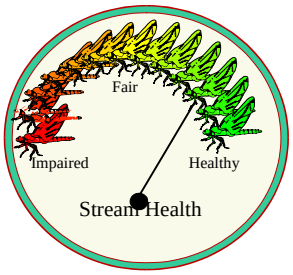


EcoSummary

Silver River Springs

5/4/2004



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). The Silver River, which flows into the Ocklawaha River, 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 was higher than the values found in 95% of Florida streams (Figure 2). Elevated nitrite-nitrate levels in Silver River Springs is related to nitrogen loading in the recharge basin. Ammonia and total Kjeldal nitrogen were below minimum detection limits.

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." The total and fecal coliform concentrations complied with Class III water quality standards. The periphyton community in Silver River Springs was dominated by diatoms with some blue-green taxa. The stream condition index (SCI) score of 21 was lower than the previous sampling (27), yet the current SCI still was in the "good" range. The overall habitat assessment score (124) was at the low end of the "optimal" range. Substrate diversity and habitat smothering were habitat parameters of concern.

In conclusion, elevated nitrate-nitrate levels appeared to be the main stressor in Silver River Springs. The SCI was in the lower portion of the "good" range.

Figure 1: Overview Map of the Silver Springs Area

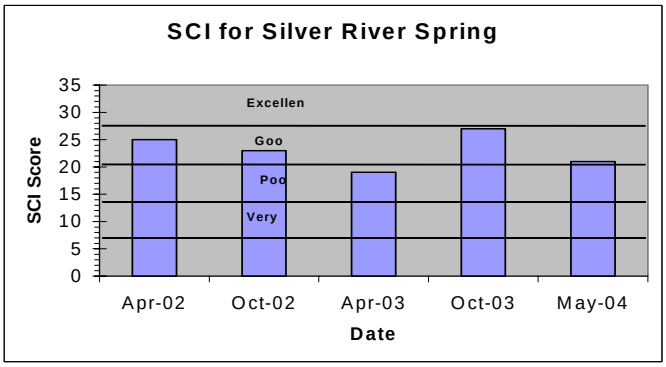


Figure 2: Data Table

Silver River Springs			
Sampling Date		5/4/2004	
Macroinvertibrate Parameters		Periphyton Parameters	
SCI	21	%Bacillariophyceae	79.2
SCI Evaluation	good	%Cyanophyceae	19.2
Number of Taxa	18	%Chlorophyceae	1.6
EPT Index	2	Percent Dominant taxon	19.7
FL Index	7	Physical-Chemical Data	
%Dominant Taxon	42.1	Habitat Assessment	124
%Diptera	43.9	Specific Conductivity (umhos/cm)	476
Total number of Chironomidae	5	Dissolved Oxygen (mg/L)	4.2
%Filter-Feeders	36.9	pH (SU)	7.6
Chemistry Data		Temperature (deg C)	23.2
Ammonia (mg/L)	0.01 U	Bacteria Parameters	
Nitrate-Nitrite (mg/L)	1.2	*Enterococci* (col/100mL)	3 BQ
TKN (mg/L)	0.06 U	*Escherichia coli* (col/100mL)	70 Q
Total Phosphorus (mg/L)	0.059 I	Fecal Coliforms (col/100 mL)	13 BQ
Color (PCU)	5 U	Total Coliforms (col/100mL)	56 Q
Turbidity (NTU)	0.1		

"I"- Less than the minimum quantitation limit; "Q"- Information Only, "U"-Below minimum detection limit; "B" –Based On Colony Counts Outside Acceptable Range

Figure 3. SCI Evaluation for Silver River Spring



FOR MORE INFORMATION, CONTACT:
Thomas Deck, FDEP Environmental Assessment Section
2600 Blair Stone Road MS#6511 Tallahassee, FL 32399-2400 (850) 245-8074 thomas.deck@dep.state.fl.us