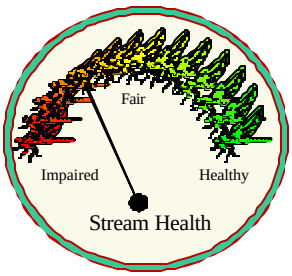


EcoSummary

Fanning Springs
10/10/2001

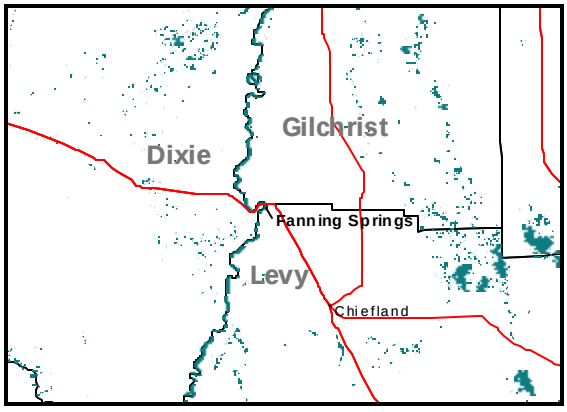


Background

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 (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 10, 2001. 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 (Figure 2). Habitat assessment, qualitative periphyton sampling, and benthic invertebrate stream condition index (SCI) sampling was conducted. SCI scores for Fanning Springs over time are shown in Figure 3.

Figure 1: Overview Map of the Fanning Springs Area



Results

Nitrate-nitrite concentration (4 mg/L) in Fanning Springs was much higher than the values found in 95% of Florida streams (Figure 2). Elevated nitrate-nitrite levels in Fanning Springs are related to nitrogen loading in the recharge basin (mostly fertilizer aplication). Ammonia and TKN concentrations were both below detection limits. The total phosphorus level (0.066 mg/L) was lower than that found in 50% of Florida streams.

The overall habitat assessment score (100) was in the sub-optimal range. Substrate diversity, substrate availability, and habitat smothering were parameters of concern. *Enterococci* and *Escherichia coli* concentrations complied with 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 19 for Fanning Springs was in the "poor" range, a decrease from the previous sampling (Figure 3). The periphyton community was dominated by diatoms, with some blue-green and green taxa.). Based on species level data, the algal community present was indicative of nutrient enriched conditions.

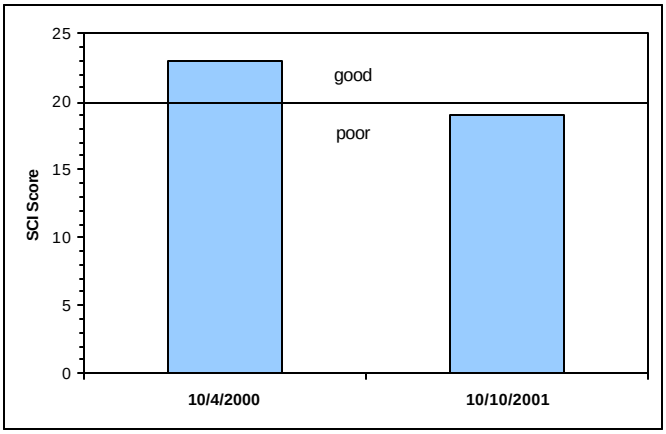
In conclusion, elevated nitrate-nitrite levels, a eutrophic algal community, a poor SCI score (probably related to overall lack of useable habitat) were the issues of concern in Fanning Springs.

Figure 2: Data Table

FANNING SPRINGS			
Sampling Date		10/10/2001	
Macroinvertebrate Data		**Periphyton Data**	
SCI Score	19	% Bacillariophyceae	85.14
SCI Evaluation	poor	% Cyanophyceae	11.69
Number of Taxa	22	% Chlorophyceae	2.84
EPT Index	4	Dominant Taxon	*Eunotia*
Florida Index	11	% Dominant Taxon	44.41
% Dominant Taxon	39.5	**Physical-Chemical Data**	
% Diptera	25.21	Total Habitat Assessment Score	100
Total Numberof Chironomidae	8	Temperature (deg. C)	22.4
% Filter-Feeders	1.26	pH	7.62
Chemistry Data		Dissolved Oxygen (mg/L)	2.1
Turbidity (NTU)	0.05 U	Specific Conductance (umhos/cm2)	407
Color (PCU)	5 U	**Bacteria Data**	
Ammonia (mg/L)	0.01 U	*Escherichia Coli* (col/100 mL)	4 Q
Nitrate-Nitrite (mg/L)	4 J	*Enterococci* (col/100 mL)	1 K,Q
TKN (mg/L)	0.06 U	Fecal Coliforms (col/100 mL)	2 Q
Total Phosphorus (mg/L)	0.066	Total Coliforms (col/100 mL)	40 Q

"U"=Below detection limit; "J"=Estimated value; "Q"=Outside holding time; "K"=Actual value is < value given

Figure 3: SCI Scores Over Time



FOR MORE INFORMATION, CONTACT:
Amy Bennett, FDEP Environmental Assessment Section
2600 Blair Stone Road MS#6511 Tallahassee, FL 32399-2400 (850) 921-9730 Amy.Bennett@dep.state.fl.us