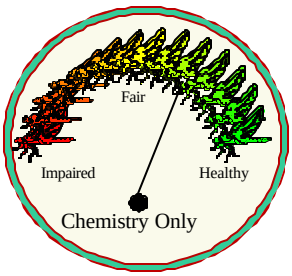


EcoSummary

Troy Spring

04/09/02



Background

Florida DEP's Division of Recreation and Parks selected Troy Spring, as well as several other springs from state parks, for biological and water quality monitoring. Data from these efforts will be used for documenting conditions within each park and for making resource protection decisions. Troy Spring, located in Lafayette County; flows into the west side of the Suwannee River (see Figure 1). The surrounding property was purchased by the state of Florida in 2001, and construction, with the addition of boardwalks, facilities, trails and camping grounds, is currently underway to convert Troy Springs into a state park. Water quality characteristics were collected near the spring vent.

Samples were taken at Troy Spring in April 2002. Water chemistry samples were taken for ammonia, nitrate-nitrite, total Kjeldahl nitrogen, total phosphorus, color, turbidity, *Enterococci*, *Escherichia coli*, fecal coliform, and total coliform analysis; see Figure 2. Qualitative periphyton sampling was also conducted.

Results

Similar to results in October 2001, the elevated nitrate-nitrite concentration (1.2 mg/L) at the sampling site continues to be higher than those found in 95% of Florida streams; see Figure 2. Ammonia and total Kjeldahl nitrogen were below respective quantitation limits (see figure 2). Total phosphorus (0.055 mg/L) remained lower than 75% of state streams. *Enterococci* and *E. coli* concentrations complied with the EPA single-sample guideline value of 61 CFU/100mL and 235 CFU/100mL, respectively, for "designed beach areas". Fecal and total coliform levels complied with Class III water quality standard values. Dissolved oxygen (1.3mg/L) was less than the Class III water quality standard (5.0 mg/L), but this was likely due to sampling near the spring vent, where conditions would be representative of typical (low dissolved oxygen) groundwater levels. The periphyton community in Troy Spring was dominated by diatoms with some blue-green taxa. The particular taxa found were indicative of eutrophic conditions.

In conclusion, elevated nitrate-nitrite levels in Troy Spring continue to exist, along with a relatively low-quality algal community. Continued monitoring is recommended, especially during and after the park construction is complete, in order to assess any potential adverse effects the construction may cause.

Figure 1: Overview Map of the Troy Spring Area

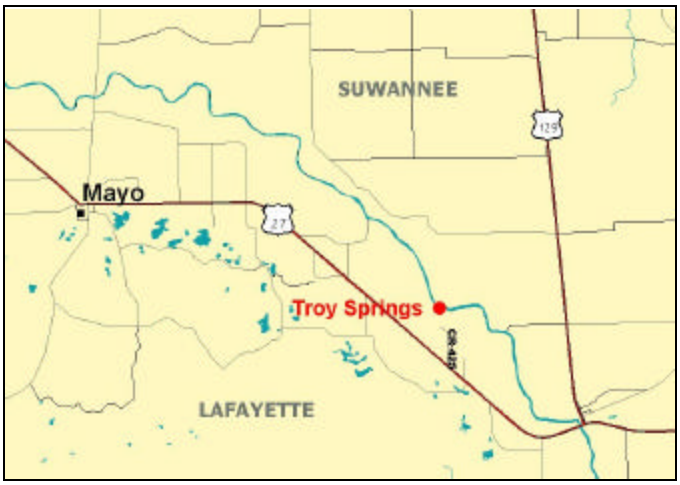


Figure 2: Data Table

Troy Springs			
STORET Sampling Date		SPRINGS010 4/9/2002	
Macroinvertibrate Parameters		**Periphyton Parameters**	
SCI	-	% Bacillariophyceae	75.67
SCI Evaluation	-	% Cyanophyceae	19.85
Number of Taxa	-	% Chlorophyceae	4.48
EPT Index	-	Dominant taxon	*Fragilariaceae*
FL Index	-	Percent Dominant taxon	32.39
% Dominant Taxon	-	**Physical-Chemical Data**	
% Diptera	-	Habitat Assessment	-
Total number of Chironomidae	-	Specific Conductivity (umhos/cm)	336
% Filter-Feeders	-	Dissolved Oxygen (mg/L)	1.3
Chemistry Data		pH (SU)	7.2
Ammonia (mg/L)	0.01 U	Temperature (deg C)	21.4
Nitrate-Nitrite (mg/L)	1.2	**Bacteria Parameters**	
TKN (mg/L)	0.14 I	*Enterococci* (col/100mL)	2
Total Phosphorus (mg/L)	0.055	*Escherichia coli* (col/100mL)	2
Color (PCU)	5 U	Fecal Coliforms (col/100 mL)	1 K
Turbidity	0.5 A	Total Coliforms (col/100mL)	16

"U"- Value Reported is the Minimum Detected; "K"- Actual Value is Known to be Less Than the Value Given; "I"- Value Reported is Less Than the Minimum Quantitation Limit and Greater Than or Equal to the Minimum Detection Limit; "A"- Value Reported is the Mean of Two or More Determinations

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