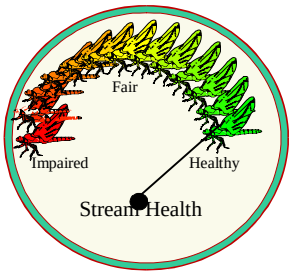


EcoSummary

Silver River Springs

10/13/03



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, and is a Floridan Aquifer-dominated system 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 (1.2 mg/L) at the sampling site were 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 Kjeldal nitrogen concentration (0.06 mg/L) were below their respective minimum detection limit.

Enterococci and Eschericia coli densities complied with the EPA single-sample guideline value of 61 CFU/100mL and 235 CFU/mL, respectively, for "designated beach areas." The total coliform level exceeded the Class III water quality standard while the fecal coliform concentration complied with Class III standards. The periphyton community in Silver River Springs 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 River Springs. The stream condition index (SCI) score of 27 was improved compared with the previous sampling (19). A SCI score of 27 puts Silver River Springs in the "excellent" 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. The SCI indicated good invertebrate health. The total coliform concentration will remain closely monitored, and future sampling will attempt to determine potential causes for the periodic excursions.

Figure 1: Overview Map of the Silver Springs Area

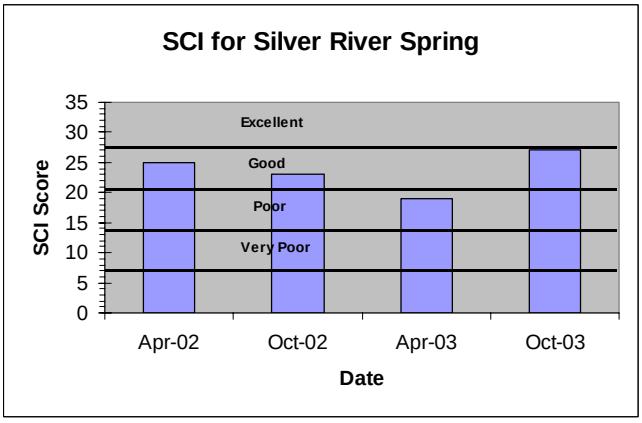


Figure 2: Data Table

Silver River Springs			
Sampling Date		10/13/2003	
Macroinvertebrate Parameters		Periphyton Parameters	
SCI	27	%Bacillariophyceae	89.1
SCI Evaluation	excellent	%Cyanophyceae	9.9
Number of Taxa	27	%Chlorophyceae	1
EPT Index	4	Dominant taxon	Fragilariaceae
FL Index	14	Percent Dominant taxon	20.2
%Dominant Taxon	50.5	Physical-Chemical Data	
%Diptera	21.8	Habitat Assessment	136
Total number of Chironomidae	11	Specific Conductivity (umhos/cm)	426
%Filter-Feeders	1.5	Dissolved Oxygen (mg/L)	4
Chemistry Data		pH (SU)	7.1
Ammonia (mg/L)	0.01 U	Temperature (deg C)	23.5
Nitrate-Nitrite (mg/L)	1.2	Bacteria Parameters	
TKN (mg/L)	0.06 U	*Enterococci* (col/100mL)	42 Q
Total Phosphorus (mg/L)	0.096 I	*Escherichia coli* (col/100mL)	126 BQ
Color (PCU)	5 UQ	Fecal Coliforms (col/100mL)	114 Q
Turbidity (NTU)	1.8 Q	Total Coliforms (col/100mL)	4400 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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