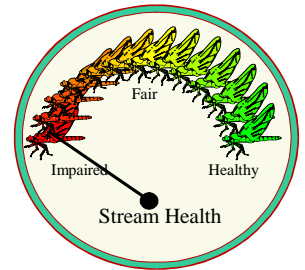


EcoSummary

Fanning Springs

4/23/2004

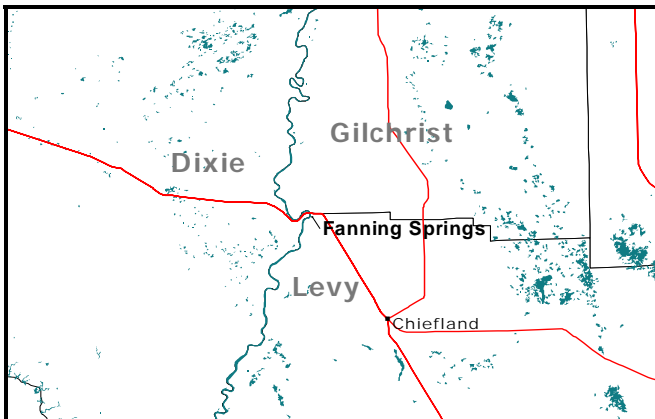


Background

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 April 23, 2004. 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



concentrations were below the EPA single-sample guideline values of 61 CFUI/100 mL and 235 CFUI/100 mL, respectively, for "designated beach areas." Fecal and total coliform levels complied with Class III water quality standards.

The SCI score of 9 for Fanning Springs was in the "very poor" range. The periphyton community was dominated by diatoms, with some blue-green and green algal taxa. In conclusion, very elevated nitrate-nitrite levels and very poor macroinvertebrate community health continue to be parameters of concern in Fanning Springs.

Figure 2: Data Table

FANNING SPRINGS			
Sampling Date		4/23/2004	
Macroinvertebrate Data		Periphyton Data	
SCI Score	9	% Bacillariophyta	90.49
SCI Evaluation	Very Poor	% Cyanophycota	5.90
Number of Taxa	11	% Chlorophycota	3.28
EPT Index	1	% Euglenophycota	0.33
Florida Index	3	% Dominant Taxon	23.93
% Dominant Taxon	71.43	Physical-Chemical Data	
% Diptera	1.90	Temperature (deg. C)	22.4
Number of Chironomidae	1	pH	7.2
% Filter-Feeders	0.95	Dissolved Oxygen (mg/L)	4.2
Chemistry Data		Specific Conductance (umhos/cm)	437
Turbidity (NTU)	0.35	Bacteria Data	
Color (PCU)	5	<i>Escherichia coli</i> (col/100 mL)	40
Ammonia (mg/L)	0.01 U	<i>Enterococci</i> (col/100 mL)	40
Nitrate-Nitrite (mg/L)	4.7	Fecal Coliforms (col/100 mL)	25 B
TKN (mg/L)	0.089 I	Total Coliforms (col/100 mL)	60
Total Phosphorus (mg/L)	0.09		

"U"=Below detection limit; "I"=Below practical quantitation limit; "B"=Results based on colony counts outside the acceptable range

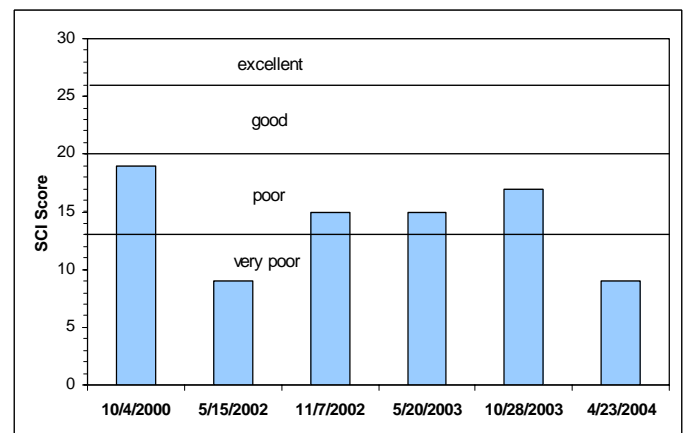
Results

Nutrient concentrations in Fanning Springs followed the trend found over the sampling period thus far. The nitrate-nitrite concentration (4.7 mg/L) continued to be much higher than the values found in 95% of Florida streams; 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 concentration was below detection limit and TKN was below the practical quantitation limit. The total phosphorus concentration (0.09 mg/L) was relatively average for Florida streams.

Although the habitat was not assessed for this sampling event, Fanning Springs has consistently scored in the "sub-optimal" range. *Enterococci* and *Escherichia coli*

Figure 3: SCI Scores Over Time



FOR MORE INFORMATION, CONTACT:

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