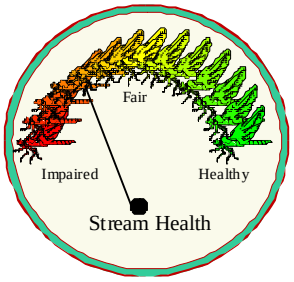


EcoSummary

Ponce de Leon Springs

5/10/2007

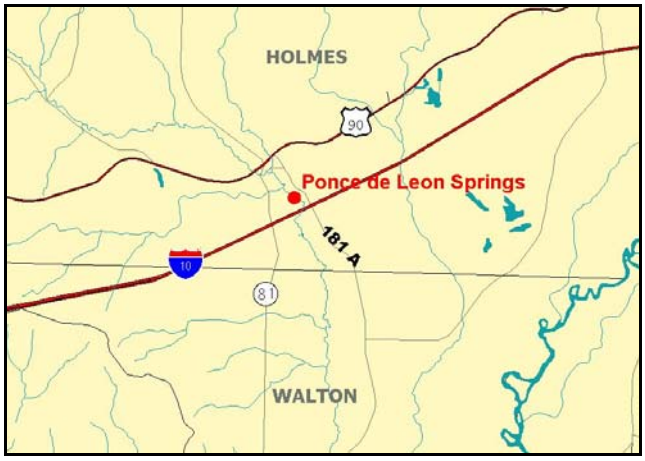


Background

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 on May 10, 2007. 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. Habitat assessment, qualitative periphyton sampling, and benthic invertebrate Stream Condition Index (SCI) sampling were also conducted.

Figure 1: Map of the Ponce de Leon Springs Area



Results

The nitrate-nitrite concentration (0.25 mg/L) continues to remain slightly elevated above background levels, but lower than the concentrations found in most Florida springs. Ammonia and total Kjeldahl nitrogen concentrations were below the Method Detection Limits. The total phosphorus concentration (0.02 mg/L) was below the Practical Quantitation Limit.

Enterococci and *Escherichia coli* concentrations complied with the EPA single-sample guideline values of 61 CFU/100 mL and 235 CFU/100 mL, respectively, for "designated beach areas." Fecal and total coliform levels complied with Class III water quality standards.

The thresholds for interpreting the Stream Condition Index values have recently been revised according to the EPA Biological Condition Gradient (BCG) conceptual model. In addition, two separate groups of 150 individuals are now analyzed, and the two resulting SCI scores are averaged. The SCI 2007 produces a more robust evaluation since the decision thresholds are based on the BCG, and the examination of two separate aliquots reduces error. Note that the sampling method and the ten metrics used for calculating the score remain exactly the same. The SCI 2007 went into effect August 1, 2006.

The Habitat Assessment score (130) was in the "optimal" range. The current SCI score of 32 dropped Ponce de Leon Springs from its prior "healthy" designation in October 2006, to "Impaired" (below 34) for this sampling event. This is unexplained, since the habitat and water quality conditions appeared unchanged. Figure 3 shows macroinvertebrate taxa richness over time.

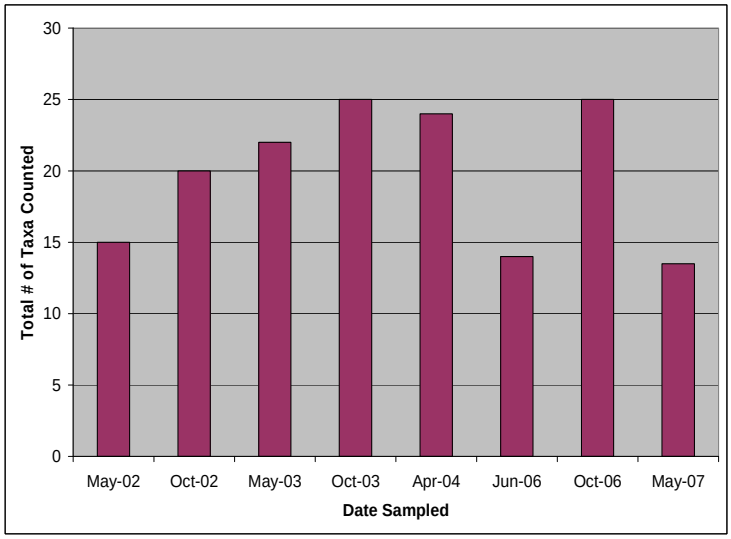
In conclusion, the recent SCI score for Ponce de Leon Springs is an issue of concern, however habitat and water chemistry measurements remain in good condition.

Figure 2: Data Table

Ponce de Leon Springs			
Sampling Date	5/10/2007	**Field Data**	
Macroinvertebrate Data		Habitat Assessment Score	130
SCI Score	32 A	Temperature (deg. C)	20.25
SCI Evaluation	Impaired	pH	7.81
Chemistry Data		Dissolved Oxygen (mg/L)	6.0
Turbidity (NTU)	0.25	Specific Conductance (umhos/cm)	217
Color (PCU)	5 U	**Bacteria Data**	
Ammonia (mg/L)	0.050 U	*Escherichia coli* (col/100 mL)	6 Q
Nitrate-Nitrite (mg/L)	0.25	*Enterococci* (col/100 mL)	14 BQ
TKN (mg/L)	0.08 U	Fecal Coliforms (col/100 mL)	2 UQ
Total Phosphorus (mg/L)	0.021 I	Total Coliforms (col/100 mL)	44 Q

"U"= Below Method Detection Limit; "I"= Below Practical Quantitation Limit; "B"= Based on colony counts outside the acceptable range; "Q" = Outside of holding time; "A"= Value reported is an average of two or more determinations

Figure 3: Total Macroinvertebrate Taxa Over Time



FOR MORE INFORMATION, CONTACT:
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