

Nueces River Authority Clean Rivers Program Steering Committee and Stakeholder Update #1
September - November 2013
December 12th, 2013

Dear Steering Committee Members and Stakeholders,

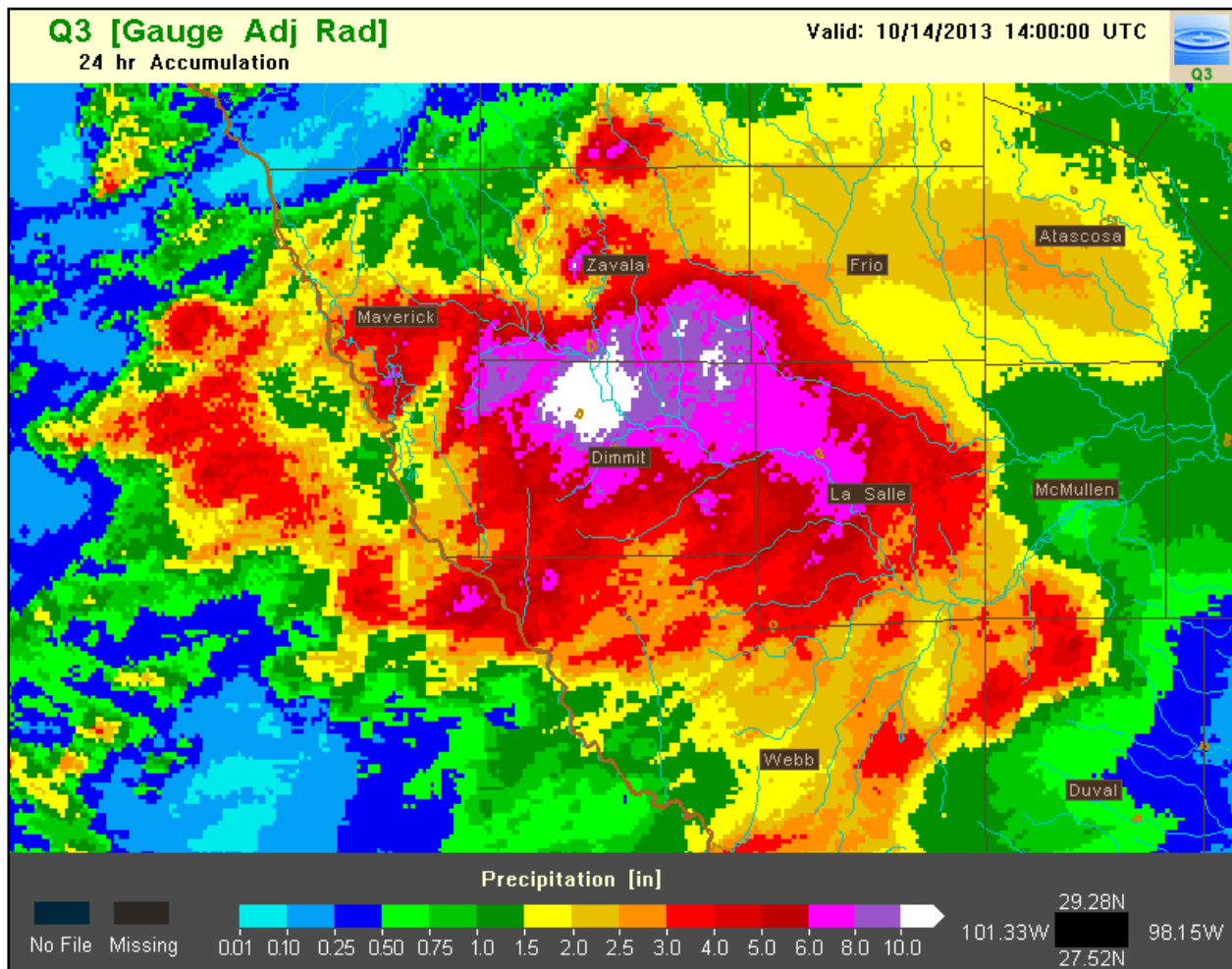
This is the first of an ongoing series of quarterly email updates for the Nueces River Authority's FY 2014 – 2015 Clean Rivers Program. Related activities throughout the area are also discussed.

