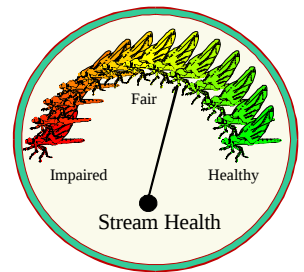


EcoSummary

Ponce de Leon Springs

10/04/00



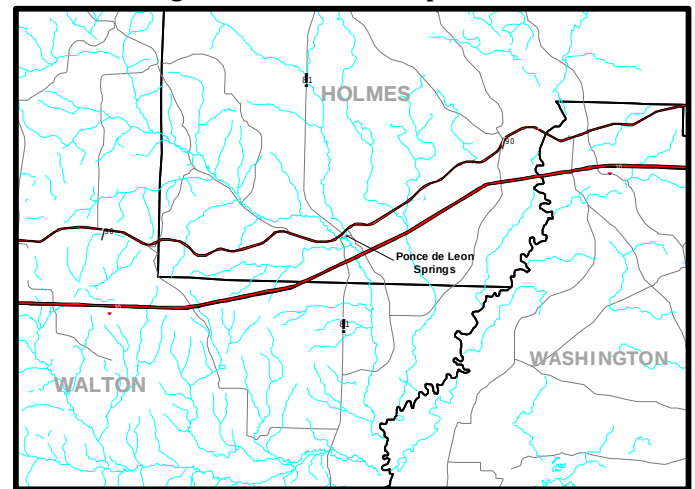
Background

Florida DEP's Division of Recreation and Parks selected Ponce 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. Ponce de Leon Springs State Recreational Area is located in Holmes County, Florida; see Figure 1. The spring forms a 200m spring run before its confluence with Sandy Creek, which discharges into the Choctawhatchee River. Ponce de Leon Springs is a Floridan Aquifer-dominated system and is used mainly for recreation.

Baseline samples were taken at all eight park locations in October 2000. 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, qualitative periphyton sampling, and benthic invertebrate stream condition index (SCI) sampling were conducted.

elevated nitrate-nitrite levels in Ponce de Leon Springs appeared to be the main stressor associated with a relatively low quality of algal community.

Figure 1: Overview Map of Area



Results

Nitrate-nitrite concentrations (0.23 mg/L) at the sampling site were higher than those found in 70% of Florida streams (0.2 mg/L); see Figure 2. Elevated nitrite-nitrate levels in Ponce de Leon Springs are related to nitrogen loading in the recharge basin (mostly inorganic fertilizers applied to pasture and crops). Ammonia, total Kjeldahl nitrogen, and total phosphorus concentration were below quantitation limit (see figure 2). The overall habitat assessment score (132) was in the optimal range (>120). Habitat availability was marginal due to moderate amounts of sand & periphyton smothering. *Enterococci* and *Escherichia coli* levels were below the EPA single-sampling guideline values for "designated beach areas." Fecal and total coliform levels were below the Class III water body threshold values. The stream condition index (SCI) score of 23 for Ponce de Leon Springs was in the "good" range and the periphyton community was dominated by diatoms with some blue-green taxa. The particular taxa found were indicative of eutrophic conditions with few exceptions, which was not surprising given the nutrient enrichment in the springs. In conclusion,

Figure 2: Data Table

PONCE DE LEON SPRINGS			
Station	Ponce de Leon Springs		
Station Nick Name	PONCELEON		
STORET	SPRINGS001		
Sampling Date	10/4/00		
Macroinvertebrate Parameters		Periphyton Parameters	
SCI	23	Number of Taxa	27
SCI Evaluation	good	% Bacillariophyceae	95.83
SCI Region	panhandle	% Chlorophyceae	0.95
Number of Taxa	28	% Cyanophyceae	3.23
Number of Ephemeroptera	1	% Dinophyceae	0
Number of Plecoptera	0	% Dominant Taxon	18.6
Number of Trichoptera	2	Physical-Chemical Data	
EPT Index	3	Habitat Assessment	132
% Dominant Taxon	54.79	Sample Depth (m)	0.1
Florida Index	14	Specific Conductivity (umho/cm)	189
% Diptera	65.75	Dissolved Oxygen (mg/L)	7
Number of Chironomidae	1	pH (SU)	7.1
Number of Orthocladinae	10	Temperature (deg. C)	20.2
Total Number of Chironomidae	11	Chemistry Data	
% Filter-Feeders	5.48	Ammonia (mg/L)	0.01 U
Bacteria Parameters		Nitrate-Nitrite (mg/L)	0.23
<i>Enterococci</i> (col/100 mL)	30 Q	TKN (mg/L)	0.06 U
<i>Escherichia coli</i> (col/100 mL)	10 Q	Total Phosphorus (mg/L)	0.027 I
Fecal Coliforms (col/100 mL)	1 Q	Color (PCU)	5
Total Coliforms (col/100 mL)	90 Q	Turbidity (NTU)	0.1

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



FOR MORE INFORMATION, CONTACT:

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