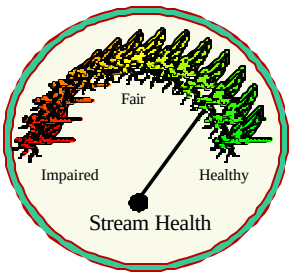


EcoSummary

De Leon Springs
10/17/00



Background

Florida DEP's Division of Recreation and Parks selected De Leon Springs, as well as springs from seven other 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. De Leon Springs State Park is located in Volusia County, Florida; see Figure 1. De Leon Springs is a Floridan Aquifer-dominated system and is used mainly as a bathing area. De Leon Springs flows directly into Spring Garden Lake and water quality sampling was conducted at the outflow.

Baseline samples were taken at all eight park locations in October 2000. Qualitative periphyton sampling and 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. Habitat assessment and benthic invertebrate stream condition index (SCI) sampling was not conducted at this park because of the lake-like conditions.

Results

Nitrate-nitrite concentrations (0.68 mg/L) at the sampling site were slightly higher than the values found in 90% of Florida streams (see Table 2). Elevated nitrate-nitrite levels in De Leon Springs River are related to nitrogen loading in the recharge basin (mostly inorganic fertilizers). The ammonia concentration was below quantitation limit. Total Kjeldahl nitrogen (0.38 mg/L) concentration was below 90% of other streams in the state. Total phosphorus (0.062 g/L) concentration was relatively average for a Florida stream (see figure 2). *Enterococci* and *Escherichia coli* densities were below the EPA guidelines for a designated beach area. Fecal and total coliform levels complied with Class III water quality standards. The periphyton community in De Leon Springs was dominated by diatoms with some blue-green taxa. The particular taxa found were indicative of eutrophic conditions, which was not surprising given the nutrient enrichment in De Leon Springs. In conclusion, nitrate-nitrite nutrient enrichment levels in De Leon Springs appeared to be the main stressor associated with a relatively low quality of algal community.

Figure 1: Map of De Leon Springs Area

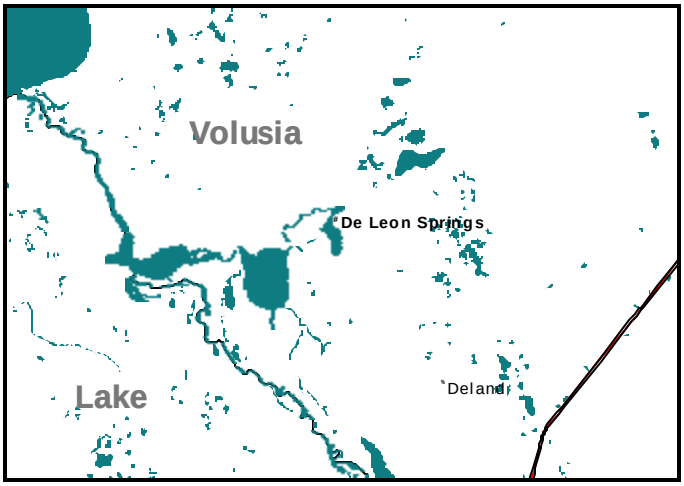


Figure 2: Data Table

DE LEON SPRINGS			
Station		De Leon Springs	
Station Nick Name		DELEON	
STORET		SPRINGS007	
Sampling Date		10/17/00	
Periphyton Parameters		**Physical-Chemical Data**	
Number of Taxa	28	Sample Depth (m)	0.1
% Bacillariophyceae	92.24	Conductivity (umho/cm)	800
% Chlorophyceae	1.08	Dissolved Oxygen (mg/L)	8.4
% Cyanophyceae	6.5	pH (SU)	8.1
% Dinophyceae	0.18	Temperature (deg. C)	23
% Dominant Taxon	20.4	**Chemistry Data**	
Bacteria Parameters		Ammonia (mg/L)	0.016 I
Enterococci (col/100 mL)	1 O	Nitrate-Nitrite (mg/L)	0.68
Escherichia coli (col/100 mL)	8 Q	TKN (mg/L)	0.38
Fecal Coliforms (col/100 mL)	10 Q	Total Phosphorus (mg/L)	0.062
Total Coliforms (col/100 mL)	20 Q	Color (PCU)	15
		Turbidity (NTU)	0.9

"U"- Below Detection Limit; "I"- Below Quantitation Limit; "Q"- Information Only

FOR MORE INFORMATION, CONTACT:
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