CRP Routine Monitoring

During the September through November 2013 quarter, NRA conducted routine monitoring at 39 stations. No 24-hour dissolved oxygen monitoring took place during the quarter on the middle Nueces River. For the first time in years, NRA field staff was able to launch the boat in Lake Corpus Christi to acquire water quality data at two stations there. NRA will be seeking to fill in the data gap from the drought by conducting additional sampling in Lake Corpus Christi while accessibility of the boat ramp exists.

Flood/Drought Status in Nueces River Basin

It doesn't happen very often that reporting on extreme flooding as well as extreme drought happens in the same quarter within the watershed. That's exactly what happened in the first quarter as a significant rain event unfolded October 13th in La Salle and Dimmit Counties in the middle Nueces River watershed. According to the National Weather Service, 10+ inches of rain fell in the vicinity of Asherton (close to



where flooding originated on June 19th, 2013) resulting in massive flooding on the Nueces River . Maximum flows close to 29,000 cubic feet per second (cfs) were recorded at the USGS stream gage just



south of Tilden. A summary of the flood from the National Weather Service website ranked the peak crests. ”The Nueces River at Asherton recorded a crest of 29.70 feet on the 14th. This is the 5th highest all-time crest on record for Asherton. The Nueces River at Cotulla recorded a crest of 22.81 feet on the 17th. This is the 4th highest all-time crest on record for Cotulla. South of Tilden on the Nueces River, a crest of 23.50 feet on the 17th was measured. This is the 3rd highest all-time crest for South of Tilden on the Nueces River. The Nueces River at Three Rivers recorded a crest of 38.95 feet on the 21st. This is the 10th highest all-time crest for Three Rivers.”

The adjacent watershed for the Frio River received much less precipitation with flows topping out around 2,000 cfs at the gage in Tilden. Maximum flow for the Atascosa River at Whitsett was approximately 460 cfs but did not coincide with the October rain event near Asherton. Additionally, some of the lowest flows on the Atascosa River (around 0.22 cfs at the Whitsett gage) were recorded in September.

Wastewater Plant in Carrizo Springs Floods

Rising water levels associated with the flood on the Nueces River in October flooded out the wastewater plant that serves the town of Carrizo Springs. Raw sewage was reported to be uncontained and flowing downstream to Lake Corpus Christi.

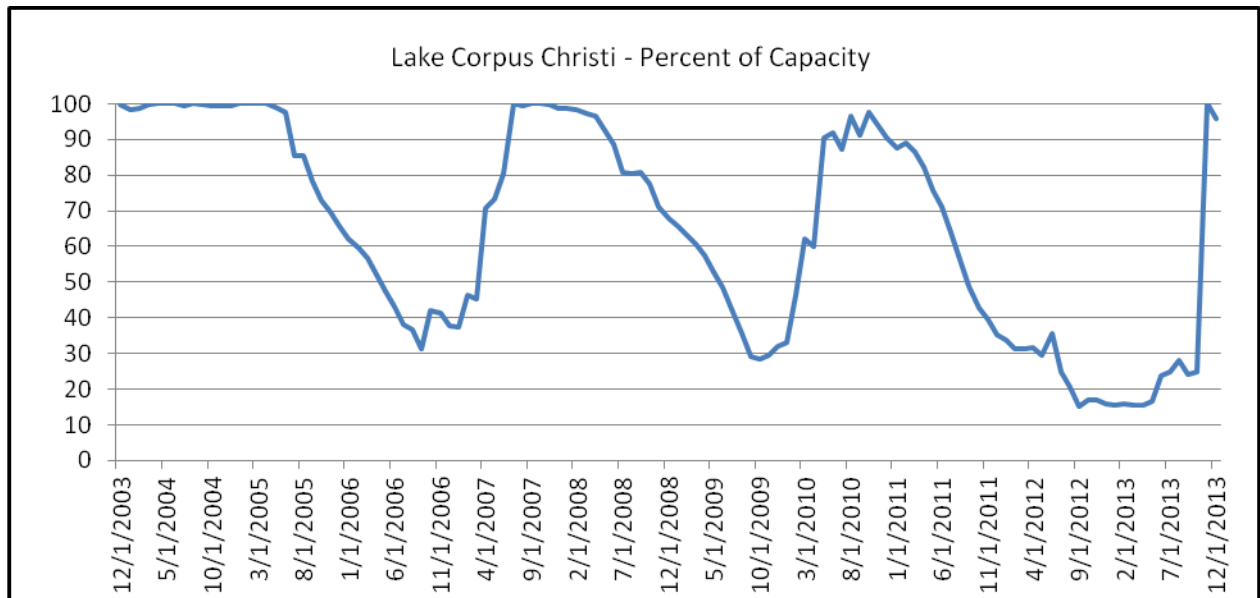
Frio and Atascosa Rivers Flowing Backwards?

