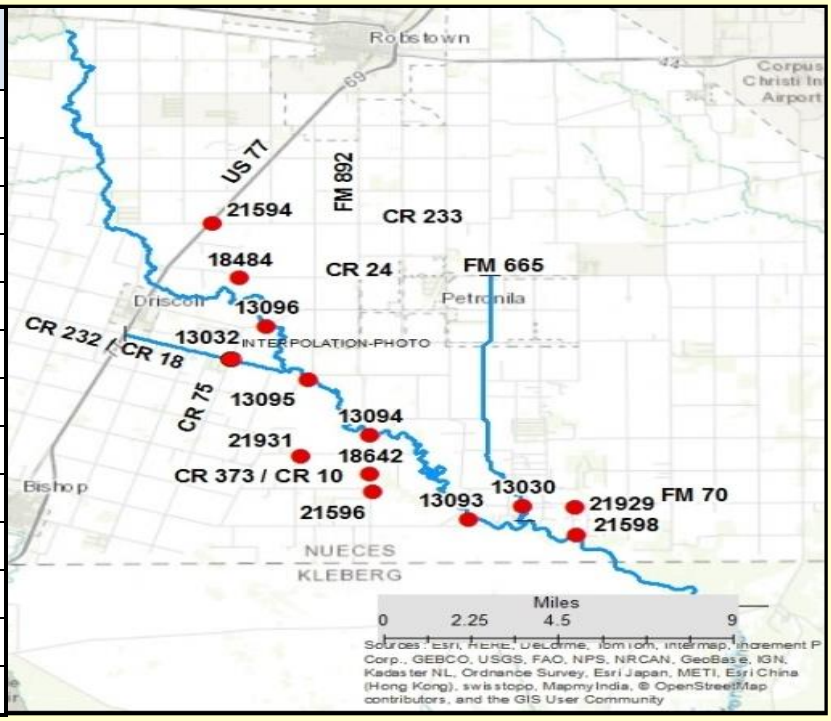


The Nueces-Rio Grande Coastal Basin covers approximately 10,400 square miles in South Texas and includes streams such as the Arroyo Colorado Tidal (Segment 2201) and above tidal (Segment 2202) in the Rio Grande Valley and Petronila Creek Tidal (Segment 2203) and above tidal (Segment 2204), which is a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

## 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 2022, NRA is conducting monthly monitoring at 13 sites, same as the past few years. Four sites are located on the main stem of Petronila Creek (13096, 13095, 13094, and 13093 – data is in bold on the graph). Specific conductivity monitoring data for December 2021 thru February 2022 is summarized below. (Disclaimer – Data has not been validated or input into the SWQMIS Database.)

| Site # | Dec. 21' (µmhos) | Jan 22' (µmhos) | Feb 22' (µmhos) |
|---|---|---|---|
| 21594 | 2,700 | 2,920 | 2,800 |
| 18484 | 45,100 | 46,000 | 41,000 |
| 13032 | 8,660 | 5,700 | 10,900 |
| 13096 | **18,600** | **23,700** | **19,800** |
| 13095 | **18,000** | **21,200** | **19,600** |
| 21931 | 56,800 | 67,600 | 35,600 |
| 13094 | **18,900** | **22,700** | **20,600** |
| 18642 | 36,300 | 41,300 | 33,500 |
| 21596 | 19,800 | 26,200 | 23,500 |
| 13093 | **11,700** | **19,900** | **22,000** |
| 13030 | 32,500 | 35,600 | 30,600 |
| 21929 | 28,800 | 33,000 | 27,400 |
| 21598 | 32,700 | 38,900 | 30,300 |




## Driscoll WWTP Update

Bacteria results from Station 13096 have been improving since the start of the new year. Water quality monitoring results for bacteria typically exceed 2,400 CFU/100 mL at the station that's downstream from the WWTP for the City of Driscoll. The WWTP was investigated by the TCEQ and found to have many issues that affected water quality (*E. coli* bacteria) in Petronila Creek. NRA's newly formed Wastewater Division took over operation of the plant in early/mid-2021 and began work on the maintenance issues. Many issues large and small were discovered. While bacteria results were extremely elevated in December 2021 (>2,400 CFU/100 mL), January's results (60 CFU/100 mL) and February results (6 CFU/100 mL) show great improvement.

