Nueces River Authority

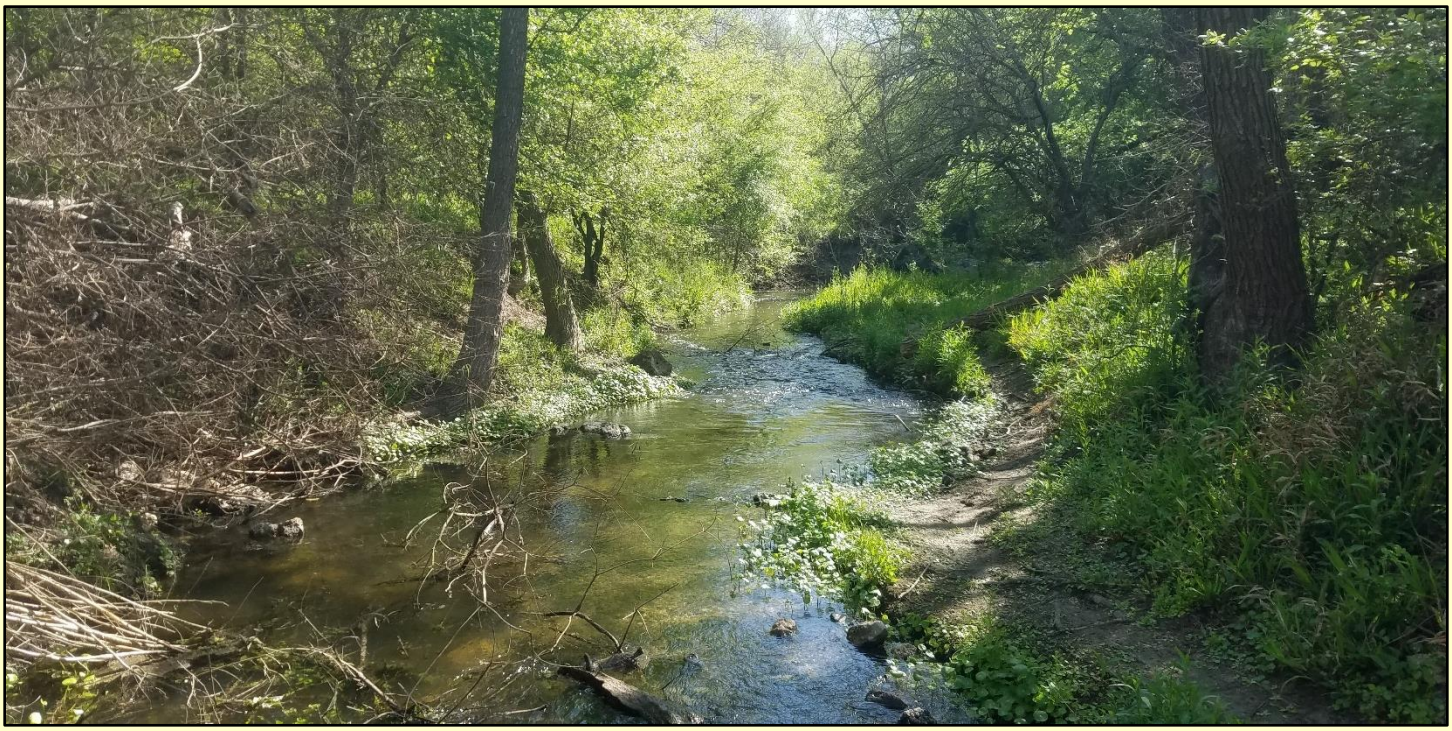
Steering Committee and Stakeholder Update for Q3
March – May 2022

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 12). 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.