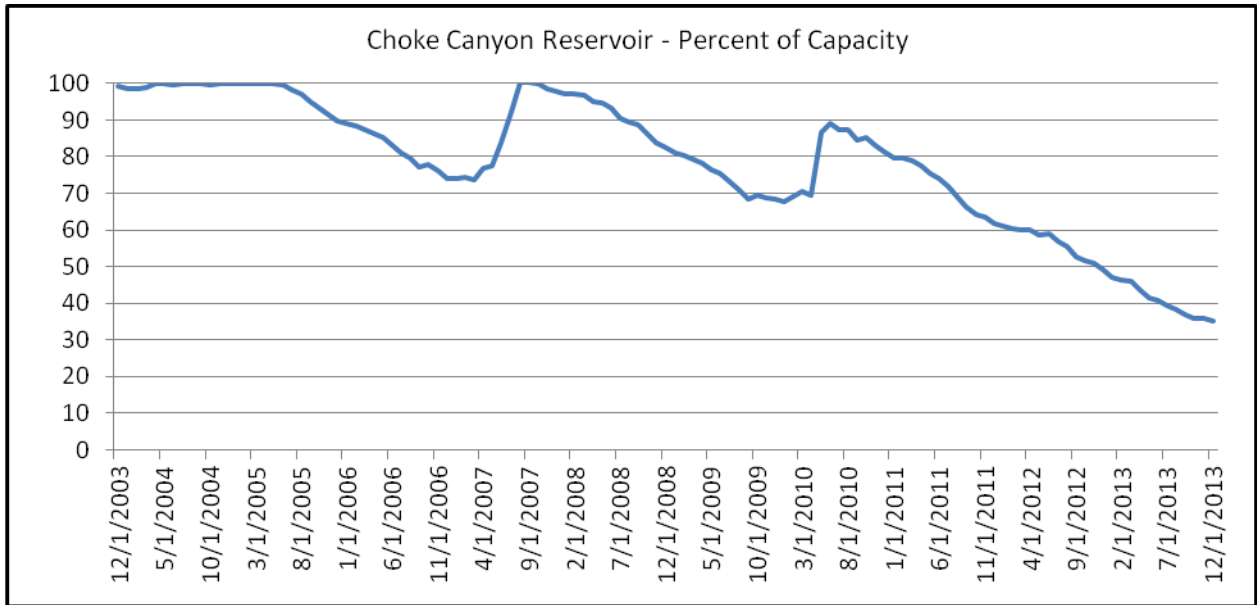
Another unusual phenomenon associated with the flooding on the Nueces River was that it caused the Frio and Atascosa Rivers to back up near the town of Three Rivers. Flood waters caused the stream gage on the Nueces River near the town of Three Rivers to rise approximately 37 feet at the peak of the flood allowing water from the Nueces River to flow upstream to the Dam at Choke Canyon Reservoir and travel up part of the Atascosa River.



Lake Corpus Christi Fills to Capacity

The good news for those who have been watching lake levels, a flood on the Nueces River completely filled Lake Corpus Christi on October 31st after a very persistent drought. As of November 30st, 2013, Lake Corpus Christi was at 95.8% of capacity (see chart below); Choke Canyon Reservoir was at 35.1% of capacity (see chart below). The Reservoir System (Lake Corpus Christi + Choke Canyon Reservoir) was at 51.5% of capacity by the end of November, up from 35.6% as reported at the end of August 2013.





