EcoSummary

Ichetucknee Springs

06/05/03

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 June, 2003, 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. Samples were collected approximately two miles south of the boil within the park limits.

Results

The nitrate-nitrite concentration remains elevated (0.34 mg/L), exceeding the values found in 80% of other Florida streams; see Figure 2. The total phosphorus (0.068 mg/L), ammonia (0.012 mg/L), and total Kjeldal nitrogen (0.095 mg/L) concentrations however, remain relatively low. The density of *Enterococci* (67 CFU/100mL) has increased since the January 2003 sampling event, exceeding the EPA single-sampling guideline value of 61 CFU/100mL for "designated beach areas". Some species of *Enterococci* are known to be free-living in warm waters; the applicability of the above guideline in Florida waters is currently under investigation. *Escherichia coli* densities (56 CFU/100mL) were below the EPA guideline value for "a designated beach area". Fecal and total coliform levels complied with Class III water quality standards. The overall habitat assessment score (150) was in the optimal range (>120). The SCI score (29) has increased since the January 2003 sampling, now scoring in the "excellent" range (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, results continue to indicate that Ichetucknee Springs remains characterized by high nitrate-nitrite levels and a periphyton community representing eutrophic conditions. *Enterococci* densities have increased since the January 2003 sampling event and now exceed the EPA single-sampling guidelines. The invertebrate community is currently healthy.

Figure 1: Overview Map of the Ichetucknee Springs Area

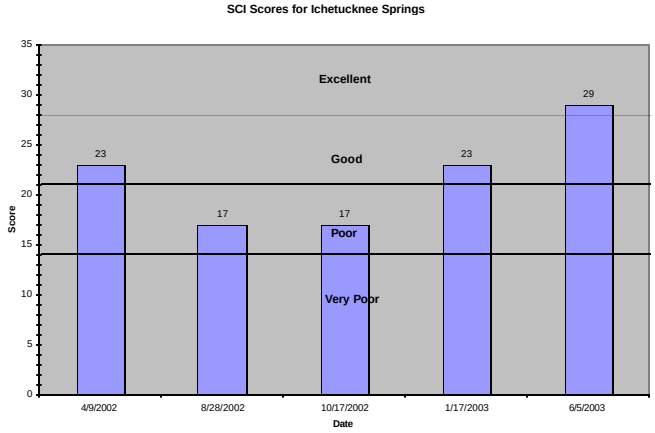


Figure 2: Data Table

Ichetucknee Springs			
Sampling Date		6/5/2003	
Macroinvertibrate Parameters		**Periphyton Parameters**	
SCI	29	% Bacillariophyceae	83.06
SCI Evaluation	Excellent	% Cyanophyceae	14.62
Number of Taxa	34	% Chlorophyceae	2.33
EPT Index	6	Dominant taxon	*Navicula minima*
FL Index	17	Percent Dominant taxon	14.29
% Dominant Taxon	24.64	**Physical-Chemical Data**	
% Diptera	38.41	Habitat Assessment	150
Total number of Chironomidae	13	Specific Conductivity (umhos/cm)	269
% Filter-Feeders	15.58	Dissolved Oxygen (mg/L)	6
Chemistry Data		pH (SU)	7.47
Ammonia (mg/L)	0.012 I	Temperature (deg C)	21.7
Nitrate-Nitrite (mg/L)	0.34	**Bacteria Parameters**	
TKN (mg/L)	0.095 I	*Enterococci* (col/100mL)	67 AO
Total Phosphorus (mg/L)	0.068	*Escherichia coli* (col/100mL)	56 AQ
Color (PCU)	5	Fecal Coliforms (col/100 mL)	41 AQ
Turbidity (NTU)	0.4	Total Coliforms (col/100mL)	58 AQ

"A"- Mean of Two or More Determinations; "I"- Below Quantitation Limit and Greater Than Detection Limit; "Q"- Beyond Holding Time

Figure 3: SCI Scores



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