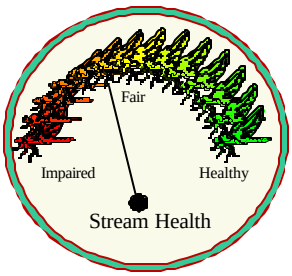


EcoSummary

Alexander Springs

04/15/2003

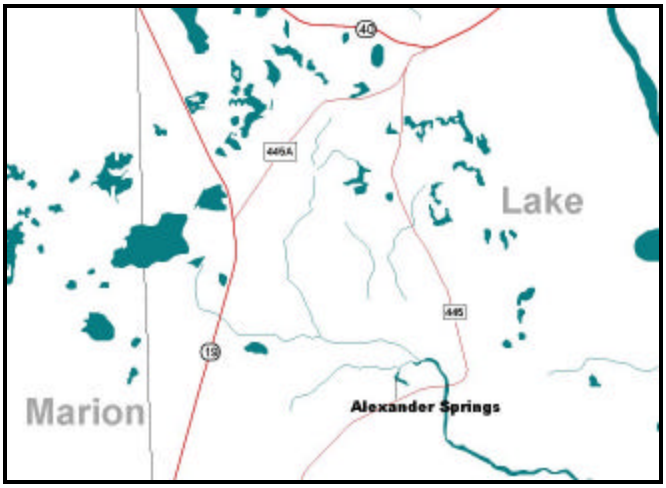


Background

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 April 15, 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 (0.034 mg/L) in Alexander Springs was lower than those found in 70% of Florida streams (0.04 mg/L); see Figure 2. The total phosphorus level (0.049 mg/L) was lower than those found in 60% of Florida streams (0.056 mg/L). The TKN concentration was below quantitation limits and the ammonia concentration was below detection limits.

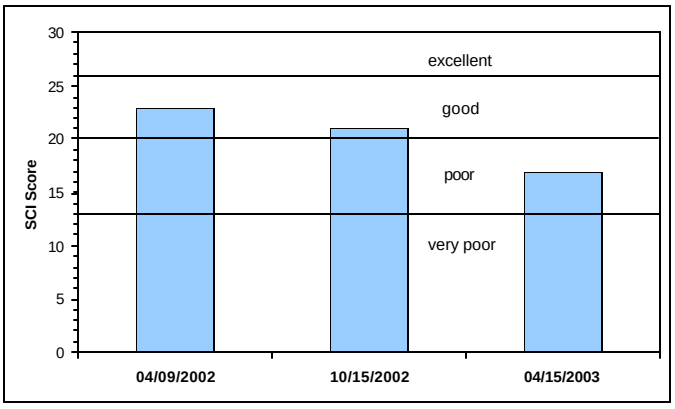
The overall habitat assessment score (116) was in the "sub-optimal" range; substrate diversity, water velocity, and, in particular, habitat smothering were the parameters of concern. The *Enterococci* concentration was below the EPA single-sampling guideline value of 61 CFU/100mL for "designated beach areas;" see Figure 2. *Escherichia coli* concentration was below the designated beach guideline of 235 CFU/100 mL. Fecal and total coliform levels complied with Class III water quality standards. The SCI score of 17 for Alexander Springs was in the "poor" range. 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 were the parameters of concern in Alexander Springs.

Figure 2: Data Table

ALEXANDER SPRINGS			
Sampling Date		04/15/2003	
Macroinvertebrate Data		**Periphyton Data**	
SCI Score	17	% Bacillariophyta	88.97
SCI Evaluation	poor	% Cyanophycophyta	8.62
Number of Taxa	16	% Chlorophycota	2.41
EPT Index	0	Dominant Taxon	Fragilariaceae
Florida Index	4	% Dominant Taxon	59.66
% Dominant Taxon	54.55	**Physical-Chemical Data**	
% Diptera	21.82	Habitat Assessment Score	116
Number of Chironomidae	6	Temperature (deg. C)	23.5
% Filter-Feeders	4.09	pH	8.0
Chemistry Data		Dissolved Oxygen (mg/L)	2.3
Turbidity (NTU)	0.2 A	Specific Conductance (umhos/cm)	1059
Color (PCU)	5 U	**Bacteria Data**	
Ammonia (mg/L)	0.01 U	*Escherichia coli* (col/100 mL)	1 K,Q
Nitrate-Nitrite (mg/L)	0.034 A	*Enterococci* (col/100 mL)	1 K,Q
TKN (mg/L)	0.1 I	Fecal Coliforms (col/100 mL)	1 K,Q
Total Phosphorus (mg/L)	0.049	Total Coliforms (col/100 mL)	1 K,Q

"U"=Below detection limit; "I"=Below practical quantitation limit; "Q"=Outside of holding time; "A"=Average value; "K"=Actual value less than value given

Figure 3: Stream Condition Index Scores Over Time



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