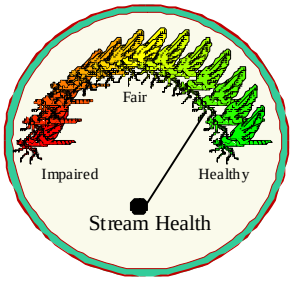


EcoSummary

Ponce de Leon Springs

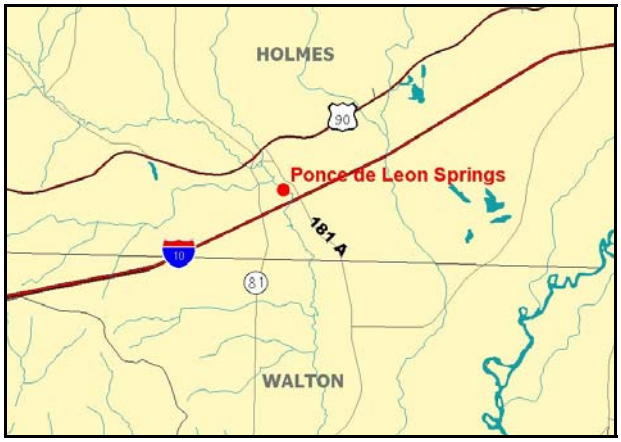
10/26/2007



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 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. 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 (0.24 mg/L) continues to remain slightly elevated above background levels but lower than the levels found in most Florida springs. Ammonia and total Kjeldahl nitrogen concentrations were below the Method Detection Limits. The total phosphorus concentration (0.022 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, the laboratory methodology used to evaluate the macroinvertebrate samples taken for the SCI was also revised to reduce uncertainty associated with SCI results. In the SCI 2004 method, a single group of 100 individuals was sub-sampled, identified, and scored, while in the new SCI 2007 method, two separate groups of 150 individuals are 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. In Figure 3, the new thresholds have been retroactively applied to the scores acquired before this date.

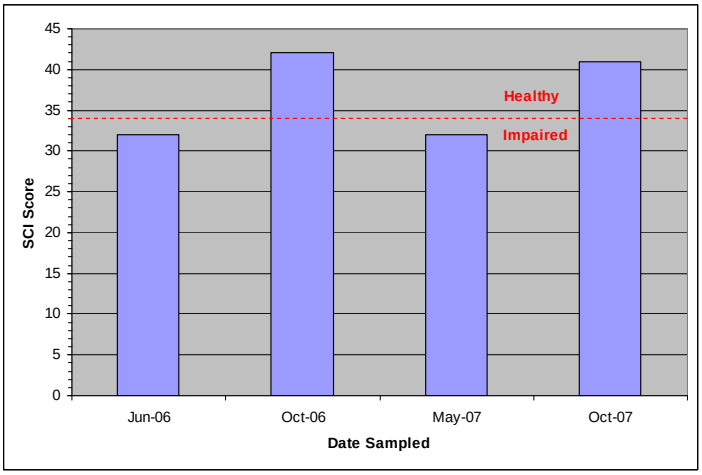
The Habitat Assessment score (127) was in the "optimal" range. The SCI score of 41 placed Ponce de Leon Springs in the "healthy" (above 34) for this sampling event. There is no explanation for the fluctuating SCI scores (above and below the impairment threshold), as habitat and water quality appear to remain unchanged. In conclusion, Ponce de Leon Springs currently meets is designated use as a Class III waterbody.

Figure 2: Data Table

Ponce de Leon Springs			
Sampling Date	10/26/2007	**Field Data**	
Macroinvertebrate Data		Habitat Assessment Score	127
SCI Score	41 A	Temperature (deg. C)	20.13
SCI Evaluation	Healthy	pH	7.78
Chemistry Data		Dissolved Oxygen (mg/L)	5.9
Turbidity (NTU)	0.20	Specific Conductance (umhos/cm)	209
Color (PCU)	5 U	**Bacteria Data**	
Ammonia (mg/L)	0.01 U	*Escherichia coli* (col/100 mL)	14 B
Nitrate-Nitrite (mg/L)	0.24	*Enterococci* (col/100 mL)	42
TKN (mg/L)	0.08 U	Fecal Coliforms (col/100 mL)	8 B
Total Phosphorus (mg/L)	0.022 I	Total Coliforms (col/100 mL)	60

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

Figure 3: SCI Scores Over Time



FOR MORE INFORMATION, CONTACT:
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