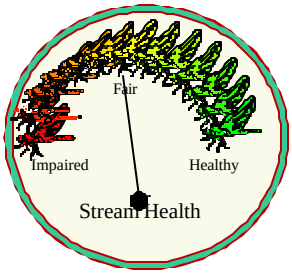


EcoSummary

Silver River Springs

4/15/03



Background

Florida DEP's Division of Water Resource Management selected Silver River Spring for biological and water quality monitoring. Data from these efforts will be used for documenting conditions within the spring run and for making resource protection decisions. Silver River Springs is located northeast of Ocala in Marion County, Florida (Figure 1). Silver River Springs flows into Ocklawaha River. Silver River Springs is a Floridan Aquifer-dominated system and is known for its recreational and aesthetic qualities.

Water chemistry samples were taken for ammonia, nitrate-nitrite, total Kjeldahl nitrogen, total phosphorus, color, turbidity, *Enterococci*, *Escherichia coli*, fecal coliform, and total coliform analysis (Figure 2). Habitat assessment, qualitative periphyton sampling, and benthic invertebrate stream condition index (SCI) sampling were conducted.

Results

The nitrate-nitrite concentration (1.1 mg/L) at the sampling site was higher than those found in 95% of Florida streams (1.05 mg/L) (Figure 2). Elevated nitrite-nitrate levels in Silver River Springs are related to nitrogen loading in the recharge basin. The ammonia concentration (0.01 mg/L) and total Kjeldahl nitrogen concentration (0.05 mg/L) were both below the minimum detection limit.

Enterococci and Eschericia coli densities complied with the EPA single-sample guideline value of 61 CFU/100 mL and 235 CFU/100 mL, respectively, for "designated beach areas." Fecal and total coliform levels were below the Class III water body water standards. The periphyton community in the Silver River was dominated by diatoms with some blue-green taxa. The particular taxa found were indicative of eutrophic conditions, which was not surprising given the nutrient enrichment in Silver Springs. The stream condition index (SCI) score of 19 for Silver River Springs was in the "poor" range.

In conclusion, elevated nitrate-nitrate levels in Silver River Springs appeared to be the main stressor associated with a relatively low quality algal community.

Figure 1: Overview Map of the Silver Springs Area

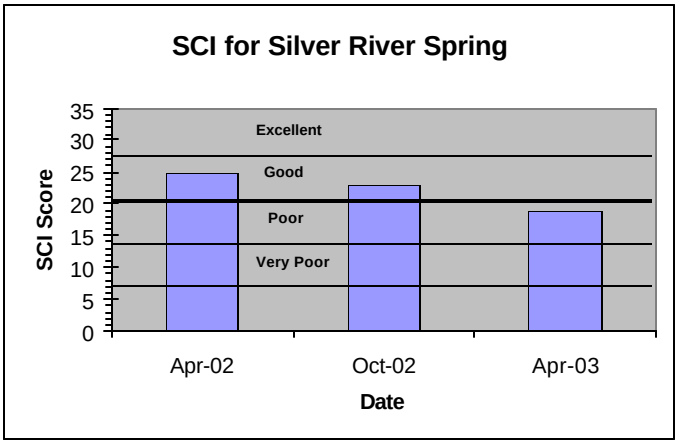


Figure 2: Data Table

Silver River Springs			
Sampling Date		4/15/2003	
Macroinvertibrate Parameters		Periphyton Parameters	
SCI	19	% Bacillariophyceae	87.7
SCI Evaluation	poor	% Cyanophyceae	10.4
Number of Taxa	18	% Chlorophyceae	1.9
EPT Index	1	Dominant taxon	Fragilariaceae
FL Index	5	Percent Dominant taxon	27.8
% Dominant Taxon	61.1	Physical-Chemical Data	
% Diptera	22.3	Habitat Assessment	136
Total number of Chironomidae	8	Specific Conductivity (umhos/cm)	446
% Filter-Feeders	3.4	Dissolved Oxygen (mg/L)	3.9
Chemistry Data		pH (SU)	7.4
Ammonia (mg/L)	0.01 U	Temperature (deg C)	23.4
Nitrate-Nitrite (mg/L)	1.1	Bacteria Parameters	
TKN (mg/L)	0.06 U	*Enterococci* (col/100mL)	8 Q
Total Phosphorus (mg/L)	0.044	*Escherichia coli* (col/100mL)	4 Q
Color (PCU)	5 U	Fecal Coliforms (col/100 mL)	2 Q
Turbidity (NTU)	0.045	Total Coliforms (col/100mL)	50 Q

"I"- Less than the minimum quantitation limit; "Q"- Information Only, "U"-Below minimum detection limit; "K" –Actual value less than given value

Figure 3. SCI Evaluation for Silver River Spring



FOR MORE INFORMATION, CONTACT:
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