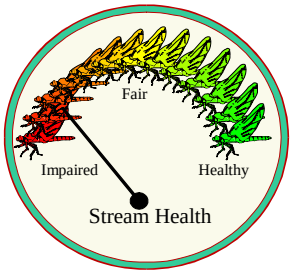


EcoSummary

Fanning Springs

10/28/2003

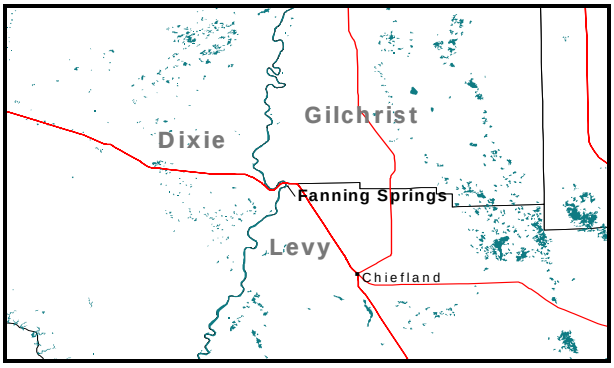


Background

Florida DEP's Division of Recreation and Parks selected Fanning Springs, as well as springs from other state parks, 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 October 28, 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.

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. The nitrate-nitrite concentration (5.1 mg/L) continued to be much higher than the values found in 95% of Florida streams (0.97 mg/L); see Figure 2. This very high concentration of nitrate-nitrite is problematic in that it can potentially promote exotic plant growth and stimulate nuisance algal blooms. Elevated nitrate-nitrite levels in Fanning Springs Run are related to nitrogen loading in the recharge basin. Ammonia was below detection limit; TKN was below the quantitation limit. The total phosphorus concentration (0.06 mg/L) was lower than the values found in 50% of Florida streams (0.077 mg/L or higher).

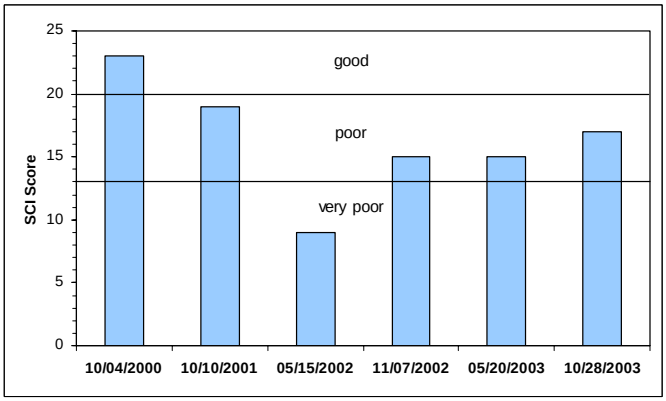
The overall habitat assessment score (118) was in the "sub-optimal" range. *Enterococci* and *Escherichia coli* concentrations were below the EPA single-sample guideline values of 61 CFUl/100mL and 235 CFUl/100 mL, respectively, for "designated beach areas." Fecal and total coliform levels complied with Class III water quality standards. The SCI score of 17 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 continue to be parameters of concern in Fanning Springs.

Figure 2: Data Table

FANNING SPRINGS			
Sampling Date		10/28/2003	
Macroinvertebrate Data		**Periphyton Data**	
SCI Score	17	% Bacillariophyta	63.87
SCI Evaluation	Poor	% Cyanophycota	27.42
Number of Taxa	29	% Chlorophycota	8.71
EPT Index	2	Dominant Taxon	*Diadesmis confervacea*
Florida Index	6	% Dominant Taxon	13.23
% Dominant Taxon	40.19	**Physical-Chemical Data**	
% Diptera	36.45	Habitat Assessment Score	118
Number of Chironomidae	13	Temperature (deg. C)	22.4
% Filter-Feeders	4.21	pH	6.3
Chemistry Data		Dissolved Oxygen (mg/L)	2.7
Turbidity (NTU)	0.1	Specific Conductance (umhos/cm)	486
Color (PCU)	5 U	**Bacteria Data**	
Ammonia (mg/L)	0.01 U	*Escherichia coli* (col/100 mL)	1 K,Q
Nitrate-Nitrite (mg/L)	5.1	*Enterococci* (col/100 mL)	6 B,Q
TKN (mg/L)	0.07 I	Fecal Coliforms (col/100 mL)	2 B,Q
Total Phosphorus (mg/L)	0.06	Total Coliforms (col/100 mL)	10 B,Q

"U"=Below detection limit; "I"=Below practical quantitation limit; "K"=Actual value is less than value given; "Q"=Outside of holding time; "B"=Results based on colony counts outside the acceptable range

Figure 3: SCI Scores Over Time



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