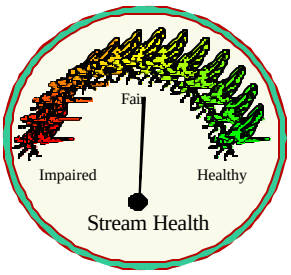


EcoSummary

De Leon Springs
10/16/01 and 12/6/01



Background

Florida DEP's Division of Recreation and Parks selected DeLeon Springs 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 (Figure 1). DeLeon Springs flows into Spring Garden Lake. DeLeon Springs is a Floridan Aquifer-dominated system and is known for its recreational and aesthetic qualities.

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

Nitrate-nitrite concentrations (1.1 mg/L) at the sampling site were higher than the values found in 95% of Florida streams (Figure 2). Elevated nitrite-nitrate in DeLeon Springs is related to nitrogen loading in the recharge basin. Ammonia, and total Kjeldal nitrogen concentrations (0.042 mg/L, and 0.32 mg/L respectively) were relatively average for Florida streams.

Enterococci and *Escherichia coli* densities complied with the EPA single-sample guideline values of 61 CFU/100mL and 235 CFU/100 mL, respectively, for "designated beach areas." 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, elevated nitrate-nitrate levels in De Leon Springs appeared to be the main stressor associated with a relatively low quality an algal community.

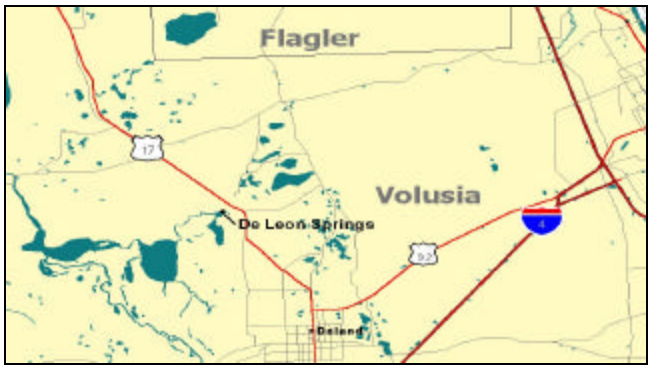


Figure 2: Data Table

de Leon			
Sampling Date		10/16/01 &12/6/01	
Chemistry Data		Periphyton Parameters	
Ammonia (mg/L)	0.042	% Bacillariophyceae	85.76
Nitrate-Nitrite (mg/L)	1.1	% Cyanophyceae	11.22
TKN (mg/L)	0.32	% Chlorophyceae	3.02
Total Phosphorus (mg/L)	0.077 J	Dominant taxon	Fragilariaceae
Color (PCU)	5 U	Percent Dominant taxon	29.31
Turbidity (NTU)	0.3	Physical-Chemical Data	
Bacteria Parameters		Habitat Assessment	
Enterococci (col/100mL)	62 AO	Specific Conductivity (umhos/cm)	894
Escherichia coli (col/100mL)	2 AO	Dissolved Oxygen (mg/L)	5.1
Fecal Coliforms (col/100 mL)	3 AQ	pH (SU)	7.53
Total Coliforms (col/100mL)	14 AO	Temperature (deg C)	22.6

"A"- Average; "J"- Estimated Value; "Q"- Information Only

Figure 3. Nitrate-Nitrite Evaluation

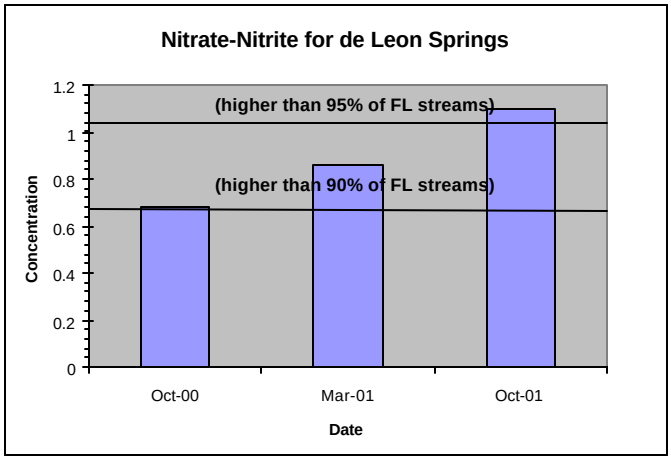


Figure 1: Overview Map of the Rainbow Springs Area

FOR MORE INFORMATION, CONTACT:
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