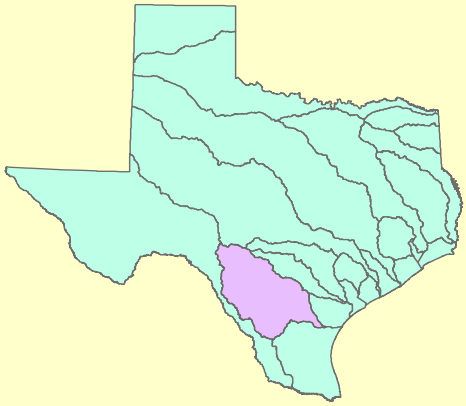
Mission and Aransas River Basin Sampling

Nueces River Authority conducts routine water quality monitoring at 7 locations in the Mission/Aransas watershed (map of sampling sites on page 12). Chiltipin Creek Tidal was monitored on May 24th. Bacteria results were elevated (Enterococcus was 340 CFU/100 mL). Mission and Aransas rivers as well as Aransas and Poesta creek stations were monitored on March 31st. All stations had bacteria results under the recreational standard of 126 CFU/100 mL. Station 12941, located on Aransas Creek at US 181 near Skidmore did have enough water to sample this quarter. Bacteria results were very low for this site at 22 CFU/100mL.



Station 12952 – Aransas River east of Skidmore on March 31st, 2022

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 13).

Nueces River Basin Sampling

The first 3 quarters of FY 2022 started off on a dry note in the Nueces River Basin. Site visits in Q3 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 – Low water level at the Nueces River at FM 624 on March 16th, 2022

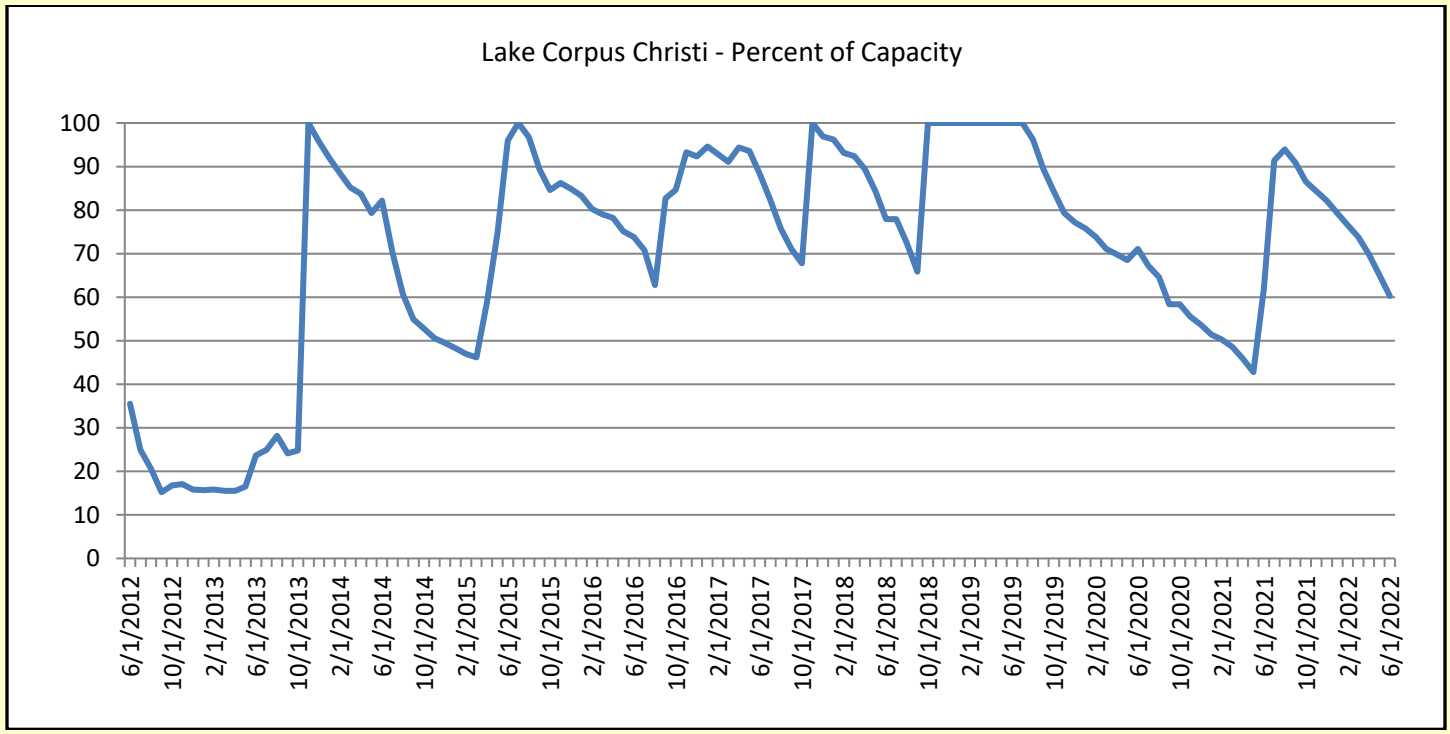
Station 18373 – Dry riverbed of the Frio River at Fowlerton

