Nueces River Authority

Steering Committee and Stakeholder Update #4
June - August 2020

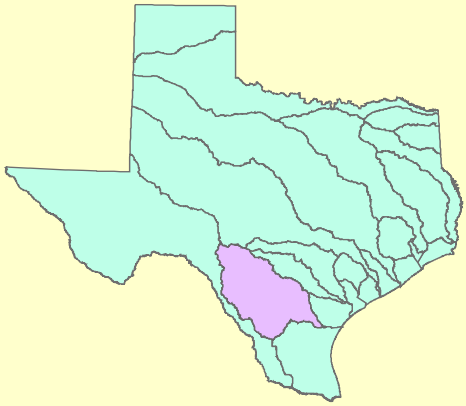
Basin 20 - San Antonio-Nueces Coastal Basin

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 is listed for the same parameter in the 2016 Assessment.

Mission and Aransas River Sampling

Nueces River Authority conducts routine water quality monitoring at 7 locations in the Mission/Aransas watershed (map of sampling sites on page 11). All seven sites were visited on June 24th. Station 12941, located on Aransas Creek at US 181 near Skidmore, had enough water to sample (*E. coli* bacteria only). The bacteria standard on the waterbody has recently been raised from 126 to 630 MPN. Lab results indicated a bacteria concentration of 187 MPN. Bats were observed roosting under the bridge at the site samples were taken. Flow was <1 ft^3/s.

