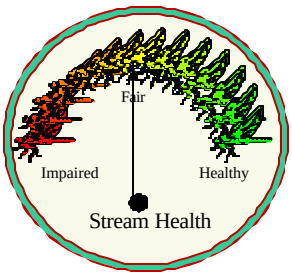


EcoSummary

Ponce de Leon Spring
10/04/01



Background

Florida DEP's Division of Recreation and Parks selected Ponce de Leon Springs, 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. Ponce de Leon Springs State Recreation Area is located in Holmes County, Florida (Figure 1). Ponce de Leon Springs flows into Sandy Creek, which in turn flows south into the Choctawhatchee River. Ponce de Leon Springs is a Floridan Aquifer-dominated system and is known for its recreational and aesthetic qualities.

Samples were taken at Ponce de Leon Springs in October 2001. 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 (Figure 2). Habitat assessment, qualitative periphyton sampling, and benthic invertebrate stream condition index (SCI) sampling were also conducted.

Results

Nitrate-nitrite concentrations (0.24 mg/L) at the sampling site were higher than the values found in 70% of Florida streams (Figure 2). Ammonia, total Kjeldahl nitrogen, and total phosphorus concentrations were below quantitation limits. The overall habitat assessment score (125) was in the optimal range (>120), with substrate availability and habitat smothering receiving somewhat reduced scores. *Enterococci* and *Escherichia coli* concentrations complied with the EPA single-sample guideline value 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 stream condition index (SCI) score of 19 placed Ponce de Leon Springs in the "poor" range. The reason for this low SCI score is currently unexplained, and future sampling will attempt to determine potential causes. The periphyton community in Ponce de Leon Springs was dominated by diatoms with some blue-green taxa (Figure 2). Based on species level data, the algal community present was indicative of nutrient enriched conditions.

In conclusion, the SCI score for Ponce de Leon has dropped into the "poor" category since the last evaluation in October 2000. Future sampling will attempt to determine potential causes for this decline. The habitat assessment of the site remains in fairly good condition, although the algal community is indicative of somewhat eutrophic conditions.

Figure 1: Overview Map of the Ponce de Leon Springs Area

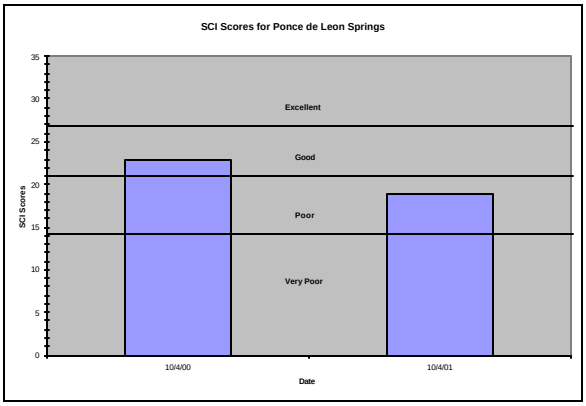


Figure 2: Data Table

Ponce de Leon Springs			
Station		Ponce de Leon Springs	
Sampling Date		10/4/01	
Macroinvertibrate Parameters		**Periphyton Parameters**	
SCI	19	% Bacillariophyceae	92.18
SCI Evaluation	Poor	% Cyanophyceae	6.4
Number of Taxa	27	% Chlorophyceae	1.18
EPT Index	2	Dominant taxon	*Navicula cryptocephala*
FL Index	9	Percent Dominant taxon	23.7
% Dominant Taxon	22.61	**Physical-Chemical Data**	
% Diptera	34.78	Habitat Assessment	125
Total number of Chironomidae	10	Specific Conductivity (umhos/cm)	192
% Filter-Feeders	3.91	Dissolved Oxygen (mg/L)	6.7
Chemistry Data		pH (SU)	7.59
Ammonia (mg/L)	0.01 U	Temperature (deg C)	20
Nitrate-Nitrite (mg/L)	0.24 A	**Bacteria Parameters**	
TKN (mg/L)	0.06 U	*Enterococci* (col/100mL)	2 Q
Total Phosphorus (mg/L)	0.021 I	*Escherichia coli* (col/100mL)	8 Q
Color (PCU)	5 U	Fecal Coliforms (col/100 mL)	12 Q
Turbidity	0.25	Total Coliforms (col/100mL)	70 Q

"U"- Value Reported is the Minimum Detection Limit; "I"-Value Reported is Less Than the Minimum Detection Limit, and Greater Than or Equal to the Minimum; "Q"- Sample Held Beyond Normal Holding Time; "A"- Value Reported is the Mean of Two or More Determinations

Figure 3: SCI Scores Graph



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