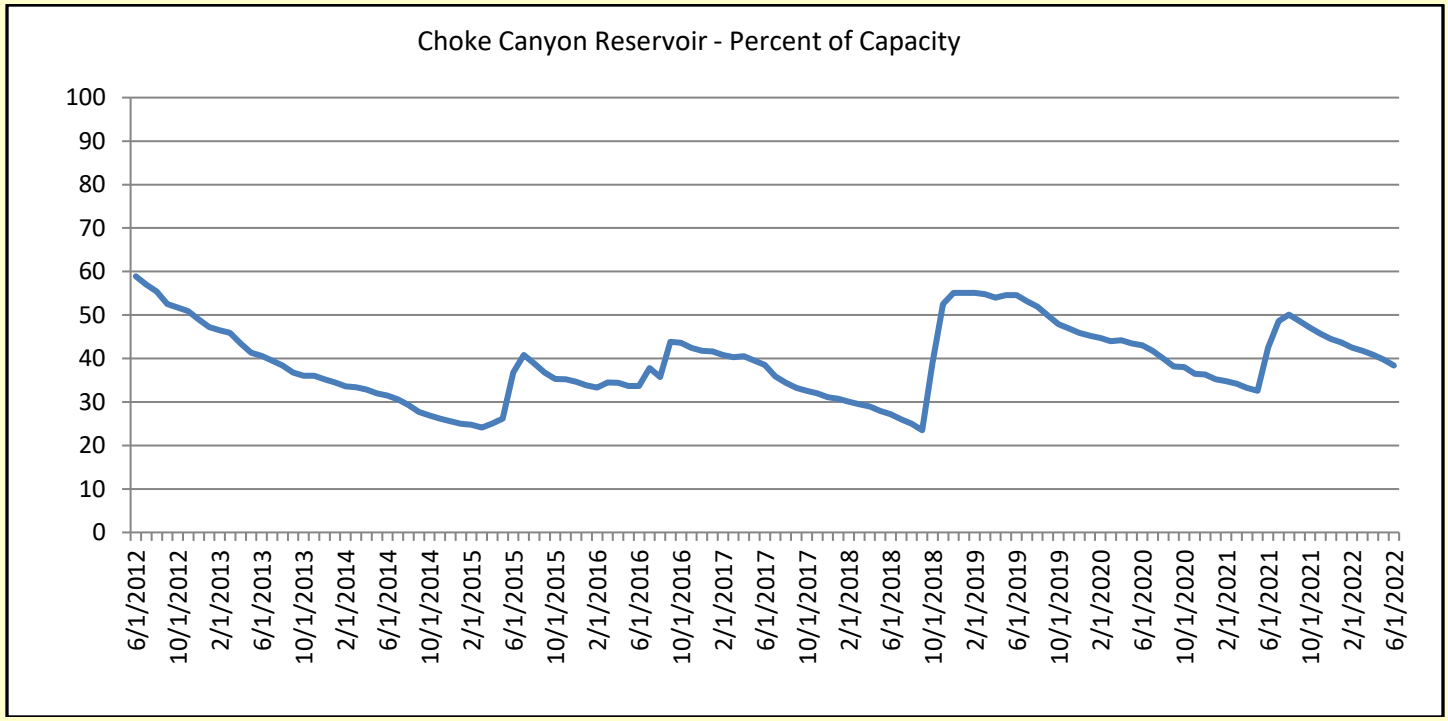
Station 12973 – Small pool on Nueces River at SH 16 south of Tilden