Basin 21 - Nueces River Basin

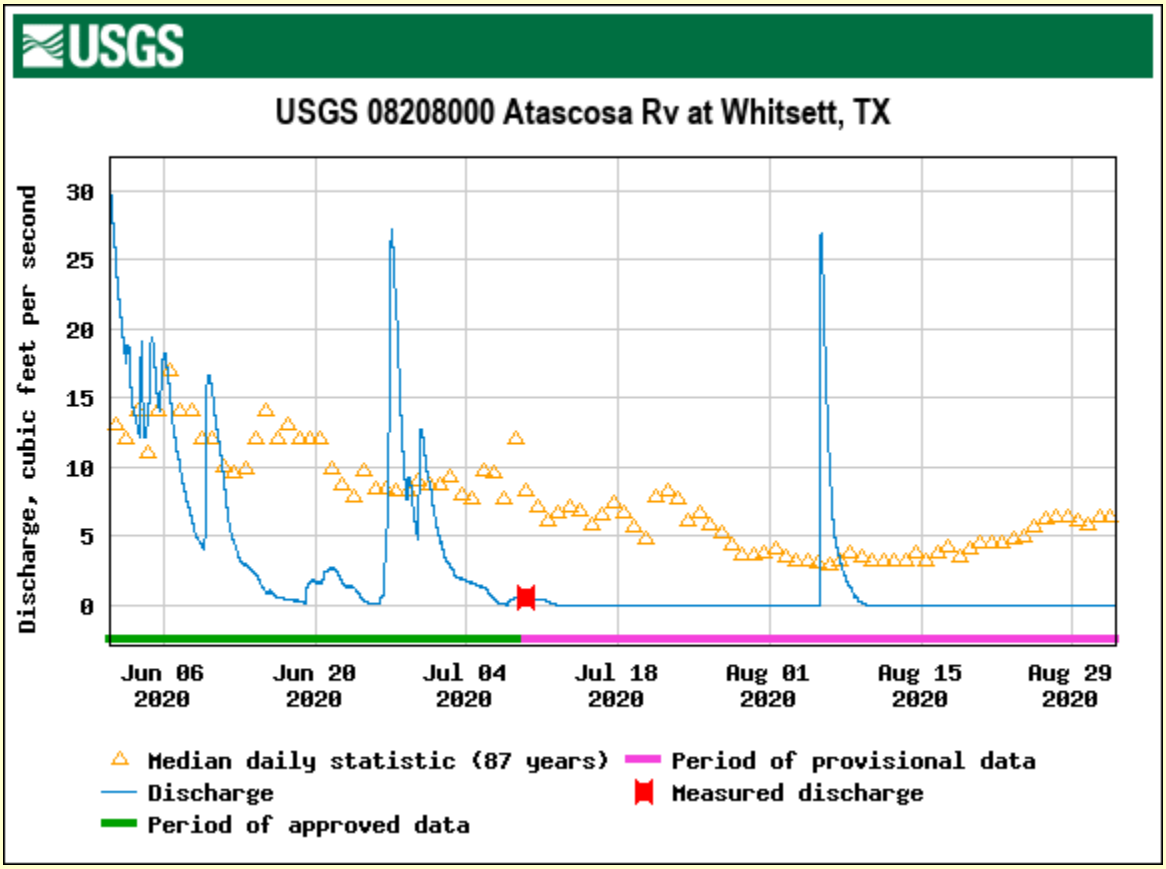


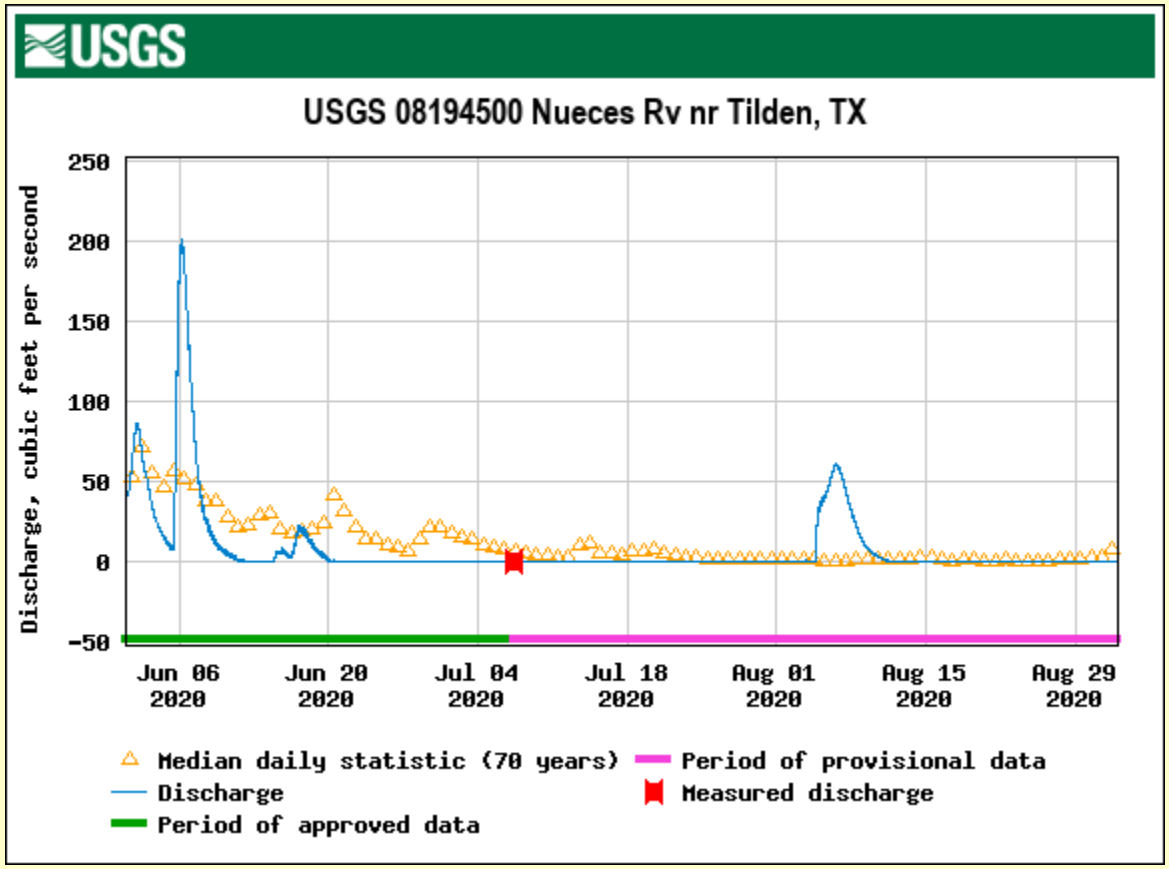
The Nueces River Basin covers approximately 17,000 square miles in South-Central Texas. The Nueces River winds 315 miles from its source in the Edwards Plateau near Rock Springs (elevation 2,402) through the