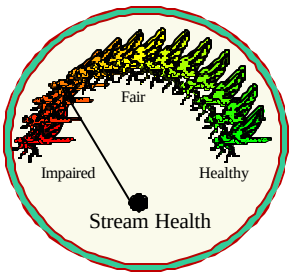


EcoSummary

Ponce de Leon Springs

05/28/02



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 May 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, total Kjeldahl nitrogen, and total phosphorus concentration were below quantitation limits (Figure 2). *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 (140) was in the optimal range (>120) and scored slightly higher than the 125 score from October 2001. However, the stream condition index (SCI) score of 13 placed Ponce de Leon Springs in the "Very Poor" range for this sampling event, which is marginally lower than the past two SCI scores of 19 and 17, from October 2001 and October 2000, respectively. 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 dropped into the "Very Poor" category since the last evaluation in October 2001. The SCI evaluations will remain closely monitored, and future sampling will attempt to determine potential causes for this decline. 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

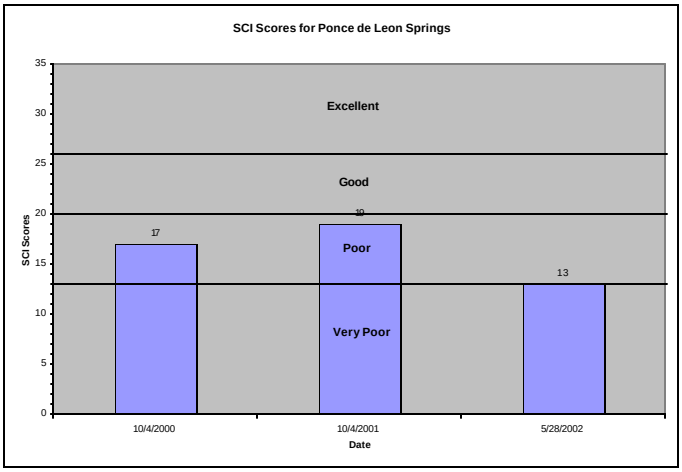


Figure 2: Data Table

Ponce de Leon Springs			
STORET		SPRINGS001	
Sampling Date		5/28/2002	
Macroinvertibrate Parameters		**Periphyton Parameters**	
SCI	13	% Bacillariophyceae	92.9
SCI Evaluation	Very Poor	% Cyanophyceae	5.72
Number of Taxa	15	% Chlorophyceae	1.38
EPT Index	1	Dominant taxon	*Cocconeis placentula*
FL Index	5	Percent Dominant taxon	23.87
% Dominant Taxon	52.34	**Physical-Chemical Data**	
% Diptera	8.41	Habitat Assessment	140
Total number of Chironomidae	3	Specific Conductivity (umhos/cm)	214
% Filter-Feeders	6.07	Dissolved Oxygen (mg/L)	6.4
Chemistry Data		pH (SU)	7.6
Ammonia (mg/L)	0.01 U	Temperature (deg C)	20.5
Nitrate-Nitrite (mg/L)	0.23	**Bacteria Parameters**	
TKN (mg/L)	0.06 U	*Enterococci* (col/100mL)	34 O
Total Phosphorus (mg/L)	0.025 A	*Escherichia coli* (col/100mL)	12 Q
Color (PCU)	5 U	Fecal Coliforms (col/100 mL)	6 Q
Turbidity	0.4	Total Coliforms (col/100mL)	150 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:
Shannon Gerardi, FDEP Environmental Assessment Section
2600 Blair Stone Road MS#6511 Tallahassee, FL 32399-2400 (850) 245-8071 Shannon.Gerardi@dep.state.fl.us