Station 18418 – Dry riverbed of Leona River at FM 140 near Uvalde

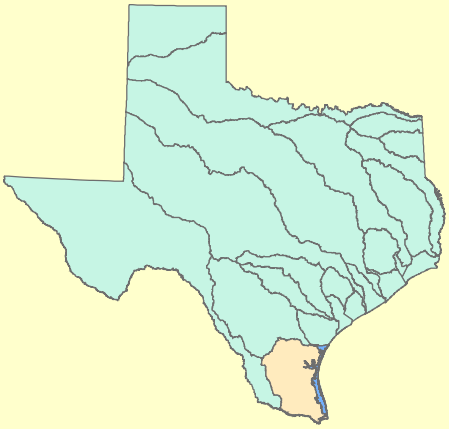
Lake Levels

The Nueces River Watershed hit a dry spell that starting back in September 2021. Combined lake levels began the quarter (March 1st) at 50.8% and dropped to 44.5% by the end of May. 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

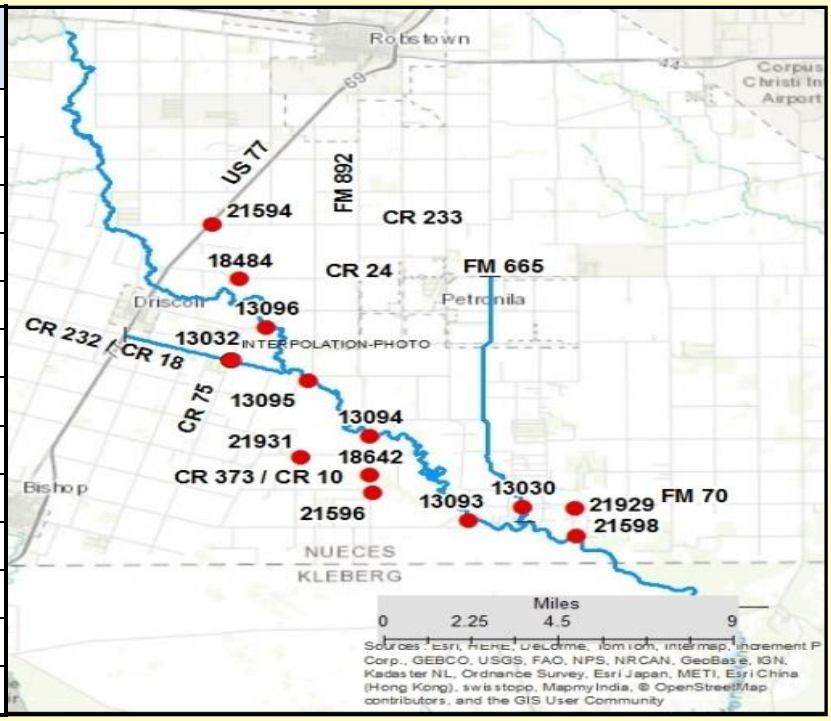


The Nueces-Rio Grande Coastal Basin covers approximately 10,400 square miles in South Texas and includes streams such as the Arroyo Colorado Tidal (Segment 2201) and above tidal (Segment 2202) in the Rio Grande Valley and Petronila Creek Tidal (Segment 2203) and above tidal (Segment 2204), which is a 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 March thru May is summarized below. (Disclaimer – Data has not been validated or input into the SWQMIS Database.)

Site #	Mar 22' (µmhos)	Apr 22' (µmhos)	May 22' (µmhos)
21594	3,200	No flow	No flow
18484	45,200	53,100	53,200
13032	13,200	No flow	No flow
13096	**22,500**	**26,800**	**26,600**
13095	**21,300**	**24,500**	**25,100**
21931	No flow	No flow	No flow
13094	**22,300**	**25,900**	**25,800**
18642	40,100	56,000	58,400
21596	22,000	30,000	31,000
13093	**23,800**	**26,900**	**28,100**
13030	34,300	28,400	52,200
21929	32,900	42,700	44,00
21598	37,300	53,400	50,100



Station 21598 – After long periods of low flow, the widgeon grass (*Ruppia maritima*) grows uninterrupted in this tributary of Petronila Creek.

Station 21929 – The water was unusually frothy at this tributary to Petronila Creek.

