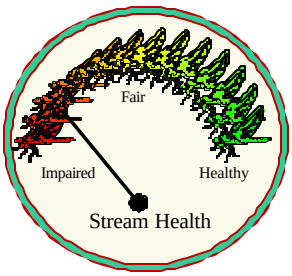


EcoSummary

Fanning Springs

05/20/2003

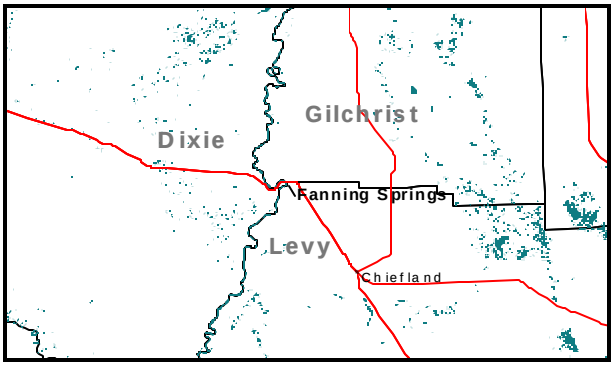


Background

Florida DEP's Division of Recreation and Parks selected Fanning Springs, as well as springs from many other state parks and national forests, for biological and water quality monitoring. Data from these efforts will be used for documenting conditions within each park and for making resource protection decisions. Fanning Springs State Park is located in Levy County, Florida; see Figure 1. Fanning Springs, which flows into the Suwannee River, is a Floridan Aquifer-dominated system known for its recreational and aesthetic qualities.

Samples were collected from Fanning Springs on May 20, 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. SCI scores for Fanning Springs over time are shown in Figure 3.

Figure 1: Overview Map of the Fanning Springs Area



Results

Nutrient concentrations in Fanning Springs followed the trend found over the sampling period thus far; see Figure 2. Nitrate-nitrite concentration (4.7 mg/L) was much higher than that found in 95% of Florida streams (0.97 mg/L). This very high concentration of nitrate-nitrite may promote exotic plant growth, stimulate nuisance algal blooms, and may potentially be toxic to sensitive organisms such as amphibians. Elevated nitrate-nitrite levels in Fanning Springs Run are related to nitrogen loading in the recharge basin. Ammonia was below the detection limit; TKN was below the quantitation limit. The total phosphorus concentration (0.077 mg/L) was not of concern.

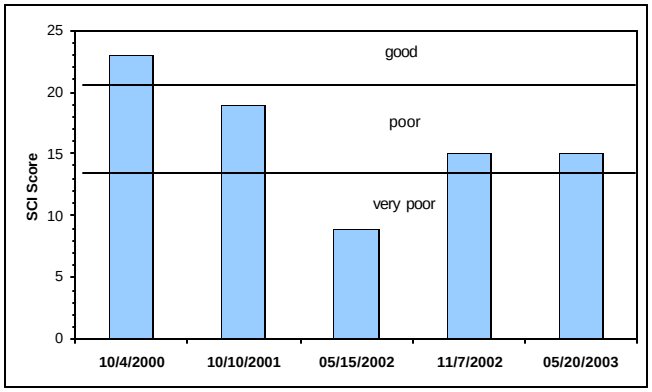
The overall habitat assessment score (109) was in the "sub-optimal" range; water velocity in particular was a parameter of concern. *Enterococci* and *Escherichia coli* concentrations were less than the EPA single-sample guideline values of 61 CFU/100mL and 235 CFU/100 mL, respectively, for "designated beach areas." Fecal and total coliform levels complied with Class III water quality standards. The SCI score of 15 for Fanning Springs was in the "poor" range. The periphyton community was dominated by diatoms, with some blue-green and green algal taxa. In conclusion, elevated nitrate-nitrite levels and poor macroinvertebrate community health were the parameters of concern in Fanning Springs.

Figure 2: Data Table

FANNING SPRINGS			
Sampling Date		05/20/2003	
Macroinvertebrate Data		**Periphyton Data**	
SCI Score	15	% Bacillariophyta	87.75
SCI Evaluation	poor	% Cyanophycota	7.62
Number of Taxa	19	% Chlorophycota	4.30
EPT Index	0	Dominant Taxon	Fragilariaceae
Florida Index	3	% Dominant Taxon	21.19
% Dominant Taxon	25.00	**Physical-Chemical Data**	
% Diptera	20.00	Habitat Assessment Score	109
Number of Chironomidae	6	Temperature (deg. C)	22.3
% Filter-Feeders	2.00	pH	7.0
Chemistry Data		Dissolved Oxygen (mg/L)	2.7
Turbidity (NTU)	0.2	Specific Conductance (umhos/cm)	469
Color (PCU)	5 U	**Bacteria Data**	
Ammonia (mg/L)	0.01 U	*Escherichia coli* (col/100 mL)	1 K
Nitrate-Nitrite (mg/L)	4.7	*Enterococci* (col/100 mL)	2
TKN (mg/L)	0.084 I	Fecal Coliforms (col/100 mL)	1 K
Total Phosphorus (mg/L)	0.077	Total Coliforms (col/100 mL)	10

"U"=Below detection limit; "I"=Below practical quantitation limit; "K"=Actual valueless than value given

Figure 3: SCI Scores Over Time



FOR MORE INFORMATION, CONTACT:
Amy Wheeler, FDEP Environmental Assessment Section
2600 Blair Stone Road MS#6511 Tallahassee, FL 32399-2400 (850) 245-8070 Amy.Wheeler@dep.state.fl.us