brush country of the South Texas Plains to its end in Nueces Bay, located near Corpus Christi.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

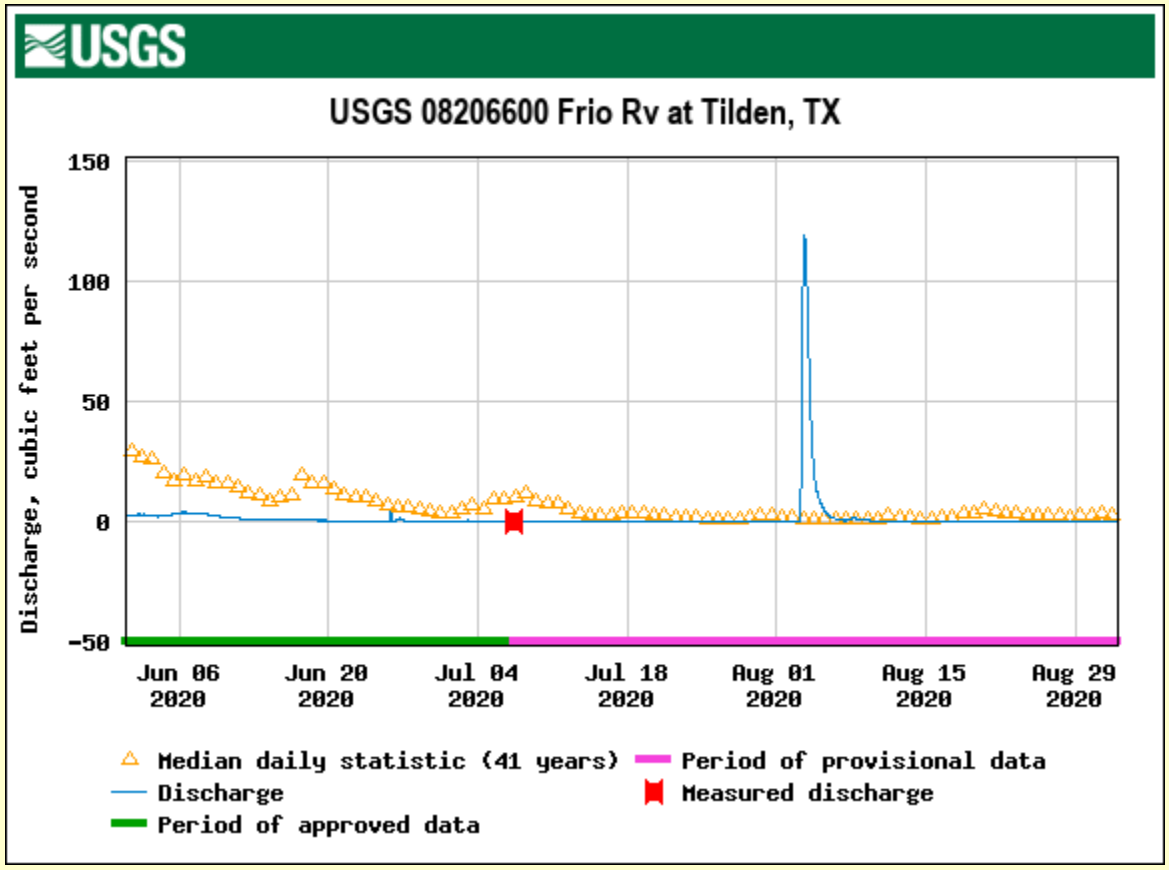
Nueces River Authority conducts routine water quality monitoring at 28 locations throughout the Nueces River Basin (see map on page 10).