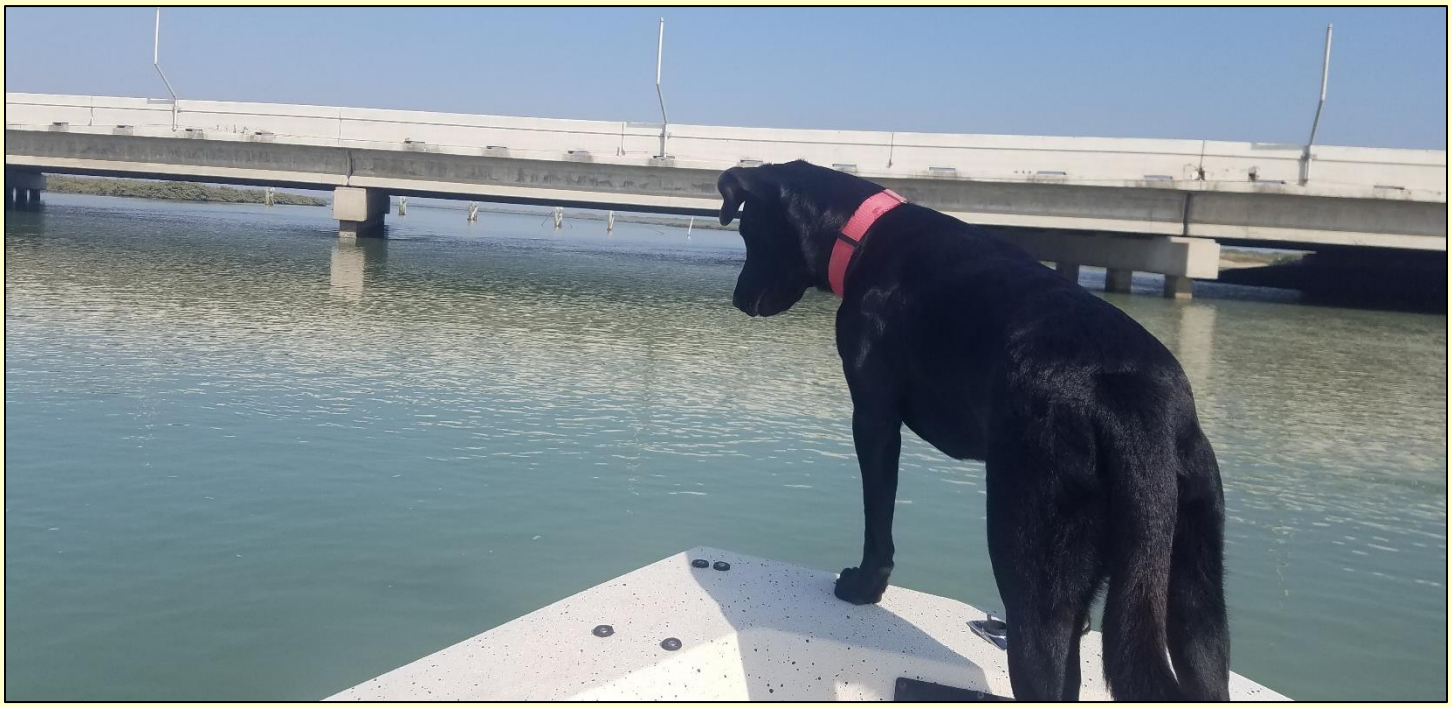
Arroyo Colorado Above Tidal (Segment 2202)

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 April 6th. Bacteria levels (2,400 MPN) were again highly elevated above the standard (126 MPN) during the site visit.

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 April 6th. Enterococcus bacteria levels were elevated during the site visit (170 MPN). Recent rains likely resulted in polluted runoff entering the waterbody. First mate, Boomer, was along for the ride.



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 March 23rd. 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 580 MPN and 517 MPN (standard is 126 MPN) respectively. Nitrate nitrogen results were slightly elevated above the screening level at the Hidalgo Drain at 2.55 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 March 23rd. Bacteria results on the site visit were highly elevated at >2400 MPN. Nitrate concentrations were 1.86 mg/L (screening level is 1.95 mg/L) and total phosphorus was 3.68 mg/L (screening level is 0.69 mg/L).