**Arroyo Colorado Above Tidal (Segment 2202)**

Station 13079 is located on the above tidal portion of the Arroyo Colorado (Segment 2202) at the US-77 Bridge in Harlingen. Water quality at Station 13079 was monitored on Feb 8th. Bacteria levels (>2400MPN) were above the standard (126 MPN) during the site visit. Recent rains likely resulted in polluted runoff entering the stream.

Station 13079 – Arroyo Colorado at US 77 in Harlingen

**San Martin Lake (Segment 2494C)**

San Martin Lake system is located off the Brownsville Ship Channel in the Lower Rio Grande Valley. NRA field staff rented a bat from UTRGV to travel up the shallow waterway on Feb 8th. Enterococcus bacteria levels were elevated during the site visit (>2400 MPN). Recent rains likely resulted in polluted runoff entering the waterbody.

Station 22170 - San Martin Lake off Brownsville Ship Channel

## 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. NRA 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) which includes Los Olmos and San Fernando creeks.

### Hidalgo Main and Raymondville Drain (Segment 2491C)

The Hidalgo Main (Station ID 22003) and Raymondville Drains (Station ID 22004) are tributaries of the Lower Laguna Madre (Segment 2491). These two sites are located east of US-77 and were added to the CRP Monitoring Schedule back in 2018. Both sites were visited on January 5th. The Hidalgo Drain had a floating mat of vegetated debris across the drain that was present the last year and a half. Bacteria levels on the Hidalgo Main and Raymondville Drain were 121 MPN and 727 MPN (standard is 126 MPN) respectively. Nitrate nitrogen results were elevated at the Raymondville Drain at 6.48 mg/L; the nutrient screening level for nitrate nitrogen is 1.95 mg/L (Disclaimer – Data has not been validated or input into the SWQMIS Database.)

Station 22003 – Hidalgo Drain at FM 1420

Station 22004 – Raymondville Drain at CR 445

**San Fernando Creek (Segment 2492A)**

San Fernando Creek flows 45.6 miles from a point just east of the Nueces and Jim Wells County line to the confluence of the Cayo del Grullo arm of Baffin Bay in Kleberg County. Its watershed is 288,572 acres. San Fernando Creek is currently listed as **impaired** for **bacteria** (*E. coli*) in the 2020 IR Assessment. The creek was previously listed for enterococci bacteria (marine water) but the sampling location was determined to be upstream of the tidal boundary. The creek also has water quality **concerns** for **chlorophyll-*a***, **nitrate**, and **total phosphorus**. Water quality monitoring for the creek occurred on January 5th. Bacteria results on the site visit were elevated at 250 MPN/100mL. Nitrate concentrations were 0.83 mg/L (screening level is 1.95 mg/L) and total phosphorus was 2.64 mg/L (screening level is 0.69 mg/L)

