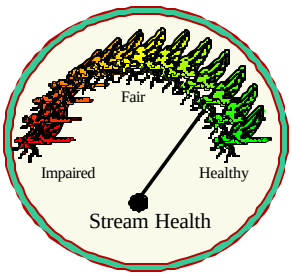


EcoSummary

Alexander Springs

04/09/2002

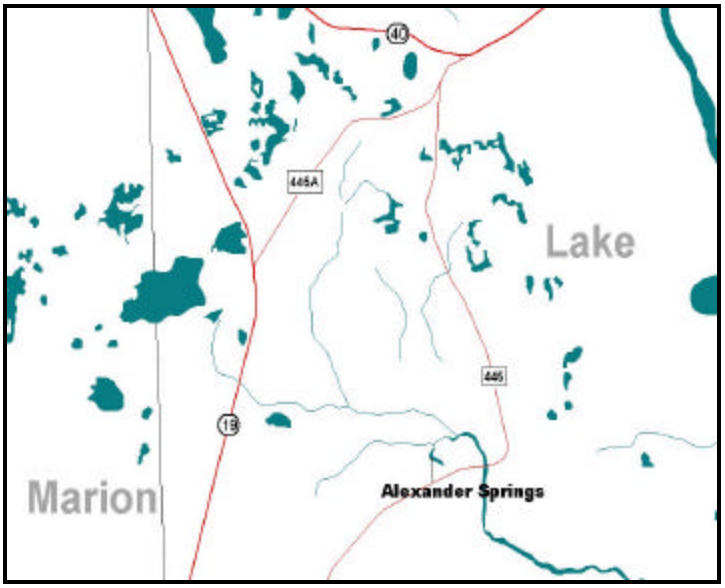


Background

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 9, 2002. Water chemistry samples were taken for ammonia, nitrate-nitrite, total Kjeldahl nitrogen (TKN), total phosphorus, other chemical parameters, *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 those found in 60% of Florida streams (0.0515 mg/L); see Figure 2. The TKN level (0.24 mg/L) was lower than is found in 90% of Florida streams (0.29 mg/L). The total phosphorus level (0.072 mg/L) was lower than is found in 50% of Florida streams (0.077 mg/L). Ammonia concentration was below detection limits.

The overall habitat assessment score (106) was in the sub-optimal range; substrate diversity, water velocity, and habitat smothering were the categories that received marginal or poor scores. *Enterococci* concentration was below the EPA single-sampling guideline value of 61 CFUl/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 23 for Alexander Springs was in the "good" range. The periphyton community was dominated by diatoms, with some blue-green and green algal taxa. In conclusion, water velocity and smothering of macroinvertebrate habitats (with algal mats and organic silt) were the parameters of concern in Alexander Springs.

Figure 2: Data Table

ALEXANDER SPRINGS			
Sampling Date		4/9/2002	
Macroinvertebrate Data		**Periphyton Data**	
SCI Score	23	% Bacillariophyceae	89.89
SCI Evaluation	good	% Cyanophyceae	6.62
Number of Taxa	22	% Chlorophyceae	1.1
EPT Index	0	Dominant Taxon	Fragilariaceae
Florida Index	7	% Dominant Taxon	63.05
% Dominant Taxon	20.83	**Physical-Chemical Data**	
% Diptera	40	Total Habitat Assessment Score	106
Total Number of Chironomidae	12	Temperature (deg. C)	23.8
% Filter-Feeders	7.92	pH	7.9
Chemistry Data		Dissolved Oxygen (mg/L)	1.9
Turbidity (NTU)	0.1 A	Specific Conductance (umhos/cm)	1064
Color (PCU)	5 U	**Bacteria Data**	
Ammonia (mg/L)	0.01 U	*Escherichia Coli* (col/100 mL)	12 Q
Nitrate-Nitrite (mg/L)	0.045	*Enterococci* (col/100 mL)	26 Q
TKN (mg/L)	0.24	Fecal Coliforms (col/100 mL)	22 Q
Total Phosphorus (mg/L)	0.072	Total Coliforms (col/100 mL)	130 Q

"U"=Below detection limit; "A"=Average value; "Q"=Outside holding time

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