Clean Rivers Sampling Program for the Raw Water Enterprise

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The Texas Clean Rivers Program is a non-regulatory, voluntary program designed to provide a framework for managing Texas surface-water quality issues in a holistic manner. Funded by the State of Texas, the focus of the program is to work at the watershed level, within each river basin, by coordinating the efforts of many diverse organizations.

The San Jacinto River Authority (SJRA) participates in and contributes to the program by conducting field measurements and sampling Lake Conroe at ten strategic sites on a monthly basis. Collected water samples are delivered to and analyzed by the City of Houston Water Quality Laboratory. The program is managed regionally by the Houston Galveston Area Council (HGAC), which collects all data for the program and disseminates the information through its website at www.h-gac.com.

SJRA's sampling sites are all located throughout the main body of Lake Conroe and were chosen in order to capture water quality data from all tributaries as well as sites in the center of the lake (Figure 1). These locations allow for adequate mixing of all inflow prior to sampling. Data gathered from each sampling event is compared to Texas Commission on Environmental Quality (TCEQ) water quality standards and screening levels to determine if any exceedances have occurred. The most recent Lake Conroe water quality sampling results available can be seen in Table 1.

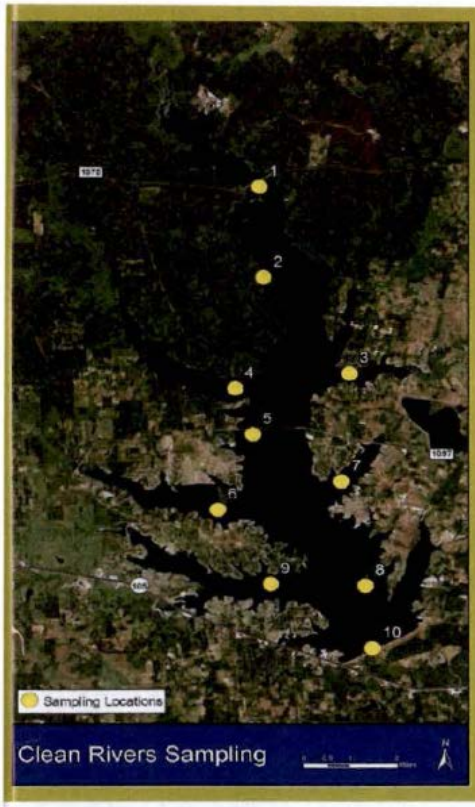
When large amounts of rainfall occur on the watershed, sheet flow over a variety of land surfaces collects many different types of pollutants, which are transported into the lake. In the Lake Conroe watershed, elevated phosphorus and E-coli levels are sometimes detected immediately following significant rainfall events. Fortunately, Lake Conroe typically returns to normal water quality levels very quickly after a storm.

SJRA, with the help of local stakeholders, developed a Watershed Protection Plan (WPP) to make sure that Lake Conroe continues to have high quality water for years to come. The WPP outlines a number of different Best Management Practices (BMP) to put into effect around the watershed. The public outreach and education BMP is viewed as crucial due to the necessity of spreading information to change behavior. The more the citizens in the watershed know about how their actions negatively or positively affect water quality, the more likely they are to change their own behavior to keep Lake Conroe in good health for future generations to come.

HGAC produces an annual online report explaining the health

Lake Conroe October 2017														
		Lab									Field			
TCEQ Standard/ Screening levels		N/A	50 mg/L	126 MPN/100 mL	0.11 mg/L	0.37 mg/L	N/A	50 mg/L	N/A	N/A	<3.0 mg/L	N/A	>32 C	N/A
Date	Site	Alk mg/L	Chloride mg/L	E. Coli MPN/ 100ml	NH3_N mg/L	NO3-N mg/L	Secchi Depth/M	Sulfate mg/L	T-PO4-P mg/L	TSS mg/L	DO	Spec/ Cond	Temp	pH
10/4/2017	1	41	8	<1	<0.1	<.04	0.70	<5	0.11	11	N/A	97.4	27.52	7.23
10/4/2017	2	41	9	<1	<0.1	<.04	0.70	<5	0.06	11	N/A	97.8	27.24	7.47
10/4/2017	3	41	9	2.0	<0.1	<.04	0.80	<5	0.04	8	N/A	99.8	26.87	7.28
10/4/2017	4	41	8	<1	<0.1	<.04	0.50	<5	0.08	6	N/A	98.8	27.34	7.56
10/4/2017	5	41	9	4.1	<0.1	<.04	1.0	<5	0.05	6	N/A	100.5	27	7.28
10/4/2017	6	41	9	4.1	<0.1	<.04	0.60	<5	0.07	9	N/A	101.9	27.27	7.51
10/4/2017	7	40	9	<1	<0.1	<.04	0.80	<5	0.09	6	N/A	100.4	27.47	7.77
10/4/2017	8	42	9	<1	<0.1	<.04	1.0	<5	0.02	6	N/A	100.6	27.35	7.71
10/4/2017	9	44	9	4.1	<0.1	<.04	0.90	<5	0.07	8	N/A	110.2	27.31	7.49
10/4/2017	10	43	9	7.5	<0.1	<.04	0.90	<5	0.06	5	N/A	105.2	26.88	7.62

Table 1



of waterways in the Houston region entitled "How's the Water? Basin Highlights Report 2017." The yearly report rates the water quality of each waterway or waterbody by assigning frogs, one frog being poor water quality and five frogs being great water quality. We are very proud to report that Lake Conroe has a "five frog" status for 2017 (Figure 2) and many years prior.

For more information on SJRA or the Clean Rivers Program visit, www.sjra.net ◆

Basin	Watershed	Segment	DO	Bact	Chlor	Nut	PCB	Other*	Frogs
Trinity-San Jacinto Coastal	Cedar Bayou Tidal	0901	100	100	100		100		🐸
	Cedar Bayou Above Tidal	0902	100						🐸🐸🐸🐸
San Jacinto River	Buffalo Bayou Above Tidal	1014	11	78.3		70.2		2.3	🐸🐸🐸
	Buffalo Bayou Tidal	1013	37.4	86.8		54.1		32.7	🐸🐸
	Caney Creek	1010	16.8	59.6					🐸🐸🐸
	Cypress Creek	1009	28.7	77.7		77.7		11.7	🐸🐸🐸
	East Fork San Jacinto River	1003		63.7					🐸🐸🐸🐸
	Greens Bayou Above Tidal	1016	12	95.9		85.6	-		🐸🐸🐸🐸
	Houston Ship Channel	1006	16	47.4	6.5	87.7	36.3	36.3	🐸🐸
	Houston Ship Channel Buffalo Bayou Tidal	1007	19	67.7		84.9	28.6	28.6	🐸🐸
	Houston Ship Channel/ San Jacinto River Tidal	1005				82.2	100	82.2	🐸🐸
	Lake Conroe	1012	11						🐸🐸🐸🐸🐸
	Lake Creek	1015	70.8	12.1				30.7	🐸🐸🐸
	Lake Houston	1002	20.9	7	15	43.9		0.1	🐸🐸🐸🐸
	Peach Creek	1011		100					🐸🐸🐸
	San Jacinto River Tidal	1001					36.5	36.5	🐸🐸🐸
	Spring Creek	1008	47.8	72.9	1.2	23.6		8.9	🐸🐸🐸
	West Fork San Jacinto River	1004		57.7		25.8			🐸🐸🐸🐸
	White Oak Bayou Above Tidal	1017	11.7	87		83.2			🐸🐸

Figure 2