Sampling at Station 13033, San Fernando Creek

**Los Olmos Creek (Segment 2492B)**

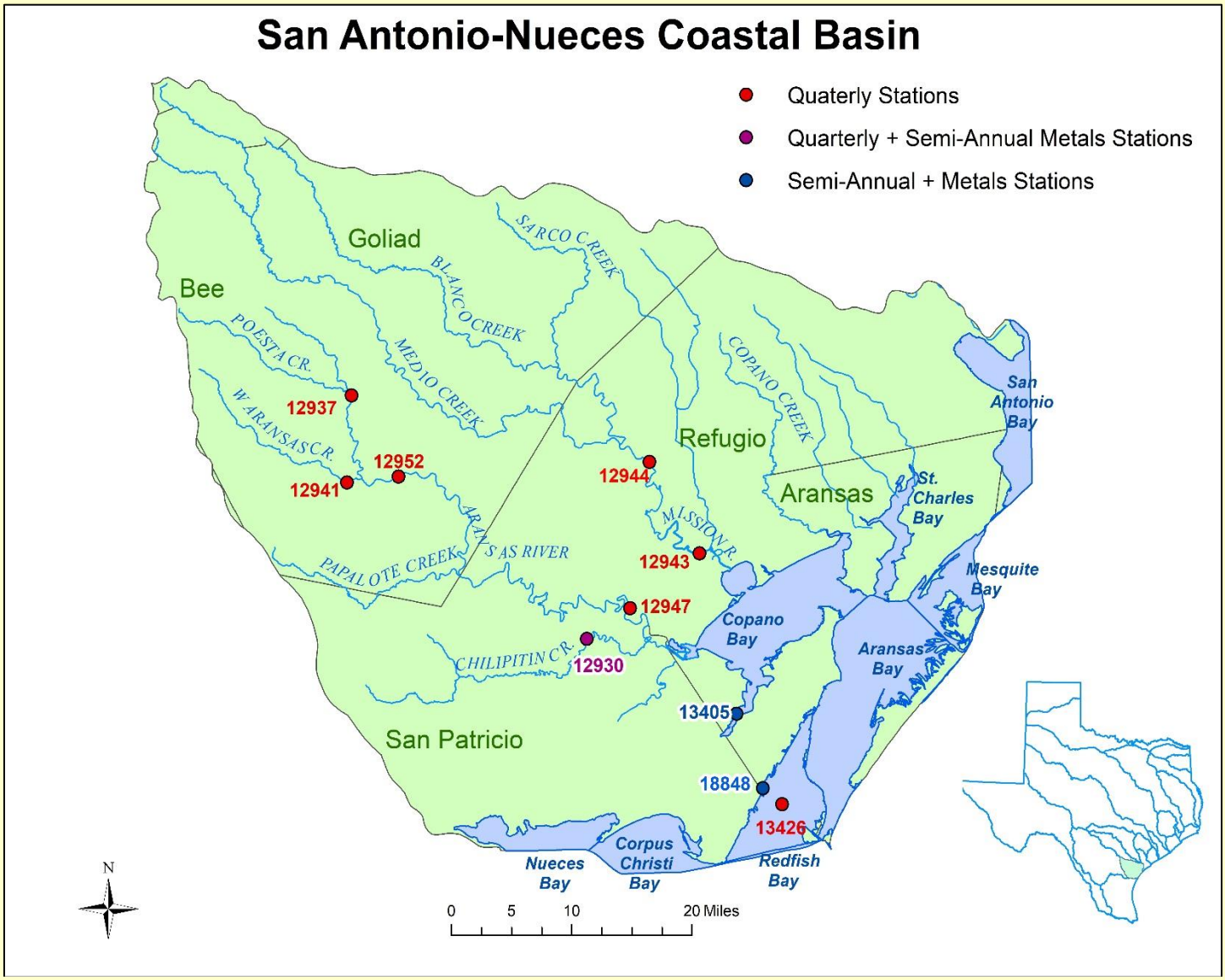
Los Olmos Creek runs 71 miles from southern Duval County to its confluence with Laguna Salada, an inlet of Baffin Bay. The creek was a new site (Station ID 13034) for FY2019, located at the bridge crossing at US 77 south of Riviera. NRA field staff visited the site on Jan 5th. Salinity values were much lower this quarter with a value of 34.8 PSU (seawater is around 35 PSU). Typical salinities in the shallow waterbody are 50-80 PSU although much higher salinities have been recorded. NRA field staff noticed that the bat colony had returned. Bacteria concentrations were slightly elevated on the site visit (47 MPN/100 mL); The enterococcus standard is 35 MPN/100mL. Typically, bacteria (enterococcus) at this site are >2,400 MPN/100mL. The creek did get some fresh water from storms a few weeks before the sample were taken.

