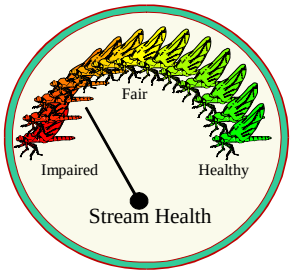


EcoSummary

Blue Hole Springs

4/13/2004

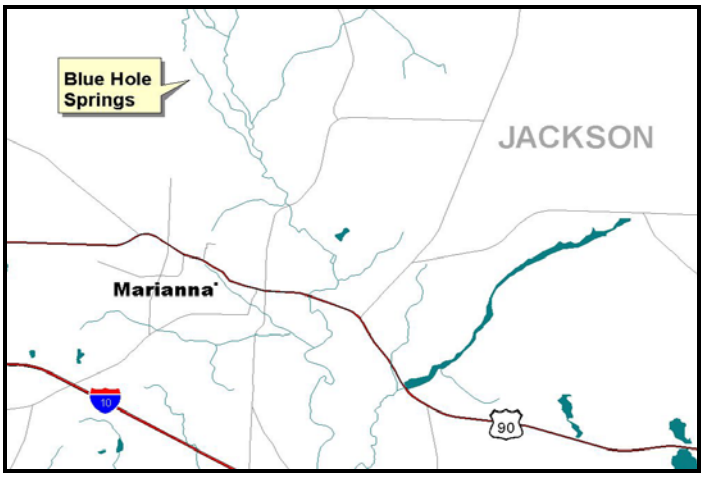


Background

The Florida Department of Environmental Protection's Division of Recreation and Parks selected Blue Hole Springs, along with springs from other 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. Blue Hole Springs is located in Florida Caverns State Park in Jackson County; see Figure 1. Blue Hole Springs Run flows into the Chipola River.

Samples were collected from Blue Hole Springs on April 13, 2003. Water chemistry samples were taken for ammonia, nitrate-nitrite, total Kjeldahl nitrogen (TKN), total phosphorus, *Escherichia coli*, *Enterococci*, fecal coliform, and total coliform analyses; see Figure 2. Habitat assessment, qualitative periphyton sampling, and benthic macroinvertebrate stream condition index (SCI) sampling were conducted.

Figure 1: Overview Map of the Blue Hole Springs Area



Results

The nitrate-nitrite concentration (0.47 mg/L) in Blue Hole Springs was higher than the values found in 80% of Florida streams (0.35 mg/L or lower); see Figure 2. The total phosphorus level was below the practical quantitation limit. Ammonia and TKN concentrations were below detection limits.

The total habitat assessment score (121) was near the lower end of the "optimal" range. Habitat smothering was problematic, scoring in the "poor" range.

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.

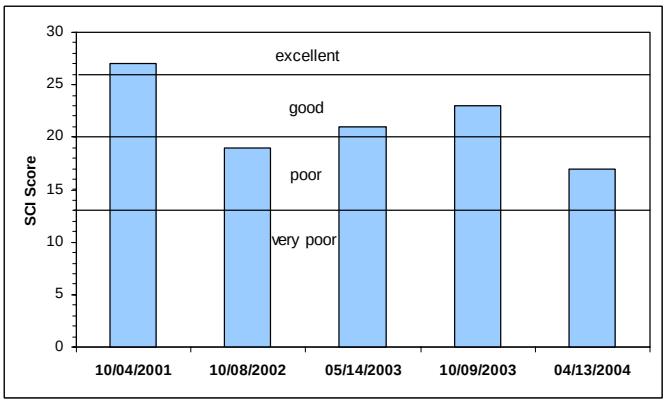
The stream condition index (SCI) score of 17 for Blue Hole Springs was in the "poor" range. The periphyton community was dominated by diatoms, with some blue-green and green algal taxa. In conclusion, somewhat elevated nitrate-nitrite, habitat smothering, and a poor quality macroinvertebrate community were the issues of concern in Blue Hole Springs.

Figure 2: Data Table

BLUE HOLE SPRINGS			
Sampling Date		4/13/2004	
Macroinvertebrate Data		**Periphyton Data**	
SCI Score	17	% Bacillariophyta	94.43
SCI Evaluation	Poor	% Cyanophycota	4.92
Number of Taxa	15	% Chlorophycota	0.66
EPT Index	2	% Cryptophycophyta	0
Florida Index	6	% Dominant Taxon	19.02
% Dominant Taxon	25.74	**Physical-Chemical Data**	
% Diptera	38.61	Habitat Assessment Score	121
Number of Chironomidae	7	Temperature (deg. C)	19.5
% Filter-Feeders	30.20	pH	6.7
Chemistry Data		Dissolved Oxygen (mg/L)	6.5
Turbidity (NTU)	0.4	Specific Conductance (umhos/cm)	289
Color (PCU)	5 U	**Bacteria Data**	
Ammonia (mg/L)	0.01 U	*Escherichia coli* (col/100 mL)	7 B,Q
Nitrate-Nitrite (mg/L)	0.47	*Enterococci* (col/100 mL)	33 B,Q
TKN (mg/L)	0.06 U	Fecal Coliforms (col/100 mL)	8 B,Q
Total Phosphorus (mg/L)	0.045 I	Total Coliforms (col/100 mL)	32 Q

"U"=Below detection limit; "I"=Below practical quantitation limit; "Q"=Outside of holding time; "B"=Results based on colony counts outside the acceptable range

Figure 3: Stream Condition Index Scores Over Time



FOR MORE INFORMATION, CONTACT:
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