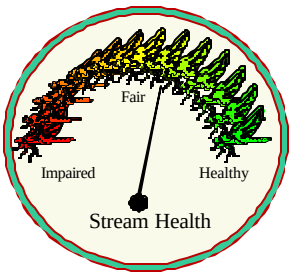


EcoSummary

Blue Hole Springs

05/14/2003

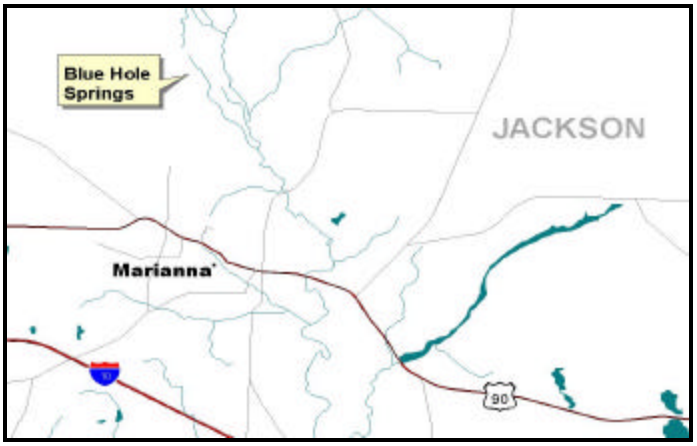


Background

The Florida Department of Environmental Protection's Division of Recreation and Parks selected Blue Hole Springs along with many 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. 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 May 14, 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 (0.43 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 (0.048 mg/L) was lower than those found in 60% of Florida streams (0.056 mg/L). Ammonia and TKN concentrations were below detection limits.

The total habitat assessment score (114) was in the "sub-optimal" range; habitat smothering was problematic. *Enterococci* and *Escherichia coli* concentrations complied with the EPA single-sample guideline values of 61 col/100mL and 235 CFU/100 mL, respectively, for "designated beach areas." Fecal and total coliform levels complied with Class III water quality standards.

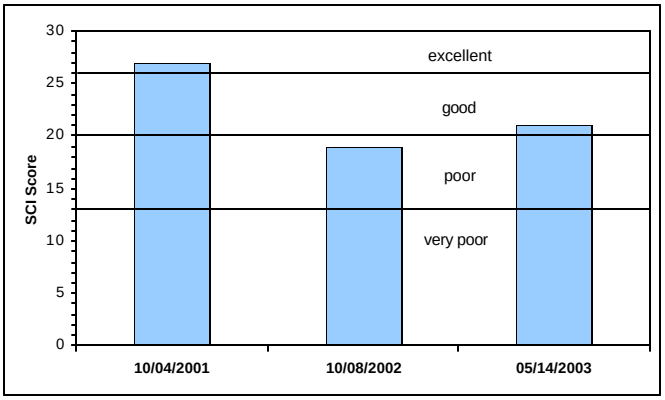
The stream condition index (SCI) score of 21 for Blue Hole Springs was in the "good" range. The periphyton community was dominated by diatoms, with some blue-green and green algal taxa. In conclusion, nitrate-nitrite and smothering of macroinvertebrate habitats were the parameters of concern in Blue Hole Springs.

Figure 2: Data Table

BLUE HOLE SPRINGS			
Sampling Date		05/14/2003	
Macroinvertebrate Data		**Periphyton Data**	
SCI Score	21	% Bacillariophyta	94.33
SCI Evaluation	good	% Cyanophycota	4.67
Number of Taxa	18	% Chlorophycota	1.00
EPT Index	3	Dominant Taxon	*Cocconeis placentula*
Florida Index	11	% Dominant Taxon	36.67
% Dominant Taxon	45.71	**Physical-Chemical Data**	
% Diptera	31.43	Habitat Assessment Score	114
Number of Chironomidae	5	Temperature (deg. C)	20.4
% Filter-Feeders	25.24	pH	7.4
Chemistry Data		Dissolved Oxygen (mg/L)	6.6
Turbidity (NTU)	1.1	Specific Conductance (umhos/cm)	309
Color (PCU)	5 U	**Bacteria Data**	
Ammonia (mg/L)	0.01 U	*Escherichia coli* (col/100 mL)	44 Q
Nitrate-Nitrite (mg/L)	0.43	*Enterococci* (col/100 mL)	2 Q
TKN (mg/L)	0.12 U	Fecal Coliforms (col/100 mL)	2 Q
Total Phosphorus (mg/L)	0.048	Total Coliforms (col/100 mL)	140 Q

"U"=Below detection limit; "Q"=Outside of holding time

Figure 3: Stream Condition Index Scores Over Time



FOR MORE INFORMATION, CONTACT:
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