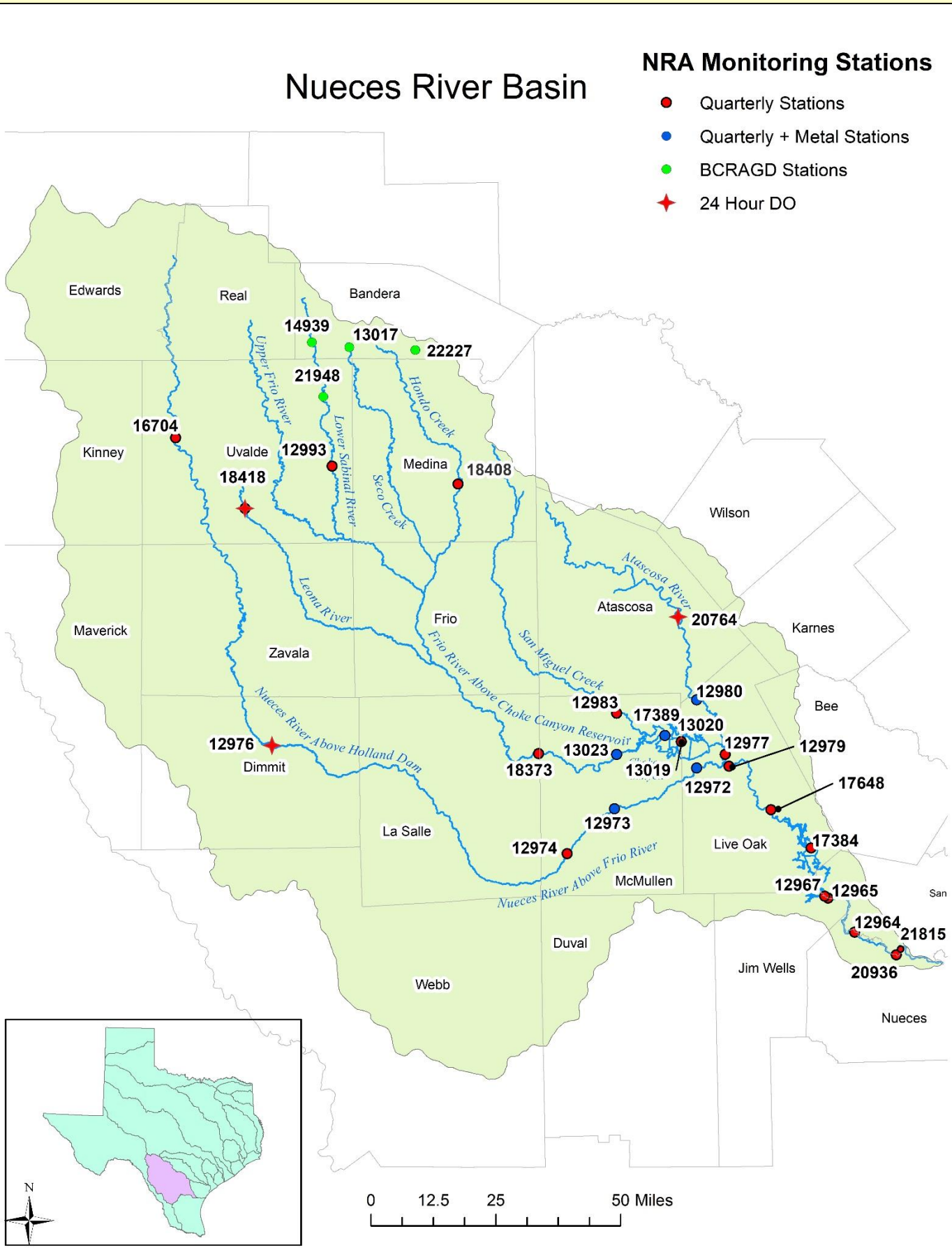
Station 13034 - Los Olmos Creek at US 77 near Riviera

Bat guano at Los Olmos Creek

**Up2U**

NRA's Up2U campaign is in high gear now. Our bags are being used all across the region to help with volunteer clean-up events. The Coastal Bend Bays and Estuaries Program (CBBEP) has been a great partner in getting the word out. The pic below shows how much trash accumulated on the side of the road on the way to the beach. Please stow your trash away while traveling down the road and keep Texas beautiful!


San Antonio-Nueces Coastal Basin
Quaterly Stations
Quarterly + Semi-Annual Metals Stations
Semi-Annual + Metals Stations
Goliad
Bee
Refugio
Aransas
San Patricio
SARCO CREEK
BLANCO CREEK
POESTA CR.
MEDIO CREEK
W ARANSAS CR.
COPANO CREEK
ARANSAS RIVER
MISSION R.
PAPALOTE CREEK
CHILIPITIN CR.
12937
12952
12941
12944
12943
12947
12930
13405
18848
13426
San Antonio Bay
St. Charles Bay
Mesquite Bay
Copano Bay
Aransas Bay
Nueces Bay
Corpus Christi Bay
Redfish Bay
N
0 5 10 20 Miles


Nueces River Basin
NRA Monitoring Stations
Quarterly Stations
Quarterly + Metal Stations
BCRAGD Stations
24 Hour DO
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
22227
21948
16704
12993
18418
18408
20764
12980
12983
17389
13020
12977
12979
12976
13023
18373
13019
12972
17648
12973
12974
17384
12967
12965
12964
21815
20936
Upper Frio River
Lower Sabinal River
Hondo Creek
Seco Creek
Leona River
Atascosa River
San Miguel Creek
Frio River Above Choke Canyon Reservoir
Nueces River Above Holland Dam
Nueces River Above Frio River
N
0
12.5
25
50 Miles

# Nueces-Rio Grande Coastal Basin

**Monitoring Stations**

- NRA Routine Stations