Streamflow in the Nueces River Basin

The fourth quarter was a very dry quarter despite the active hurricane season that saw the passage of Hurricane Hannah and other tropical activity. Streamflow was very low throughout the river basin. Metals sampling did not occur at a couple of stations (Atascosa and San Miguel Creek) due to a lack of flowing water. No 24-hour dissolved monitoring occurred due to a lack of flow/dry riverbeds as well. A summary of flow from the rivers upstream of the reservoir system are below courtesy of the USGS.

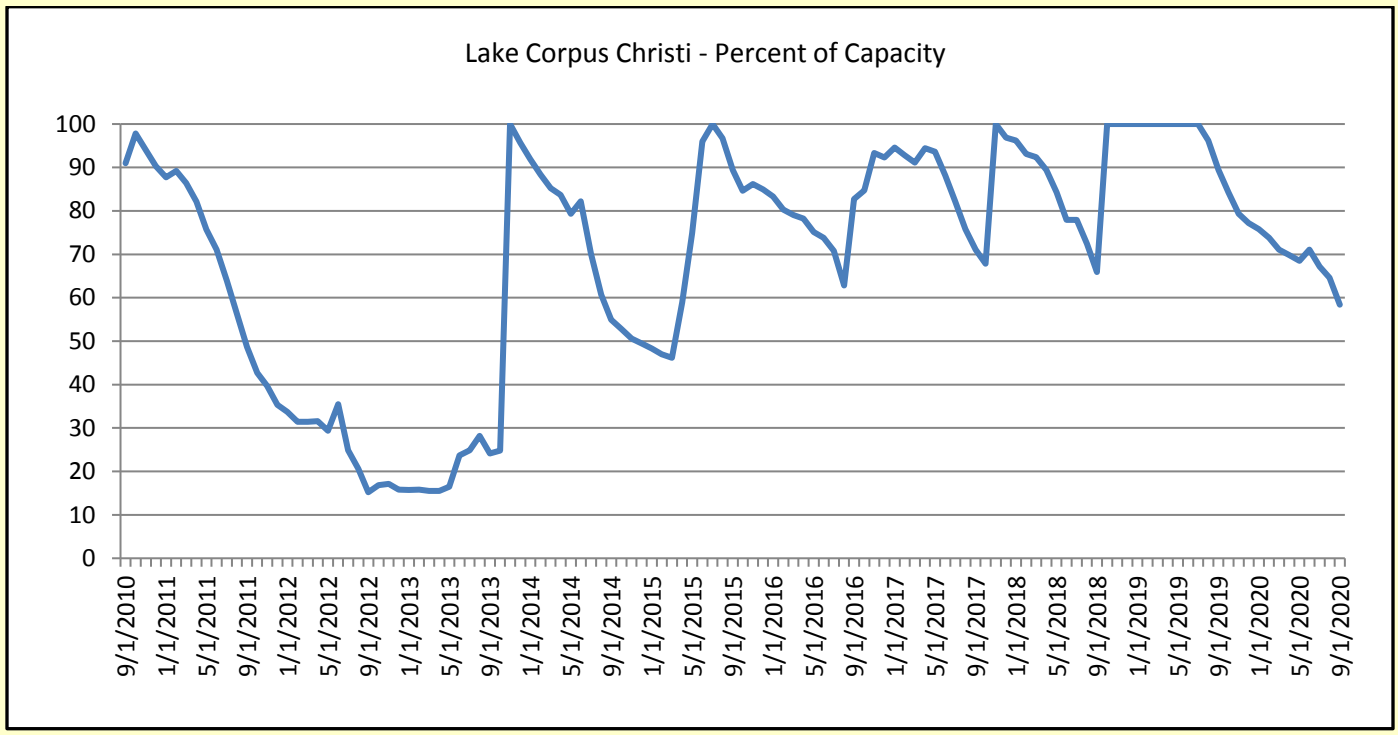


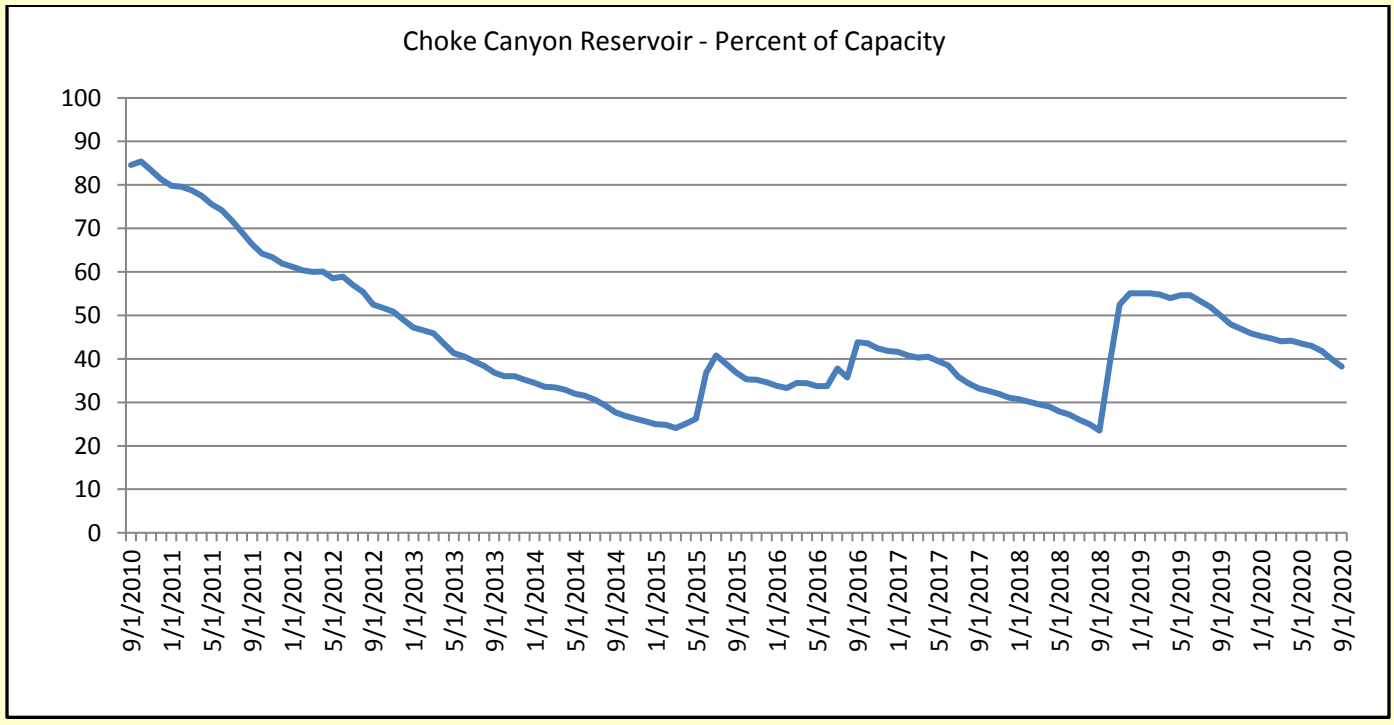

USGS
USGS 08194500 Nueces Rv nr Tilden, TX
Discharge, cubic feet per second
250
200
150
100
50
0
-50
Jun 06 2020
Jun 20 2020
Jul 04 2020
Jul 18 2020
Aug 01 2020
Aug 15 2020
Aug 29 2020
Median daily statistic (70 years)
Discharge
Period of approved data
Period of provisional data
Measured discharge


USGS
USGS 08206600 Frio Rv at Tilden, TX
Discharge, cubic feet per second
150
100
50
0
-50
Jun 06 2020
Jun 20 2020
Jul 04 2020
Jul 18 2020
Aug 01 2020
Aug 15 2020
Aug 29 2020
Median daily statistic (41 years)
Discharge
Period of approved data
Period of provisional data
Measured discharge

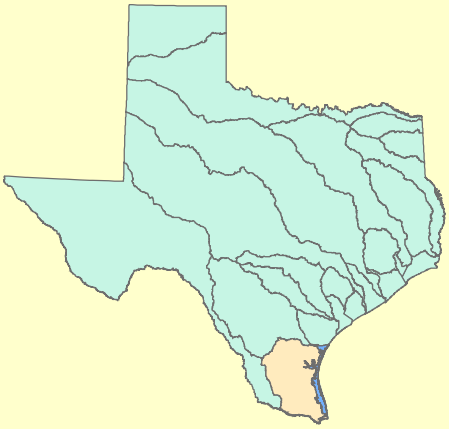
Lake Levels

Combined lake levels for the reservoir system dropped from 50.9% to 43.9% by the end of the 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.