Lake Corpus Christi Satellite Comparison

Source - NASA Landsat 6 OLI

Aug 31, 2013
24% Capacity

Nov 3, 2013
100% Capacity

weather.gov/corpuschristi

US National Weather Service
Corpus Christi

@NWSCorpus

Lake Corpus Christi Fills to Capacity – Continued

Field staff from the Nueces River Authority, as mentioned in the CRP Routine Monitoring section, was able to conduct the routine sampling at two stations at Lake Corpus Christi on November 12th. Lake Corpus Christi is currently listed on the 303(d) list of impaired waters for Total Dissolved Solids (TDS). TDS values in Lake Corpus Christi before the flood were in the low 500 mg/L range and dropped to 319 mg/L after the lake filled. Dissolved oxygen (DO) values were very low in the upper end of the reservoir with NRA field staff recoding values of 1.4 mg/L mid-lake near the Hideaway Hills subdivision in the Northeast end of the lake. The water was very clear and yellow (due to leaching tannins) and appeared to be black in deeper water much like clear water does offshore. TCEQ and TPWD were notified of a strong sewage odor in the upper end of the lake during the time NRA conducted quarterly sampling. The odor was most likely attributed to the rotting grasses and shrubs recently submerged by rising water. DO values near the dam were 5.4 mg/L throughout the water column.



Arroyo Colorado Watershed Partnership

The Arroyo Colorado Watershed Partnership hosted the Steering Committee meeting on October 17th at the Estero Llano Grande World Birding Center located at 3301 S. FM 1015. The group discussed the interactive topographic watershed model for the Arroyo Colorado that NRA helped acquire some time ago. Efforts were going to be made to get funding for another model. Topics of discussion also included the outcome of the Arroyo Colorado Conservancy (ACC) event “Save the Arroyo” Fiesta. A lot of fishermen were in attendance and attributed to the event’s success. An update on the Arroyo Colorado Watershed Protection Plan was also provided. Short term goals included adding some riprap to the stream to promote aeration. Longer term plans include possibly using effluent in water features at Ramsey and McKelvey Parks and constructing wetlands in San Benito.



San Miguel Recreational Use Attainability Analysis (RUAA)

In 2006, San Miguel Creek (Segment 2108), which flows 66 miles from Choke Canyon Reservoir in McMullen County to the confluence of Perez Creek and Chacon Creek in Frio County was identified as being impaired for having *E. coli* bacteria concentrations that exceed state water quality standards. To address the impairment, the Texas State Soil and Water Conservation Board (TSSWCB) contracted with NRA to conduct a RUAA to confirm the degree of recreation occurring there. The project kicked off in November 2013. More information, including a website which will be hosted by the Nueces River Authority will be forthcoming.

Petronila Creek Chloride, Sulfate, and Total Dissolved Solids Implementation Plan (I-Plan)

A meeting hosted by Rocky Freund from Nueces River Authority concerning the ongoing efforts to address the Chloride, Sulfate, and TDS impairment in Petronila Creek occurred on October 16th at the Johnny Calderon County Building in Robstown. Following the meeting, landowners from Willoughby Farms allowed the group to take a field trip out to the creek near their property. Travis Tidwell from the Meadows Center for Water and the Environment demonstrated water sampling techniques along the creek.



Petronila Creek (Segment 2204) is a 44-mile “freshwater” stream in Kleberg and Nueces County located southwest of Corpus Christi in the Baffin Bay watershed. In 2000, water quality testing found elevated levels of chloride, sulfate, and TDS in the creek. Elevated dissolved salt concentrations are attributed to produced water discharged in open pits and ditches which were outlawed in 1969 and 1987 respectively. NRA conducts monthly sampling for impaired parameters and maintains a continuous water quality monitoring site (CAMS 731) hosted by the TCEQ which can be viewed at:

http://www.tceq.state.tx.us/cgi-bin/compliance/monops/water_daily_summary.pl?cams=731

More information about the Petronila I-Plan can be found at:

<http://www.tceq.texas.gov/assets/public/waterquality/tmdl/32petronila/32-petronila.pdf>

Outreach and Education

NRA’s Education and Outreach Program reached out to 4,731 people from September through November 2013 using custom made tools including NRA’s watershed, rainwater, and groundwater models. That is a record number for NRA’s Outreach/Education Program which is partially funded by the CRP. Mary Bales (right) discusses the water cycle before demonstrating the watershed model. Susan Gowens (below), a teacher in Corpus Christi, borrowed NRA’s Coastal Bend Division model to discuss watersheds. For more information about outreach and education, contact slewey@nueces-ra.org.



