EcoSummary

Ichetucknee Springs

04/09/2002

Background

Florida DEP's Division of Recreation and Parks selected Ichetucknee Springs 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. Ichetucknee Springs State Park is located in Suwannee and Columbia Counties; see Figure 1. Ichetucknee Springs is a Floridan Aquifer-dominated system and is known for its recreational and aesthetic qualities.

In April 2002, water chemistry samples were taken for ammonia, nitrate-nitrite, total Kjeldahl nitrogen, total phosphorus, color, turbidity, *Enterococci*, *Escherichia coli*, fecal coliform, and total coliform analysis; see Figure 2. Habitat assessment, qualitative periphyton, and benthic invertebrate stream condition index (SCI) sampling were also conducted.

Results

The nitrate-nitrite concentration continued to be elevated (0.45 mg/L), exceeding the values found in 85% of other Florida streams; see Figure 2. The total phosphorus (0.056 mg/L) was relatively low compared with other Florida streams. Ammonia, and total Kjeldal nitrogen concentrations were again below detection limit (see figure 2). As found in previous samplings, the density of *Enterococci* (102 CFU/100mL) was above the EPA single-sampling guideline value of 61 CFU/100mL for "designated beach areas". However, it has slightly decreased from the October 2001 value of 130 CFU/100mL. It is possible that the source of the *Enterococci* may be self-reproducing populations in the sediments or input from wildlife. *Escherichia coli* densities were below the EPA single-sampling guideline value for "a designated beach area". Fecal and total coliform levels complied with Class III water quality standards. The overall habitat assessment score (152) was in the optimal range (>120), while the SCI score (23) was in the good range. The SCI score has increased from the last sampling event (see figure 3). Diatoms with some blue-green taxa dominated the periphyton community in Ichetucknee Springs. The particular taxa found were indicative of eutrophic conditions.

In conclusion, monitoring results continue to indicate that Ichetucknee Springs remains characterized by elevated nitrates, moderately high *Enterococci* densities, and a periphyton community representing eutrophic conditions.

Figure 1: Overview Map of the Ichetucknee Springs Area

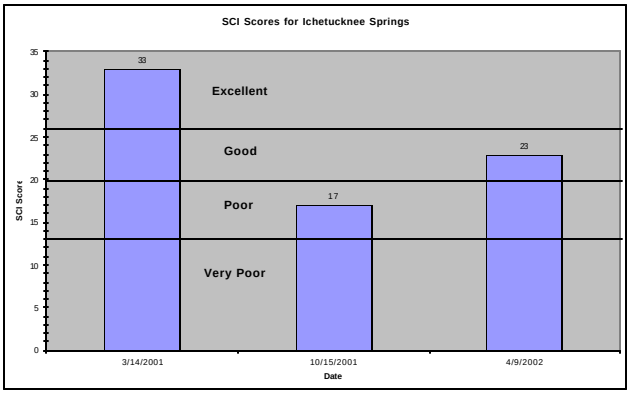


Figure 2: Data Table

Ichetucknee Springs			
STORET		SPRINGS004	
Sampling Date		4/9/2002	
Macroinvertibrate Parameters		**Periphyton Parameters**	
SCI	23	% Bacillariophyceae	71.78
SCI Evaluation	Good	% Cyanophyceae	25.5
Number of Taxa	29	% Chlorophyceae	2.72
EPT Index	4	Dominant taxon	*Synedra*
FL Index	14	Percent Dominant taxon	19.63
% Dominant Taxon	29.63	**Physical-Chemical Data**	
% Diptera	37.96	Habitat Assessment	152
Total number of Chironomidae	12	Specific Conductivity (umhos/cm)	322
% Filter-Feeders	6.02	Dissolved Oxygen (mg/L)	4.55
Chemistry Data		pH (SU)	7.3
Ammonia (mg/L)	0.01U	Temperature (deg C)	21.2
Nitrate-Nitrite (mg/L)	0.45	**Bacteria Parameters**	
TKN (mg/L)	0.06U	*Enterococci* (col/100mL)	102
Total Phosphorus (mg/L)	0.056	*Escherichia coli* (col/100mL)	122
Color (PCU)	5U	Fecal Coliforms (col/100 mL)	130
Turbidity (NTU)	0.3	Total Coliforms (col/100mL)	1100

"U"- Value Reported is the Minimum Detection Limit

Figure 3: SCI Scores



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