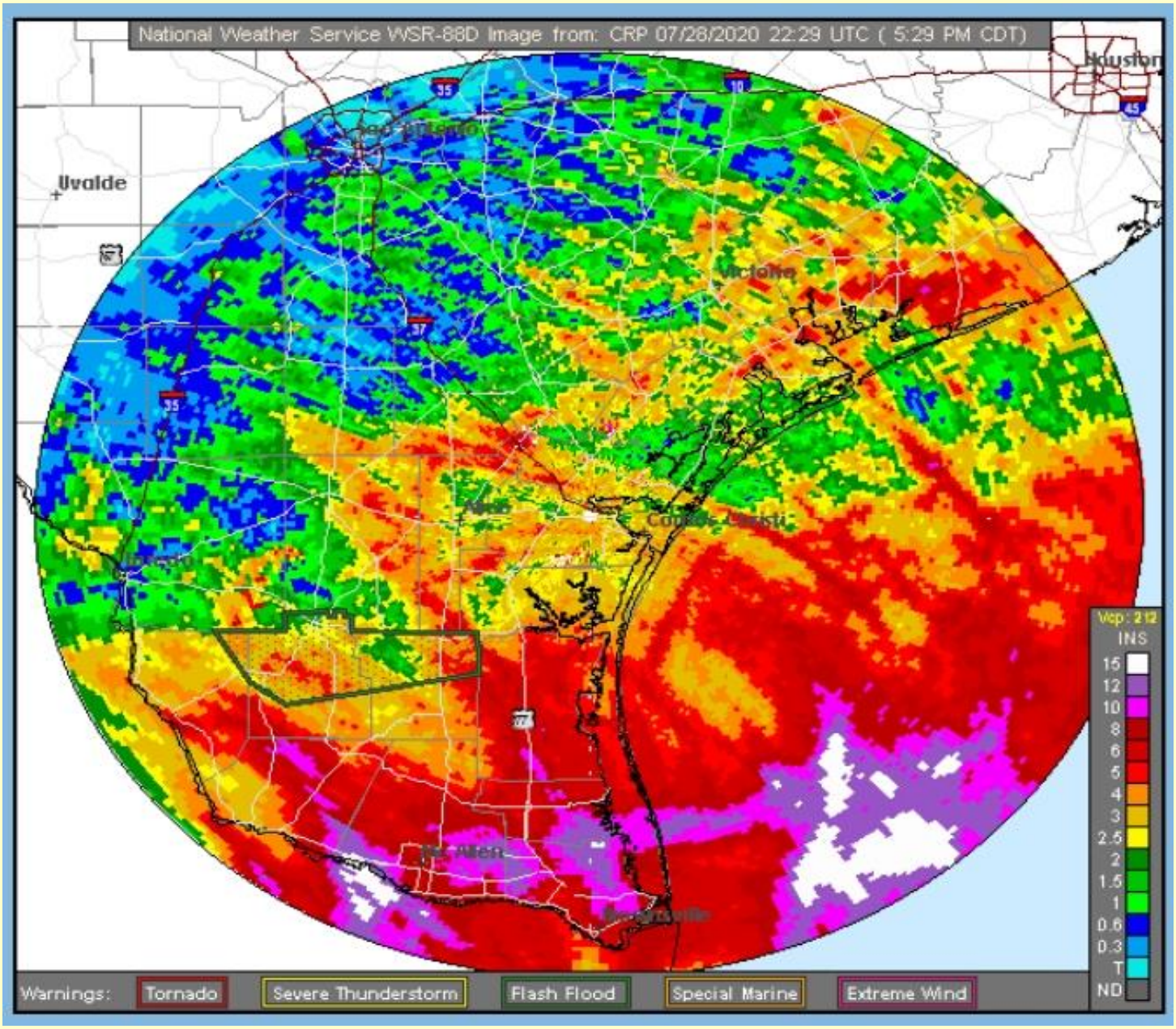
Basin 22 – Nueces-Rio Grande Coastal Basin



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.

Hurricane Hannah

The passage of Hurricane Hannah was the big news event for much of the Texas Coast in the 4th quarter. The Lower Rio Grande Valley got the lion's share of the precipitation according to the storm total graph generated by the National Weather Service.



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 August 11th. Bacteria levels (60 MPN) were below the standard (126 MPN) during the site visit.

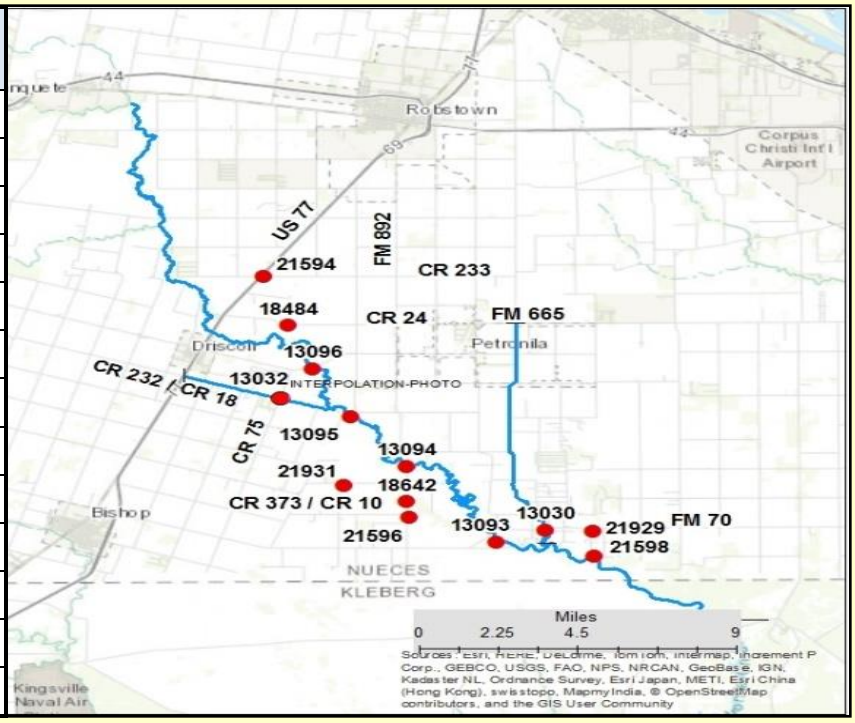
San Martin Lake (Segment 2494C)