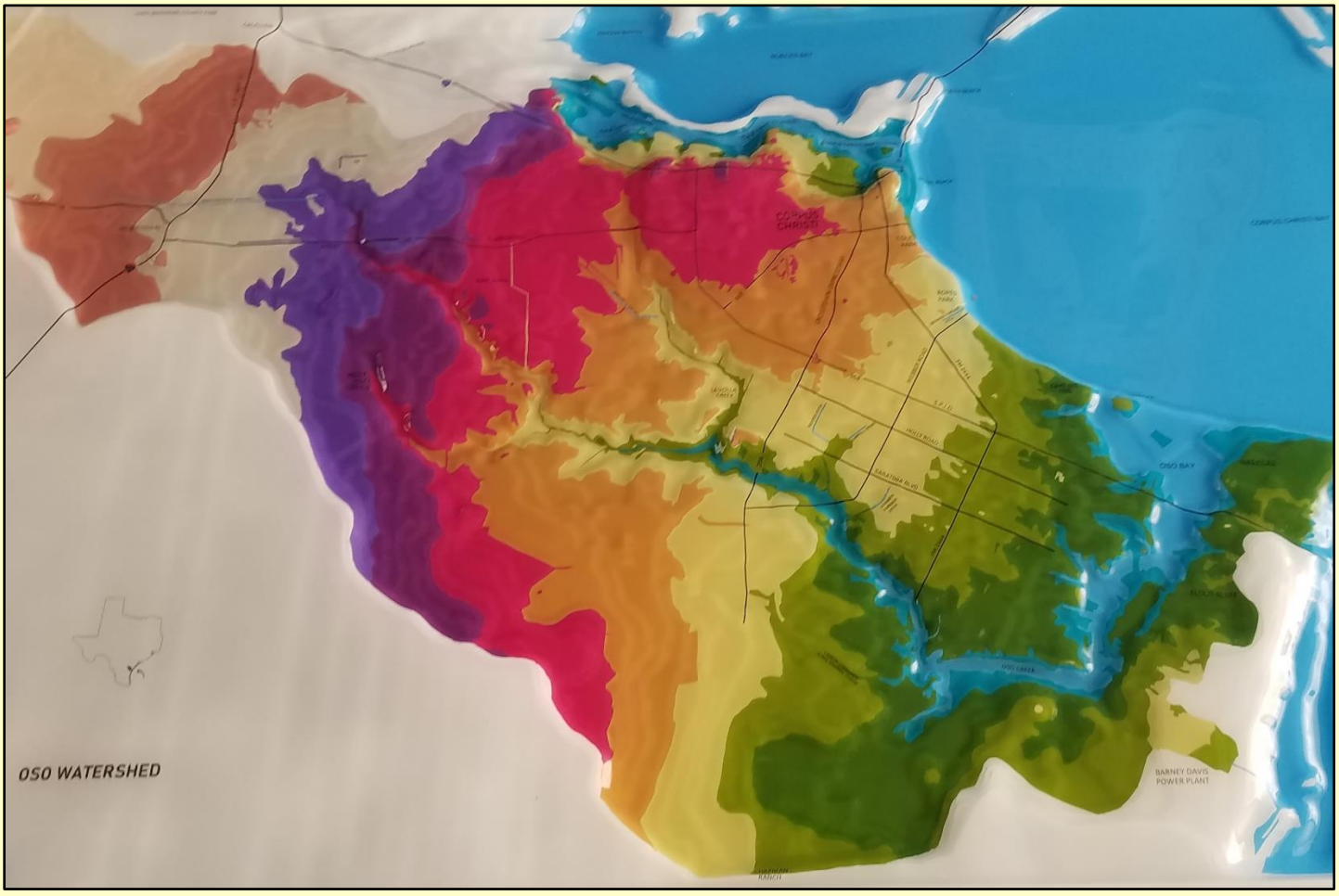
Los Olmos Creek Tidal (Segment 2492B)

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 March 23rd. Salinity values were starting to creep up this quarter with a value of 36.9 PSU, up from 34.8 PSU in Q2 (seawater is around 35 PSU). We typically see salinity values above 60 ppt at the station. Bacteria concentrations were highly elevated on the site visit (>2,400 MPN/100 mL); The enterococcus standard is 35 MPN/100mL. Nitrate concentrations were 1.86 mg/L (screening level is 1.95 mg/L) and total phosphorus was 0.51 mg/L (screening level is 0.69 mg/L).

