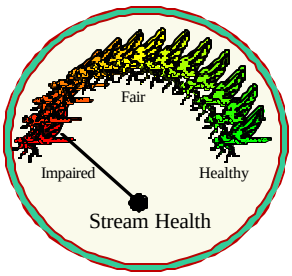


EcoSummary

Fanning Springs

05/15/2002

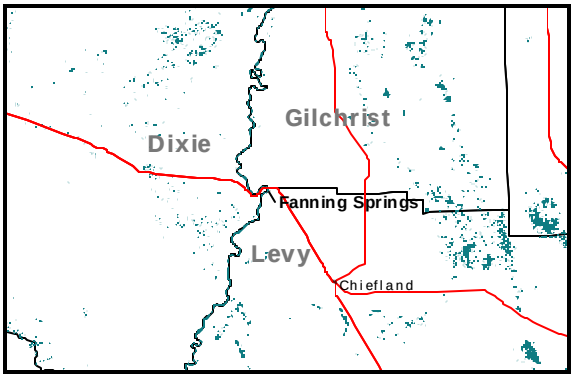


Background

Florida DEP's Division of Recreation and Parks selected Fanning Springs, as well as springs from many 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 May 15, 2002. Water chemistry samples were taken for ammonia, nitrate-nitrite, total Kjeldahl nitrogen (TKN), total phosphorus, other chemical parameters, *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

The nitrate-nitrite concentration (4.3 mg/L) was much higher than that 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 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, TKN, and total phosphorus concentrations remained within natural background ranges.

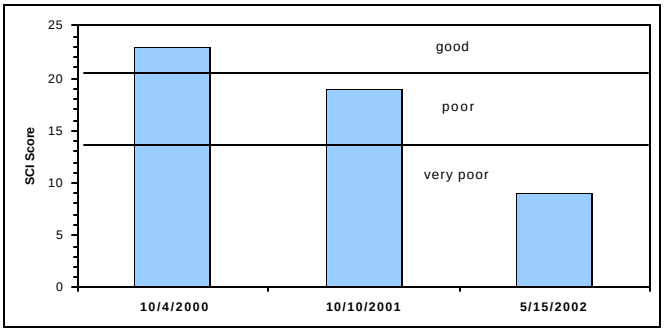
The overall habitat assessment score (111) was in the sub-optimal range; substrate diversity and substrate availability were parameters of concern. *Enterococci* concentration was well below the EPA single-sampling guideline value of 61 CFUl/100mL for "designated beach areas." *Escherichia coli* concentration was well below the designated beach guideline of 235 CFU/100 mL. 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 SCI scores have decreased dramatically over the sampling period. This decline may be due to decreased habitat availability or physical disruption from boating or dredging activities, or recent spring restoration may have temporarily "washed-out" macroinvertebrates. Continued monitoring efforts in Fanning Springs may demonstrate improved conditions in the future. The periphyton community was dominated by diatoms, with some blue-green and green algal taxa. In conclusion, elevated nitrate-nitrite levels, macroinvertebrate and periphyton communities, and habitat availability were the parameters of concern in Fanning Springs.

Figure 2: Data Table

FANNING SPRINGS			
Sampling Date		5/15/2002	
Macroinvertebrate Data		**Periphyton Data**	
SCI Score	9	% Bacillariophyceae	87.1
SCI Evaluation	very poor	% Cyanophyceae	9.88
Number of Taxa	8	% Chlorophyceae	3.02
EPT Index	0	Dominant Taxon	Fragilariaceae
Florida Index	2	% Dominant Taxon	25.63
% Dominant Taxon	87.38	**Physical-Chemical Data**	
% Diptera	0.97	Total Habitat Assessment Score	111
Total Number of Chironomidae	1	Temperature (deg. C)	22.5
% Filter-Feeders	0	pH	7.06
Chemistry Data		Dissolved Oxygen (mg/L)	2.07
Turbidity (NTU)	0.05 U	Specific Conductance (umhos/cm)	458
Color (PCU)	5 U	**Bacteria Data**	
Ammonia (mg/L)	0.01 U	*Escherichia Coli* (col/100 mL)	2
Nitrate-Nitrite (mg/L)	4.3	*Enterococci* (col/100 mL)	1 K
TKN (mg/L)	0.06 U	Fecal Coliforms (col/100 mL)	1 K
Total Phosphorus (mg/L)	0.065	Total Coliforms (col/100 mL)	10

"U"=Below detection limit; "K"=Actual value is < value given

Figure 3: SCI Scores Over Time



FOR MORE INFORMATION, CONTACT:
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