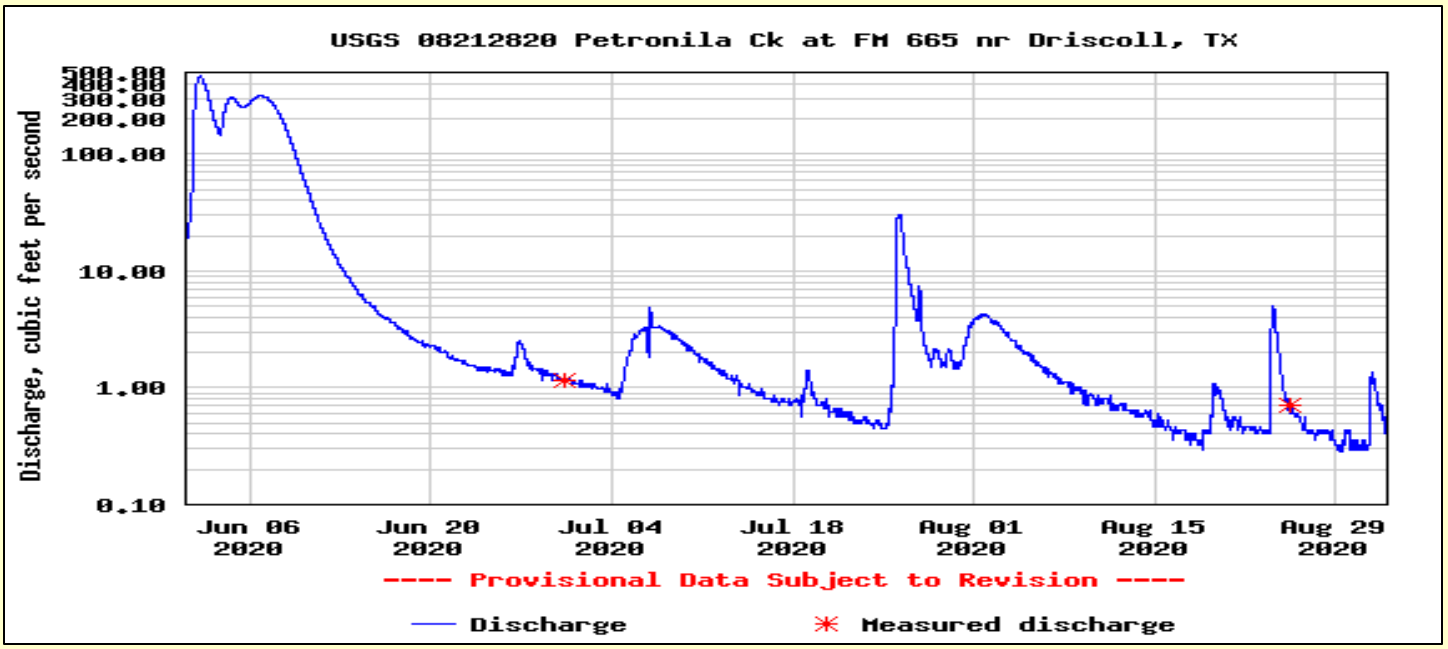
San Martin Lake system is located off the Brownsville Ship Channel in the Lower Rio Grande Valley. NRA field staff rented a boat from UTRGV to travel up the shallow waterway on Aug 11th. The site was monitored 2 weeks after the passage of Hurricane Hannah which brought significant precipitation to the area. Enterococcus bacteria levels were very high during the site visit (>2400 MPN). Nutrient levels were below detection limits of lab equipment at the City of Corpus Christi Water Utilities Lab. If you would learn more about the project, visit the website: http://www.co.cameron.tx.us/llmbsc/

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 2020, 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). Monitoring for June thru August is summarized below. Data collected on June 3rd occurred following a rain event that freshened up all of the tributaries. Following the rain events in June and July, a few of groundwater seeps in the tributaries seemed to have stopped flowing, likely due to siltation. We have seen this occur before and it usually resolves itself and begins flowing again after a month or two. (Disclaimer – Data has not been validated or input into the SWQMIS Database.)

Site #	June 17 (µmhos)	July 9 (µmhos)	August 5 (µmhos)
21594	200	930	1,070
18484	371	31,900	24,500
13032	665	No Flow	9,130
13096	**321**	**2,680**	**3,080**
13095	**319**	**4,680**	**4,660**
21931	1090	Dry	No Flow
13094	**325**	**5,730**	**6,230**
18642	1,310	7,790	No Flow
21596	2,870	21,700	No Flow
13093	**351**	**12,600**	**6,380**
13030	276	27,300	8,630
21929	292	16,400	5,770
21598	361	28,600	806





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)

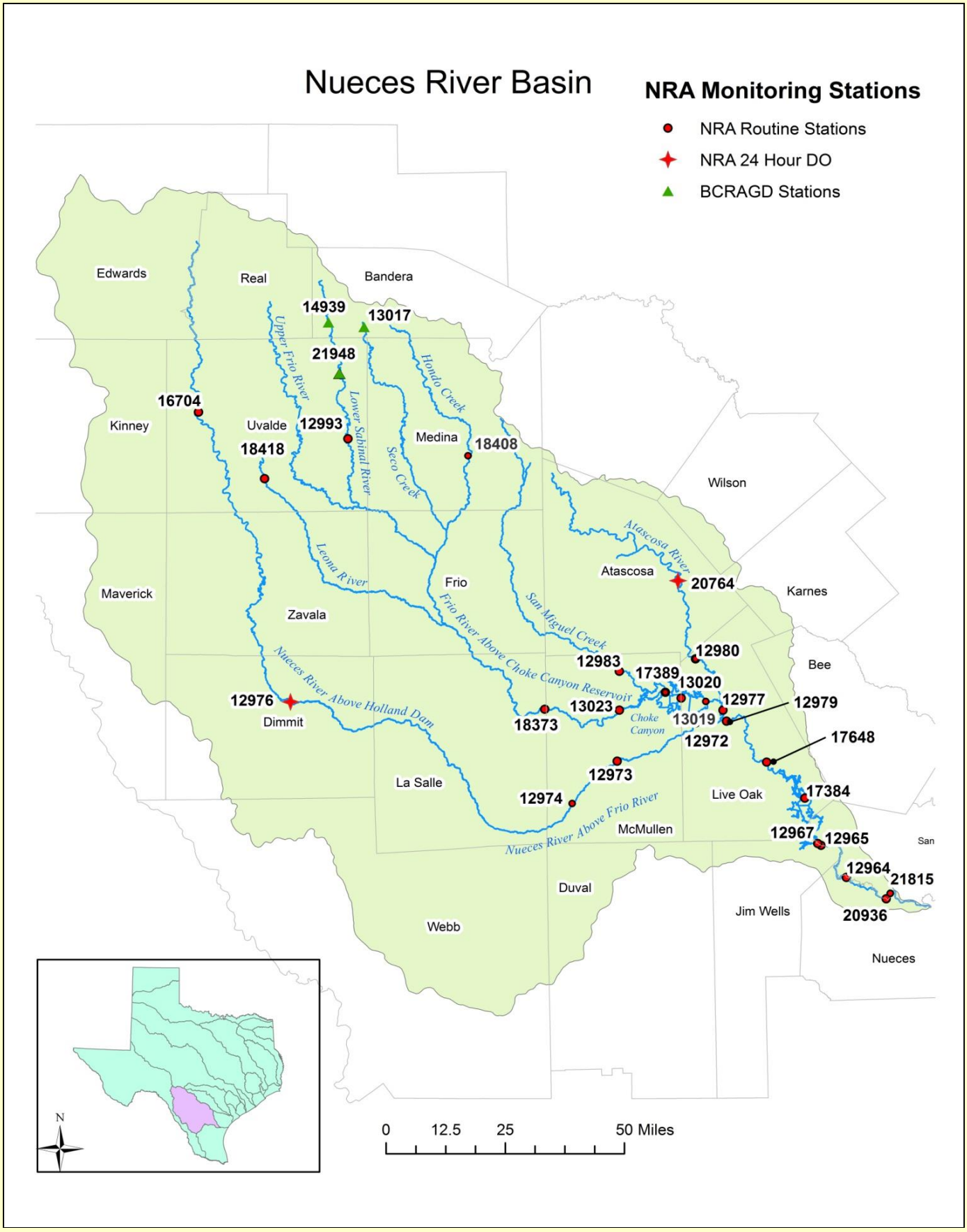
The Hidalgo Main (Station ID 22003) and Raymondville Drains (Station ID 22004) are tributaries of the Lower Laguna Madre (Segment 2491). These two sites are located east of US-77 and were added to the CRP Monitoring Schedule back in 2018. Both sites were visited on July 15th. Bacteria levels on the Raymondville Drain were 190 MPN and 55 MPN on the Hidalgo Main Drain (standard is 126 MPN). (Disclaimer – Data has not been validated or input into the SWQMIS Database.)