Station 13034 - Los Olmos Creek at US 77 near Riviera

Education outreach

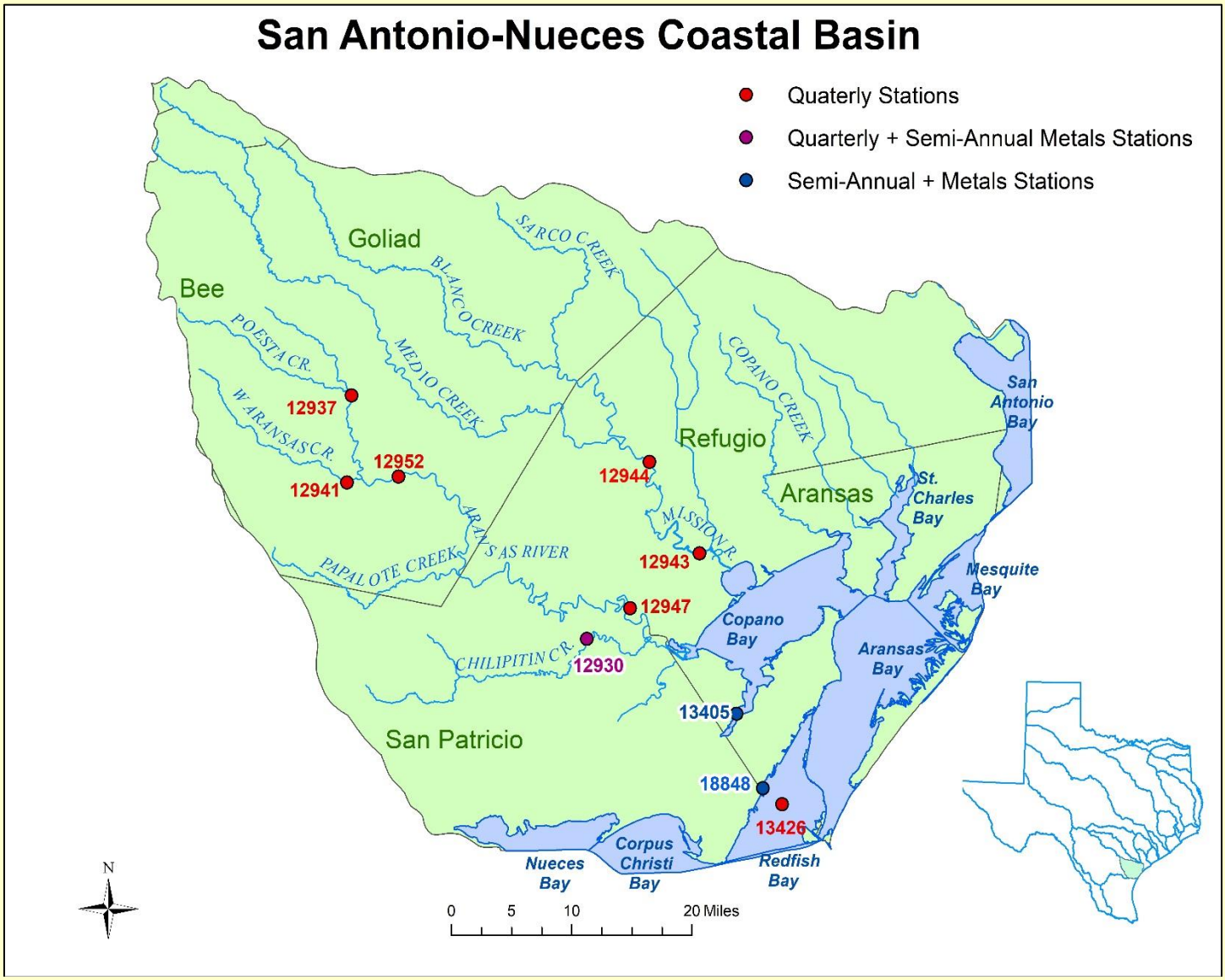
NRA's education outreach program was busy this quarter. In March, 1,461 at 11 events, In April, 1,935 people at 17 events including Earth Day Bay Day, Water Day, and numerous classroom visits. We're also showing off our new Oso Creek watershed model to Corpus Christi area schools.

