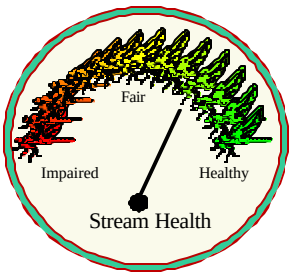
EcoSummary

Fanning Springs
10/04/00



Background

Florida DEP's Division of Recreation and Parks selected Fanning Springs, as well as springs from seven 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 is located in Fanning Springs State Park 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.

Baseline samples were taken at all eight park locations in October 2000. Water chemistry samples were taken for ammonia, nitrate-nitrite, total Kjeldahl nitrogen (TKN), total phosphorus, color, turbidity, *Enterococci*, *Escherichia coli*, fecal coliform, and total coliform analysis; see Figure 2. Habitat assessment, qualitative periphyton sampling, and benthic invertebrate stream condition index (SCI) sampling were conducted.

Results

The nitrate-nitrite concentration (4 mg/L) at the sampling site was extremely elevated, measured to be much higher than the values found in 95% of Florida streams (1.05 mg/L); see Figure 2. The elevated nitrate-nitrite level in Fanning Springs is related to nitrogen loading in the recharge basin (mostly inorganic fertilizers applied to pasture and crops). Ammonia and total Kjeldahl nitrogen concentrations were below detection limits (see Figure 2). The total phosphorus concentration (0.065 mg/L) was lower than that found in 60% of Florida streams (0.10 mg/L); see Figure 2. The overall habitat assessment score (119) was in the high suboptimal range; the weak points in the habitat assessment were water velocity, substrate availability, and riparian buffer zone width on the right bank. *Enterococci* and *Escherichia coli* levels were below the EPA single-sampling guideline values for "moderately used full body contact recreation areas." Fecal and total coliform levels were below the Class III water body threshold values. The periphyton community in Fanning Springs was dominated by diatoms. The particular taxa found were indicative of eutrophic conditions, which was not surprising given the nutrient enrichment in Fanning Springs. The stream condition index (SCI) score of 23 for Fanning Springs was in the good range. Thus, the only parameter of concern at the Fanning Springs site for the October 2000 sampling was elevated nitrate-nitrite and its associated effects of the algae community.

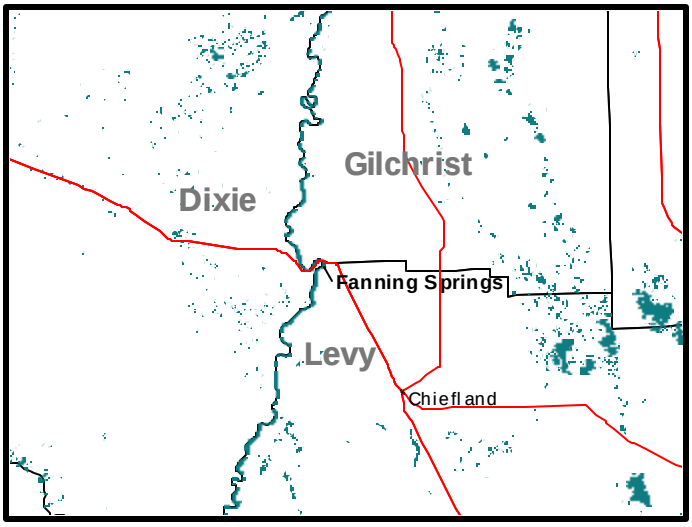


Figure 1: Overview Map of the Fanning Springs Area

Figure 2: Data Table

FANNING SPRINGS			
Station		Fanning Springs	
Station Nick Name		FANNING	
STORET		SPRINGS002	
Sampling Date		10/4/00	
Macroinvertebrate Parameters		**Periphyton Parameters**	
SCI	23	Number of Taxa	27
SCI Evaluation	good	% Bacillariophyceae	94.6
SCI Region	peninsula	% Chlorophyceae	1.12
Number of Taxa	31	% Cyanophyceae	4.1
Number of Ephemeroptera	1	% Dinophyceae	0
Number of Plecoptera	0	% Dominant Taxon	32.96
Number of Trichoptera	1	**Physical-Chemical Data**	
EPT Index	2	Habitat Assessment	119
% Dominant Taxon	31.86	Sample Depth (m)	0.1
Florida Index	5	Specific Conductivity (umho/cm)	no data
% Diptera	19.47	Dissolved Oxygen (mg/L)	no data
Number of Chironomidae	3	pH (SU)	no data
Number of Orthocladiinae	6	Temperature (deg. C)	no data
Total Number of Chironomidae	9	**Chemistry Data**	
% Filter-Feeders	1.77	Ammonia (mg/L)	0.01 U
Bacteria Parameters		Nitrate-Nitrite (mg/L)	4
Enterococci (col/100 mL)	74 Q	TKN (mg/L)	0.06 U
Escherichia coli (col/100 mL)	88 Q	Total Phosphorus (mg/L)	0.065
Fecal Coliforms (col/100 mL)	76 Q	Color (PCU)	10
Total Coliforms (col/100 mL)	310 Q	Turbidity (NTU)	0.35

"U"- Below Detection Limit; "I"- Below Quantitation Limit; "Q"- Information Only

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