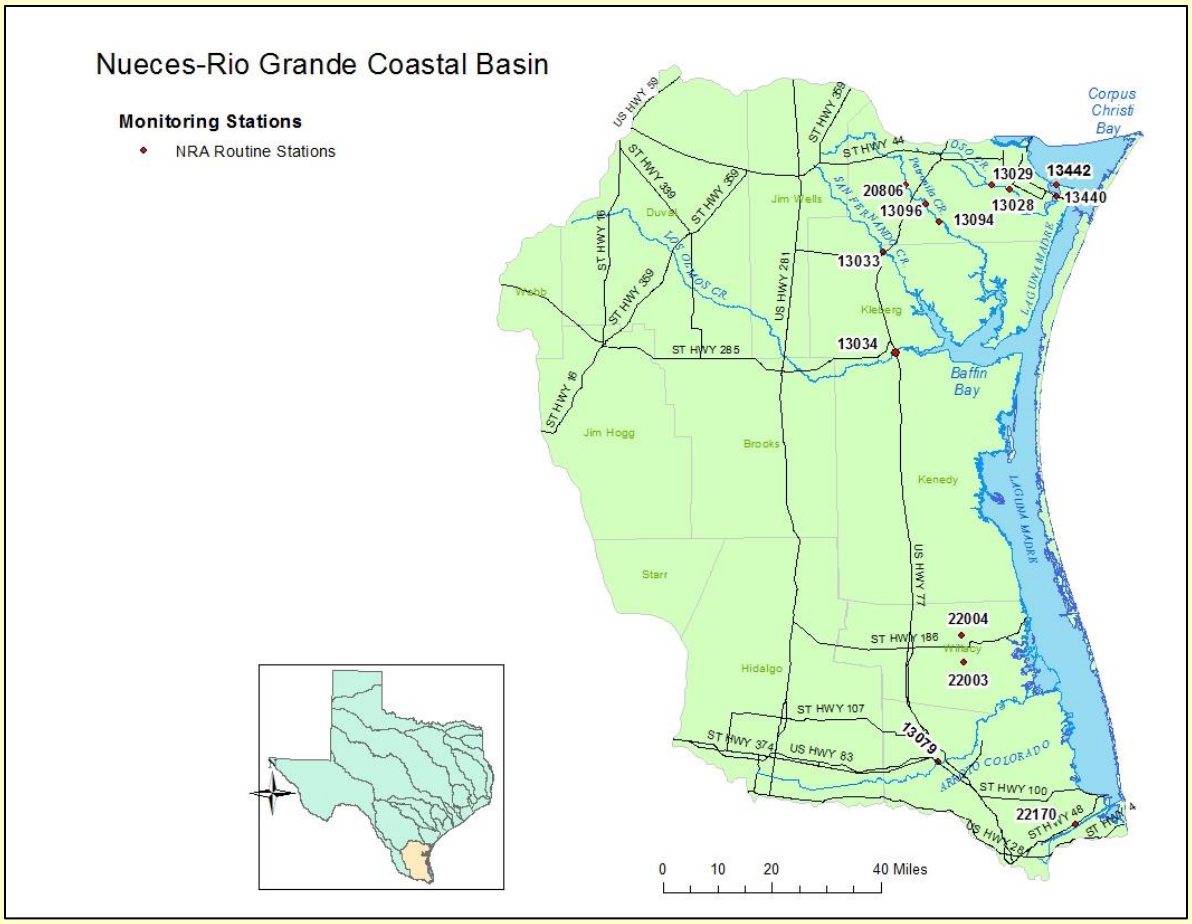
Los Olmos Creek (Segment 2492B)