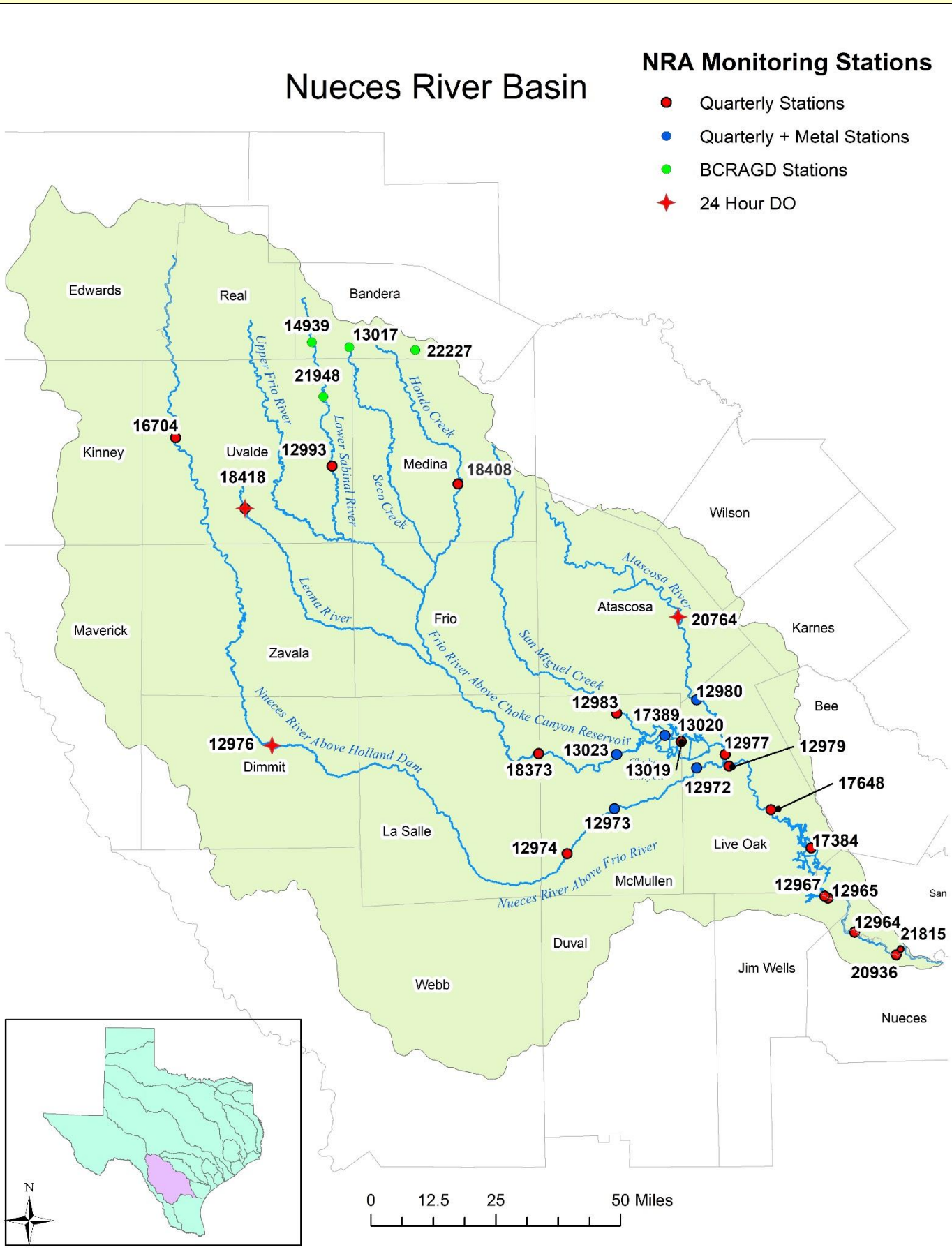


Sky Lewey

Sadly, we lost our beloved Sky Lewey, shortly after her retirement from NRA at the end of April. From our Nueces River Authority - Clean Rivers Program Facebook Page:

"Sky had been with the NRA for over 22 years working on many projects including our award-winning education program, invasive species removal (giant cane/Arundo donax), the Up2U litter prevention program, riparian evaluations/assessments, and helping to protect water quality in every way she could. She was the go-to person for engaging with stakeholders and shared her love and knowledge of the Nueces River Basin with countless people young and old. We will surely miss Sky Lewey and all the good that she brought to the world. She truely loved the river. We can honor her legacy every day by caring for our little slice of heaven down here in South Texas. Thank you, Sky. God speed."


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