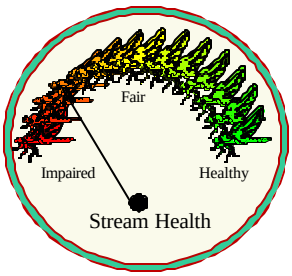


EcoSummary

Ponce de Leon Springs

5/14/2003



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 May, 2003. 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 (0.25 mg/L) at the sampling site was similar to previous sampling events and continues to remain somewhat elevated above background levels (Figure 2). Ammonia, and total Kjeldahl nitrogen concentrations were below minimum detection limits (Figure 2). Total phosphorus concentration (0.048 mg/L) was lower than what is found in 80% of Florida streams. *Enterococci* and *E. coli* concentrations again complied with the EPA single-sample guideline values, 61 CFU/100 mL and 235 CFU/100 mL, respectively, for "designated beach areas". Fecal and total coliform levels also complied with Class III water quality standards. The overall habitat assessment score (135) was in the optimal range (>120). However, the stream condition index (SCI) score of 17 placed Ponce de Leon Springs in the "Poor" range for this sampling event, which is marginally higher than the last SCI score of 13. 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, the SCI score for Ponce de Leon has remained in the "Poor" category since the last evaluation in October 2002. The SCI evaluations will continue, and 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 in correlation with some other undetermined factor.

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

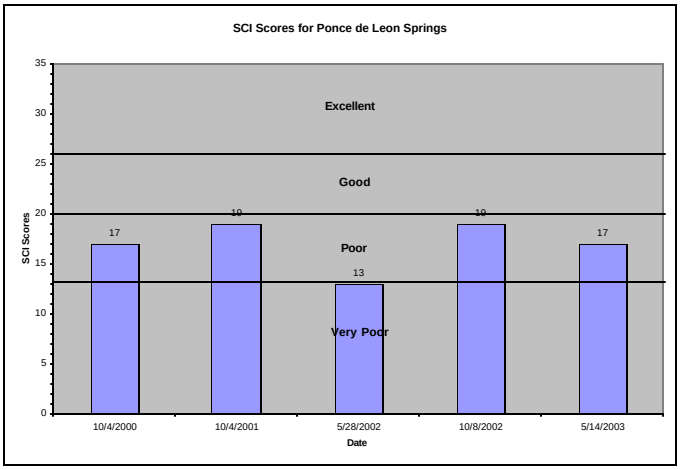


Figure 2: Data Table

Ponce de Leon Springs	
Sampling Date	5/14/2003
Macroinvertibrate Parameters	
SCI	17
SCI Evaluation	Poor
Number of Taxa	22
EPT Index	2
FL Index	6
% Dominant Taxon	46.5
% Diptera	20.8
Total number of Chironomidae	5
% Filter-Feeders	8.4
Chemistry Data	
Ammonia (mg/L)	0.011 I
Nitrate-Nitrite (mg/L)	0.25
TKN (mg/L)	0.12 U
Total Phosphorus (mg/L)	0.048
Color (PCU)	5 U
Turbidity	0.75
Periphyton Parameters	
% Bacillariophyceae	95.3
% Cyanophyceae	3.0
% Chlorophyceae	1.7
Dominant taxon	Fragilariaceae
Percent Dominant taxon	32.8
Physical-Chemical Data	
Habitat Assessment	135
Specific Conductivity (umhos/cm)	214
Dissolved Oxygen (mg/L)	6.4
pH (SU)	7.6
Temperature (deg C)	20.5
Bacteria Parameters	
Enterococci (col/100mL)	2 O
Escherichia coli (col/100mL)	22 Q
Fecal Coliforms (col/100 mL)	2 Q
Total Coliforms (col/100mL)	30 Q

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

Figure 3: SCI Scores Graph



FOR MORE INFORMATION, CONTACT:
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