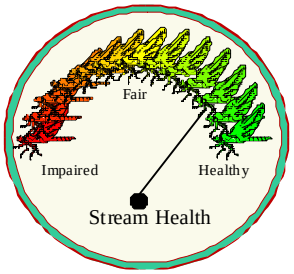


EcoSummary

Ponce de Leon Springs

10/31/2006

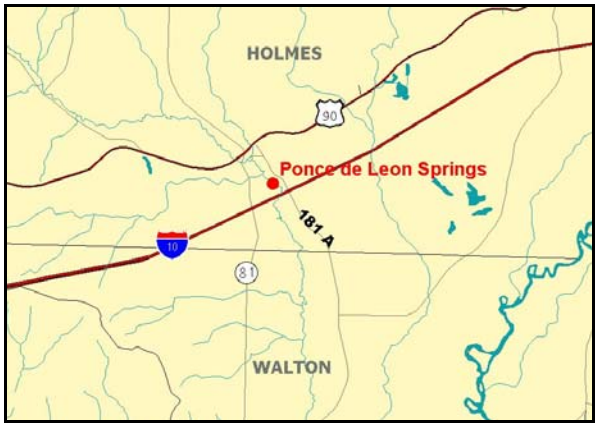


Background

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 October 31, 2006. 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 (0.23 mg/L) continues to remain slightly elevated but lower than the concentrations found in most Florida springs. Ammonia and total Kjeldahl nitrogen concentrations were below Method Detection Limits. The total phosphorus concentration (0.021 mg/L) was below the Practical Quantitation Limit.

The *Escherichia coli* concentration complied with the EPA single-sample guideline values of 235 CFU/100 mL for "designated beach areas." The *Enterococci* concentration, however, was just outside the acceptable limit (61 CFU/100 mL). The use of *Enterococci* as a human waste indicator may not be appropriate in relatively warm-water systems, such as springs. Other studies, including one by the Bureau of Laboratories, have found that *Enterococci* sources include plant material and soil, and therefore, the *Enterococci* densities in Ponce de Leon Springs may be a natural phenomenon.

Fecal and total coliform levels complied with Class III water quality standards.

The Habitat Assessment score (136) was in the "optimal" range. The SCI 2007 score of 42 placed Ponce de Leon Springs in the "healthy" range for this sampling event. Macroinvertebrate taxa richness was higher than the last sampling event, but has not changed significantly over time (see figure 3).

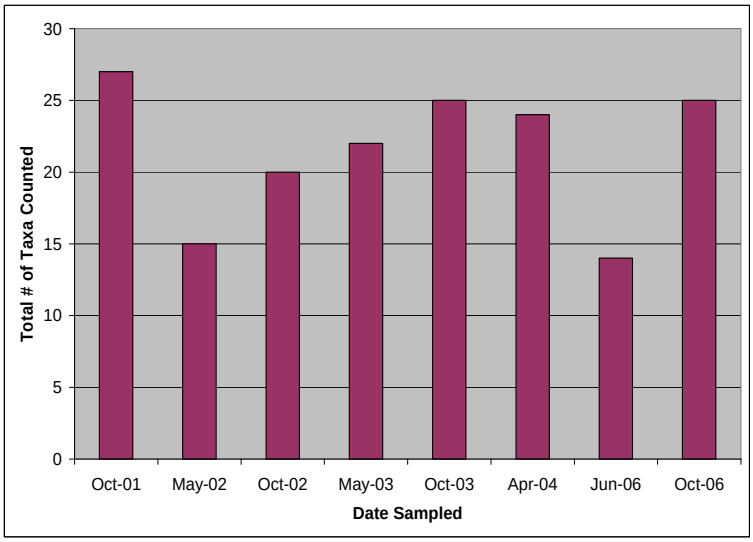
In conclusion, water quality and biological communities indicated that Ponce de Leon Springs is meeting its designated use as the Class III waterbody.

Figure 2: Data Table

Ponce de Leon Springs			
Sampling Date	10/31/2006	**Field Data**	
Macroinvertebrate Data		Habitat Assessment Score	136
SCI Score	42 A	Temperature (deg. C)	20.05
SCI Evaluation	Healthy	pH	7.22
Chemistry Data		Dissolved Oxygen (mg/L)	5.55
Turbidity (NTU)	0.15	Specific Conductance (umhos/cm)	219
Color (PCU)	5 U	**Bacteria Data**	
Ammonia (mg/L)	0.01 U	*Escherichia coli* (col/100 mL)	2 B
Nitrate-Nitrite (mg/L)	0.23	*Enterococci* (col/100 mL)	62
TKN (mg/L)	0.08 U	Fecal Coliforms (col/100 mL)	2 K
Total Phosphorus (mg/L)	0.021 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; "K"= Actual value is known to be less than value given; "A"= Value reported is the average of two or more determinations

Figure 3: Total Macroinvertebrate Taxa Over Time



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