









# Water Quality Updates in the Neches River Basin

Anna Gitter-Texas Water Resources Institute June 17, 2021 Upper Neches Basin Clean Rivers Program Steering Committee Meeting

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## Tributaries of the Neches River below Lake Palestine (Middle Neches)







#### **A**TEXAS A&M **GRILIFE**

#### • Watershed Bacteria Impairments:

- Jack Creek (0604C)
  - Impaired AU: 0604C\_01
- Cedar Creek (0604A)
  - Impaired AU: 0604A\_02
- Hurricane Creek (0604B)
  - Impaired AU: 0604B\_01
- Biloxi Creek (0604M)
  - Impaired AU: 0604M\_03





### **Watershed Statistics**

- Tributaries of the Neches River below Lake Palestine (collectively called the Middle Neches Project)
  - Jack, Cedar, Hurricane and Biloxi Creeks
- Entirely located in Angelina County
- Cities: Lufkin and Hudson
- 92 sq. miles (59,131 acres)
- ~42,647 estimated population
- ~3,097 estimated on-site sewage facilities
- 2 TPDES/NPDES discharge permits bacteria reporting requirements

### **Indicator Bacteria Data**









Cedar Creek	291.49 cfu/100mL
Hurricane Creek	276.16 cfu/100mL
Jack Creek	185.35 cfu/100mL
Biloxi Creek	152.24 cfu/100mL

TCEQ. 2020. 2020 Texas Integrated Report of Surface Water Quality for Clean Water Act Sections 305(b) and 303(d) . URL: https://www.tceq.texas.gov/waterquality/as sessment/20twqi/20txir



### Percent Reductions

AU/ SWQM Station	Flow Regime	Median Flow (cfs)	Geometric Mean (cfu/100mL)	Existing Load (Billion cfu/Day)	Allowable Load (Billion cfu/Day)	Percent Reduction Required (%)
0604A_02/	High Flows	154.66	1,983.64	7,505.92	476.77	94
10478	Moist Conditions	33.20	325.24	264.20	102.35	61
	Mid-Range Flows	26.11	227.02	145.03	80.50	44
	Dry Conditions	23.75	163.87	95.21	73.21	23
	Low Flows	22.37	218.57	119.62	68.95	42
0604B_01/	High Flows	52.61	2,400.00	3,089.09	162. 8	95
13529	Moist Conditions	8.41	525.63	108.18	25.93	76
	Mid-Range Flows	6.10	325.32	48.58	18. <mark>3</mark> 2	61
	Dry Conditions	5.30	192.84	24.99	16. <mark>3</mark> 3	35
	Low Flows	4.81	105.74	12.45	14. <mark>3</mark> 4	NA
0604C_01/	High Flows	92.89	2,400.00	5,454.38	286 <mark>3</mark> 6	95
10492	Moist Conditions	9.22	342.63	77.31	28.43	63
	Mid-Range Flows	4.53	203.10	22.53	13.98	38
	Dry Conditions	2.94	77.67	5.59	9.07	NA
	Low Flows	2.01	52.82	2.59	6.19	NA
0604M_03/	High Flows	49.20	213.72	257.26	151.67	41
10499	Moist Conditions	3.92	438.15	42.00	12.08	71
	Mid-Range Flows	1.35	207.74	6.85	4.16	39
	Dry Conditions	0.72	188.14	3.34	2.23	33
	Low Flows	0.21	61.53	0.32	0.66	NA



## **TSD Findings**

- Take Home Message from TSD:
  - Bacteria impairments in Cedar, Hurricane, Jack and Biloxi Creeks
  - Greatest exceedances occur under high-flow, moist and mid-range flow conditions
  - Elevated loadings under high flow and moist conditions likely associated with stormwater and runoff from nonpoint sources
  - Failing OSSFs can be a potential bacteria source under any flow condition
  - High-flow related loadings likely influenced by unregulated stormwater





### **Project Status**

- TSD is available for public review: <u>https://www.tceq.texas.gov/waterquality/tmdl/nav/</u> <u>118-lufkinwatersheds-bacteria</u>
- Draft TMDL is currently being reviewed by TCEQ
- Stakeholder process has begun for I-Plan development
  - Public Stakeholder Meetings
    - November 30, 2020
    - March 25, 2021
  - Individual stakeholder meetings
  - Coordination Committee Meeting
    - June 7, 2021







### Project Support





#### Funded by TCEQ

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# Angelina River above Sam Rayburn Reservoir





- According to the 2020 Texas Integrated Report, 4 segments are impaired for not meeting primary contact recreation bacteria standard
- *E. coli* standard: geometric mean of 126 cfu/100mL and a single sample limit of 399 cfu/100mL
- Concerns for elevated total phosphorus, nitrate and ammonia

Water Body	Impaired AUs	Parameter	Data Range	AU Geometric Mean (MPN/100mL)
Angelina River above Sam Rayburn Reservoir	0611_01 0611_04	E. coli	12/01/2011- 11/30/2018	151.35 185.5
East Fork of the Angelina River	0611A_01 0611A_02	E. coli	12/01/2011- 11/30/2018	197.62 223.93
Mud Creek	0611C_01	E. coli	12/01/2011- 11/30/2018	200.88
West Mud Creek	0611D_01	E. coli	12/01/2011- 11/30/2018	378.43

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Will continue monitoring Mud and West Mud Creeks to increase our understanding of water quality in those impaired areas of the watershed until Fall 2021.

#### Monitoring Stations

- 18302
- 14477
- 10532
- 10538





## **Project Updates**

- Have been conducting supplemental monitoring along Mud and West Mud Creeks this past year
- First stakeholder meeting will be July 13<sup>th</sup> at 10am at the Smith County Extension Office in Tyler, TX
- Riparian Training scheduled for September 22<sup>nd</sup>.
- Develop watershed characterization report
  - Will include additional data analysis for Mud and West Mud Creeks







### Project Support





#### Funded by TSSWCB





#### Questions?

Contact:

Anna Gitter Research Specialist- Texas Water Resources Institute <u>anna.gitter@ag.tamu.edu</u>

Dr. Lucas Gregory, PhD Assistant Director- Texas Water Resources Institute Ifgregory@ag.tamu.edu