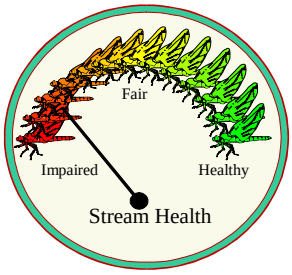


EcoSummary

Alexander Springs

10/14/2003

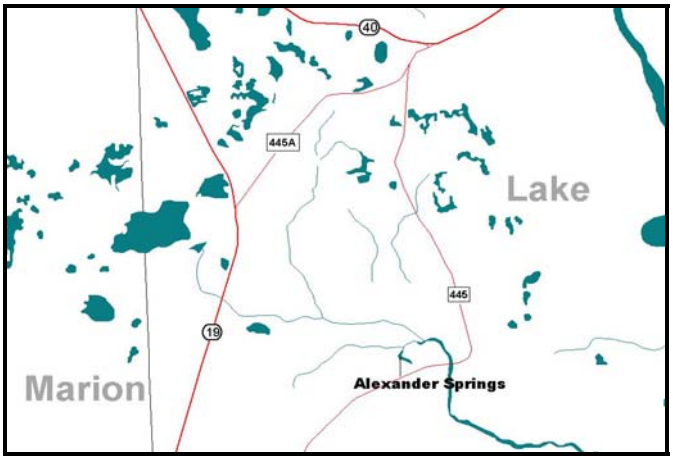


Background

Florida DEP's Division of Water Resource Management selected Alexander Springs for biological and water quality monitoring as part of the Springs Initiative. Data from these efforts will be used for documenting conditions within springs throughout Florida and for making resource protection decisions. Alexander Springs Recreation Area is located in Lake County, Florida, in the Ocala National Forest; see Figure 1. Alexander Springs flows into the St. John's River and is a popular recreation area.

Samples were collected from Alexander Springs on October 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 invertebrate stream condition index (SCI) sampling were conducted.

Figure 1: Overview Map of the Alexander Springs Area



Results

The nitrate-nitrite concentration (0.045 mg/L) in Alexander Springs was lower than the values found in 60% of Florida streams (0.052 mg/L); see Figure 2. Total phosphorus and TKN concentrations were below practical quantitation limits. Ammonia concentration was below detection limits.

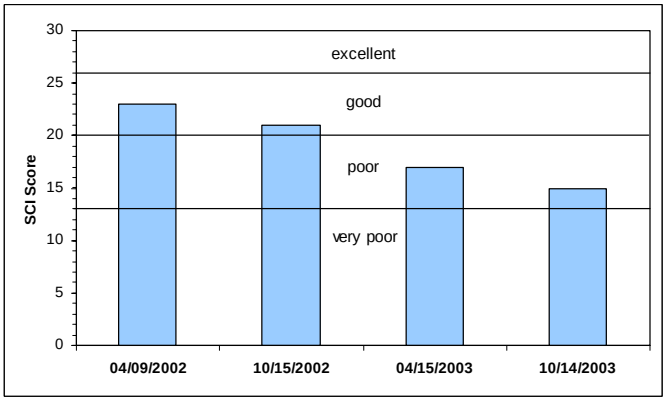
The overall habitat assessment score (120) was at the low end of the "optimal" range; substrate diversity, water velocity, and, in particular, habitat smothering were the parameters of concern. The *Enterococci* concentration was below the EPA single-sampling guideline value of 61 CFU/100mL for "designated beach areas;" see Figure 2. *Escherichia coli* concentration was below the designated beach guideline of 235 CFUl/100 mL. Fecal and total coliform levels complied with Class III water quality standard values. The SCI score of 15 for Alexander Springs was in the "poor" range. The SCI score at Alexander Springs has steadily decreased over the past two years; see Figure 3. The periphyton community was dominated by diatoms, with some blue-green and green algal taxa. In conclusion, macroinvertebrate community health and smothering of macroinvertebrate habitats continued to be the parameters of concern in Alexander Springs.

Figure 2: Data Table

ALEXANDER SPRINGS			
Sampling Date		10/14/2003	
Macroinvertebrate Data		**Periphyton Data**	
SCI Score	15	% Bacillariophyta	79.00
SCI Evaluation	Poor	% Cyanophycophyta	19.75
Number of Taxa	19	% Chlorophycota	0.94
EPT Index	1	Dominant Taxon	Fragilariaceae
Florida Index	1	% Dominant Taxon	57.99
% Dominant Taxon	45.45	**Physical-Chemical Data**	
% Diptera	16.36	Habitat Assessment Score	120
Number of Chironomidae	6	Temperature (deg. C)	23.6
% Filter-Feeders	1.82	pH	7.7
Chemistry Data		Dissolved Oxygen (mg/L)	4.0
Turbidity (NTU)	0.4	Specific Conductance (umhos/cm)	1053
Color (PCU)	5 U	**Bacteria Data**	
Ammonia (mg/L)	0.01 U	*Escherichia coli* (col/100 mL)	6 B,Q
Nitrate-Nitrite (mg/L)	0.045	*Enterococci* (col/100 mL)	12 B,Q
TKN (mg/L)	0.11 I	Fecal Coliforms (col/100 mL)	8 B,Q
Total Phosphorus (mg/L)	0.056 I	Total Coliforms (col/100 mL)	20 B,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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