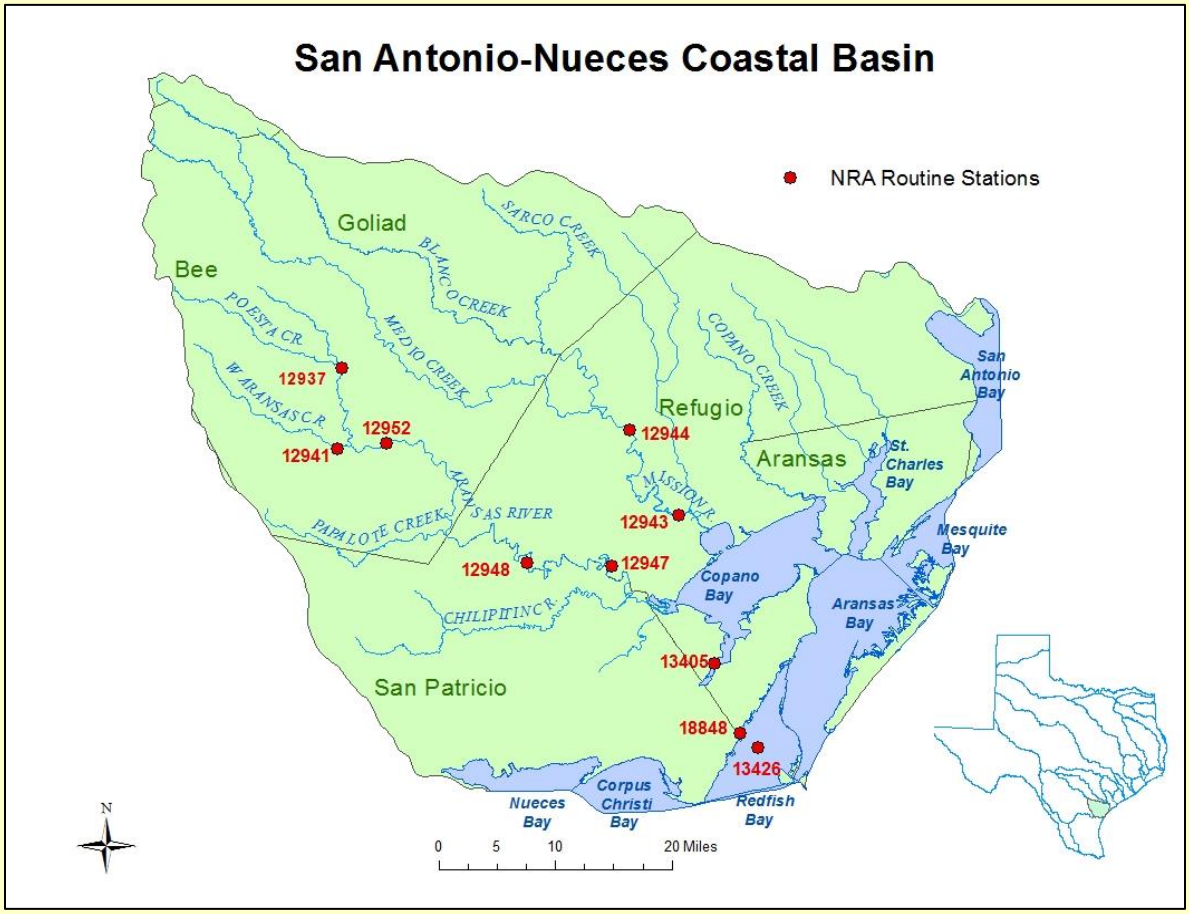
Los Olmos Creek runs 71 miles from southern Duval County to its confluence with Laguna Salada, an inlet of Baffin Bay. The creek was a new site (Station ID 13034) for FY2019, located at the bridge crossing at US 77 south of Riviera. NRA field staff visited the site on July 15th. Salinity values again around the 70 PSU range (seawater is around 35 PSU) and the shallow waterbody (about 1 foot deep) had an orange color at the site visit. Bacteria concentrations were very high on the site visit (>2,400 MPN), same as the last 3 quarters.

Outreach and Education

Classroom visits by NRA's Education and Outreach Program were all cancelled this quarter due to the school closings by the Governor's Office. For more information about outreach and education, contact slewey@nueces-ra.org.


Nueces River Basin
NRA Monitoring Stations
NRA Routine 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
San
Duval
Jim Wells
Webb
Nueces
14939
13017
21948
16704
12993
18418
18408
20764
12980
12983
17389
13020
12977
12979
12976
13023
13019
18373
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
Choke Canyon
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
Corpus Christi Bay
Baffin Bay
Jim Wells
Duval
Jim Hogg
Brooks
Kenedy
Kleberg
Starr
Hidalgo
Willacy
US HWY 281
ST HWY 285
ST HWY 44
ST HWY 359
ST HWY 186
ST HWY 107
ST HWY 374
US HWY 83
ST HWY 100
ST HWY 48
US HWY 77
LAGUNA MADRE
SAN FERNANDO CR
LAS CUEVAS CR
ARROYO COLORADO
13442
13029
13028
13440
20806
13096
13094
13033
13034
22004
22003
13079
22170
0 10 20 40 Miles


San Antonio-Nueces Coastal Basin
NRA Routine Stations
Goliad
Bee
Refugio
Aransas
San Patricio
SARCO CREEK
BLANCO CREEK
MEDIO CREEK
POESTA CR
W ARANSAS CR
ARANSAS RIVER
PAPALOTE CREEK
MISSION R
COPANO CREEK
CHILIPITIN CR
12937
12952
12941
12944
12943
12948
12947
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