Arundo Pull. Kill. Plant.

This quarter marked completion of *Arundo donax* treatment season with 26.69 acres of the invasive being treated with herbicide via individual plant treatment (IPT) and 181,000 sprouting nodes being removed by hand pulling. Pull.Kill.Plant., the *Arundo donax* Control and Riparian Restoration Program, is now being implemented on 85 miles of riparian area along four rivers in the Upper Nueces basin. 210 riparian landowners are participating.

Arundo populations have been reduced by 2/3s to 3/4s each year of treatment since 2010 but new colonies continue to be discovered. Continued follow-up and retreatment is important to prevent a resurgence of this highly invasive, water-centric plant. A larger, broader outreach effort is needed to raise awareness and understanding of the plant and how it spreads. Mechanical disturbance and mowing of *Arundo donax* on public and private lands continue and will continue to cause spreading into creeks and rivers until a large scale public information campaign can be funded and launched.

For more information visit <http://www.pullkillplant.org> or contact Sky Lewey at (830) 278-6810 or slewey@nueces-ra.org.



Red Tide

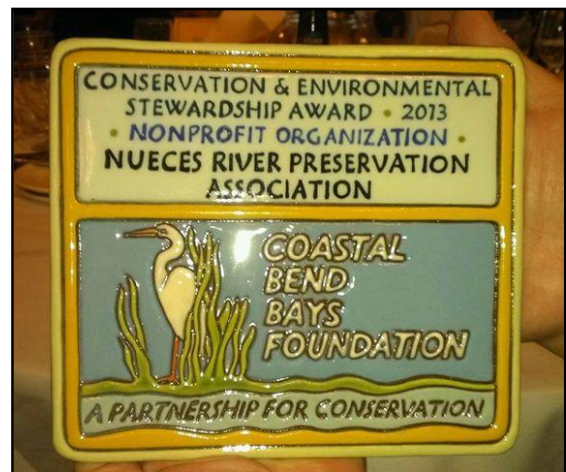
Very low concentrations of red tide (*Karenia brevis*) were detected at the Gulf beaches near Corpus Christi in early to mid September but by October, no occurrences were reported. A November status report indicated no red tide anywhere along the Texas coast. The latest red tide status updates can be found on TPWD's website:

<http://www.tpwd.state.tx.us/landwater/water/environconcerns/hab/redtide/status.phtml>.

Nueces River Watershed Partnership

Projects and activities are moving forward. Meetings are held quarterly with the next one scheduled for January 21, 2014. The Conrad Blucher Institute for Surveying and Science will give a report on the data that's been collected by their real-time automated systems (<http://www.cbi.tamucc.edu/Nueces-River-Monitoring/>).

The Nueces River Preservation Association (NRPA), residents primarily on CR 73 who play a major role in trying to keep the river clean, received the Coastal Bend Bays Foundation's 2013 Conservation and Environmental Stewardship Award in the nonprofit category. This award was very much deserved. Good job NRPA!



Nueces River Watershed Partnership - continued

On October 16, 2013, a stakeholder on Riverview Drive confronted a driver of a vacuum truck who was discharging its load on private property along the river. The authorities were called and the incident was investigated. The newspaper reported that a man that lives adjacent to the private property was paid \$20 to let the driver dump the waste, which was a mixture of raw sewage and rinse water. The driver worked for a repair shop that had been hired by the septic disposal company to work on their vehicles. Nueces County plans to prosecute the owner of the repair shop, which could result in prison time and a hefty fine.

Funding for the development and support of the Lower Nueces River Watershed Protection Plan (WPP) is through a Clean Water Act grant provided by the Texas State Soil and Water Conservation Board and U.S. Environmental Protection Agency.

For more information about the Lower Nueces River Watershed Partnership and the WPP, visit <http://www.nuecesriverpartnership.org> or contact Rocky Freund at (361) 653-2110 or rfreund@nueces-ra.org.

Sam Sugarek
Director of Water Quality Programs
Nueces River Authority
361-653-2110
ssugarek@nueces-ra.org