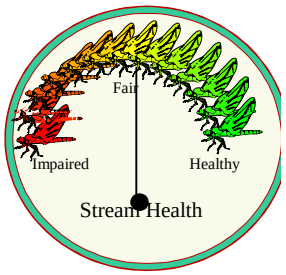


EcoSummary

Ponce de Leon Springs

4/13/2004



Background

Florida DEP's Division of Recreation and Parks selected Ponce de Leon Springs for biological and water quality monitoring. Data from these efforts will be used for documenting conditions within the 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 on April 13, 2004. Water was sampled 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 (Figure 2). Ammonia, and total Kjeldahl nitrogen concentrations were below minimum detection limits (Figure 2). The total phosphorus concentration (0.046 mg/L) was non-problematic. *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 (129) was in the optimal range. However, the stream condition index (SCI) score of 19 placed Ponce de Leon Springs in the "Poor" range for this sampling event, which is lower than the last SCI score of 23. The fluctuating 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.

In conclusion, the SCI score for Ponce de Leon has decreased into the "Poor" category since the last evaluation in October, 2003. Meanwhile, the habitat assessment of the site remains in optimal condition. Somewhat elevated nitrate-nitrite levels in De Leon Springs continue to be a stressor potentially associated with a relatively low quality an algal community.

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

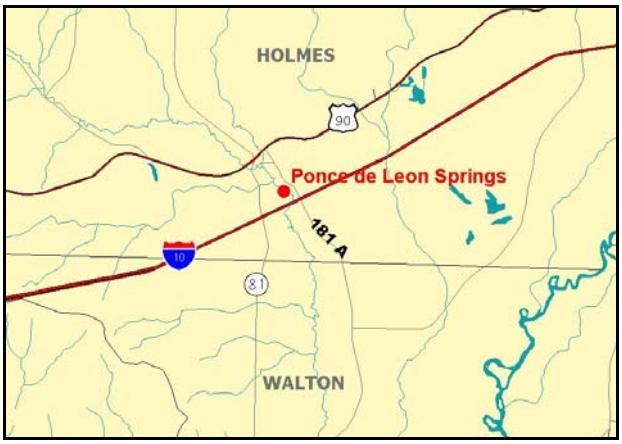
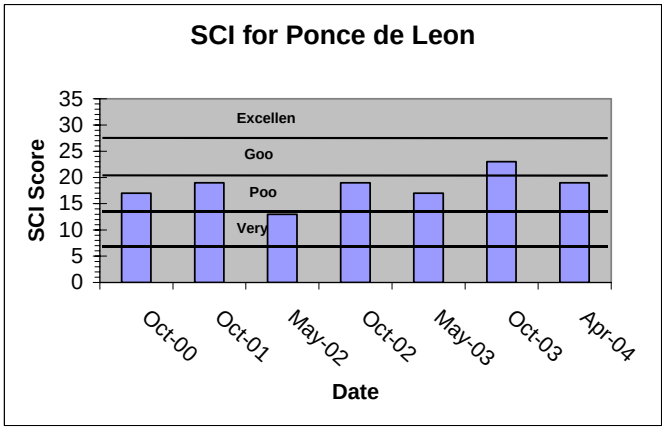


Figure 2: Data Table

Ponce de Leon Springs			
Sampling Date		4/13/2004	
Macroinvertibrate Parameters		**Periphyton Parameters**	
SCI	19		
SCI Evaluation	poor	% Bacillariophyceae	95.8
Number of Taxa	24	% Cyanophyceae	3.9
EPT Index	3	% Chlorophyceae	0.3
FL Index	6	Percent Dominant taxon	20.97
% Dominant Taxon	22.6	**Physical-Chemical Data**	
% Diptera	46.2	Habitat Assessment	129
Total number of Chironomidae	6	Specific Conductivity (umhos/cm)	207
% Filter-Feeders	21.2	Dissolved Oxygen (mg/L)	5.5
Chemistry Data		pH (SU)	7.1
Ammonia (mg/L)	0.01 U	Temperature (deg C)	19.8
Nitrate-Nitrite (mg/L)	0.25	**Bacteria Parameters**	
TKN (mg/L)	0.06 U	*Enterococci* (col/100mL)	30 BQ
Total Phosphorus (mg/L)	0.046 I	*Escherichia coli* (col/100mL)	12 BQ
Color (PCU)	5 U	Fecal Coliforms (col/100 mL)	7 BQ
Turbidity	0.2	Total Coliforms (col/100mL)	42 BQ

"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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