EcoSummary

Ichetucknee Springs

1/17/2003

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 January 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 (0.4 mg/L), exceeding the values found in 85% of other Florida streams; see Figure 2. The total phosphorus (0.065 mg/L), ammonia, and total Kjeldal nitrogen concentrations have also remained low (see figure 2). The density of *Enterococci* (2 CFU/100mL) has decreased below the EPA single-sampling guideline value of 61 CFU/100mL for "designated beach areas". It has been steadily decreasing since the April 2002 value of 102 CFU/100mL. 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 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 (155) was in the optimal range (>120). The SCI score (23) has slightly increased since the October 2002 sampling, now scoring in the "good" 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, monitoring results continue to indicate that Ichetucknee Springs remains characterized by high nitrate-nitrite levels and a periphyton community representing eutrophic conditions. However, for unknown reasons, the *Enterococci* densities are now below the EPA single-sampling guidelines.

Figure 1: Overview Map of the Ichetucknee Springs Area

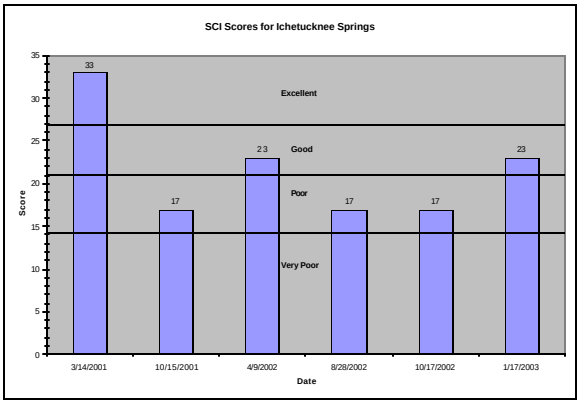


Figure 2: Data Table

Ichetucknee Springs			
Sampling Date		1/17/2003	
Macroinvertibrate Parameters		**Periphyton Parameters**	
SCI	23	% Bacillariophyceae	99.04
SCI Evaluation	Good	% Cyanophyceae	0.64
Number of Taxa	23	% Chlorophyceae	0.32
EPT Index	5	Dominant taxon	*Diatomaceae/Fragilariaceae*
FL Index	10	Percent Dominant taxon	35.05
% Dominant Taxon	36.89	**Physical-Chemical Data**	
% Diptera	24.27	Habitat Assessment	155
Total number of Chironomidae	9	Specific Conductivity (umhos/cm)	339
% Filter-Feeders	7.28	Dissolved Oxygen (mg/L)	7
Chemistry Data		pH (SU)	7.8
Ammonia (mg/L)	0.02 I	Temperature (deg C)	19.9
Nitrate-Nitrite (mg/L)	0.4	**Bacteria Parameters**	
TKN (mg/L)	0.063 I	*Enterococci* (col/100mL)	2 O
Total Phosphorus (mg/L)	0.065	*Escherichia coli* (col/100mL)	30 Q
Color (PCU)	5 UQ	Fecal Coliforms (col/100 mL)	40 Q
Turbidity (NTU)	0.25 Q	Total Coliforms (col/100mL)	130 Q

"U"- Below Detection Limit; "I"- Below Quantitation Limit; "Q"- Beyond Holding Time

Figure 3: SCI Scores



FOR MORE INFORMATION, CONTACT:
Shannon Gerardi, FDEP Environmental Assessment Section
2600 Blair Stone Road MS#6511 Tallahassee, FL 32399-2400 (850) 245-8071 shannon.gerardi@dep.state.fl.us