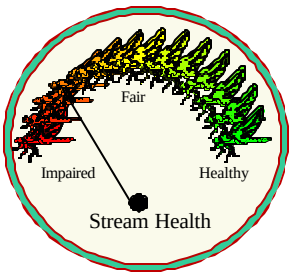


EcoSummary

Ponce de Leon Springs

10/8/02



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 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 (Figure 2). Habitat assessment, qualitative periphyton sampling, and benthic invertebrate stream condition index (SCI) sampling were also conducted.

Results

The nitrate-nitrite concentration (0.23 mg/L) at the sampling site was similar to previous sampling events, and continues to remain elevated (Figure 2). Ammonia, and total Kjeldahl nitrogen concentrations were below minimum detection limits (Figure 2). Total phosphorus concentration (0.044 mg/L) was lower than the values found in 80% of other Florida streams. *Enterococci* and *E. coli* concentrations again complied with the EPA single-sample guideline values, 61 CFU/100mL and 235 CFU/100mL, respectively, for "designated beach areas". Fecal and total coliform levels also complied with Class III water quality standards. The overall habitat assessment score (127) was in the optimal range (>120). However, the stream condition index (SCI) score of 19 placed Ponce de Leon Springs in the top of the "poor" range for this sampling event, which is higher than the last SCI score of 13 ("very poor"). The continued low SCI score is still unexplained, and regular monitoring will attempt to determine potential causes. Diatoms continue to dominate the periphyton community in Ponce de Leon Springs. The particular taxa found were indicative of eutrophic conditions.

In conclusion, although still listed as "poor", the SCI score for Ponce de Leon has improved since the last evaluation in May 2002. Future sampling will attempt to determine potential causes for the "poor" scores. Meanwhile, the habitat assessment of the site remains in good condition, which may imply the low SCI score might be attributed to a non-evaluated water quality parameter or some other undetermined factor.

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

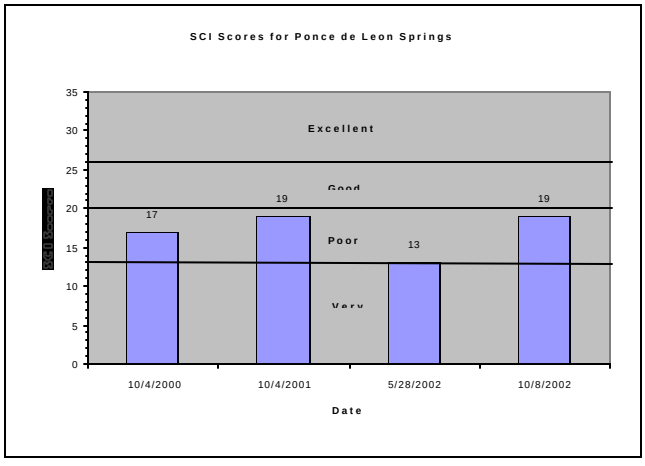


Figure 2: Data Table

Ponce de Leon Springs			
Sampling Date		10/8/2002	
Macroinvertibrate Parameters		Periphyton Parameters	
SCI	19	% Bacillariophyceae	91.58
SCI Evaluation	Poor	% Cyanophyceae	6.45
Number of Taxa	94	% Chlorophyceae	1.97
EPT Index	1	Dominant taxon	*Diatomaceae/Fragilariaceae*
FL Index	10	Percent Dominant taxon	36.74
% Dominant Taxon	40.43	Physical-Chemical Data	
% Diptera	28.72	Habitat Assessment	127
Total number of Chironomidae	10	Specific Conductivity (umhos/cm)	216
% Filter-Feeders	0	Dissolved Oxygen (mg/L)	5.55
Chemistry Data		pH (SU)	7.7
Ammonia (mg/L)	0.01 U	Temperature (deg C)	20.11
Nitrate-Nitrite (mg/L)	0.23	Bacteria Parameters	
TKN (mg/L)	0.06 U	*Enterococci* (col/100mL)	4 Q
Total Phosphorus (mg/L)	0.044	*Escherichia coli* (col/100mL)	2 Q
Color (PCU)	5 U	Fecal Coliforms (col/100 mL)	8 Q
Turbidity (NTU)	0.1	Total Coliforms (col/100mL)	50 Q

"U"- Minimum Detection Limit; "Q"- Held Beyond Normal Holding Time; "A"- Mean of Two or More Determinations

Figure 3: SCI Scores Graph



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