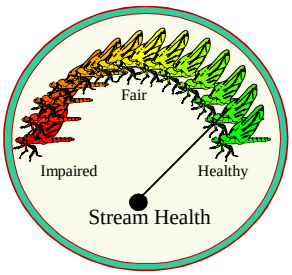


EcoSummary

Ichetucknee Springs

1/29/2004



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 the 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.

Samples were collected from Ichetucknee Springs on January 29, 2004. Water chemistry samples were taken for ammonia, nitrate-nitrite, total Kjeldahl nitrogen (TKN), total phosphorus, *Escherichia coli*, *Enterococci*, fecal coliform, and total coliform analyses; see Figure 2. Habitat assessment, qualitative periphyton sampling, and benthic invertebrate stream condition index (SCI) sampling were conducted. SCI scores over time are shown in Figure 3. Samples were collected approximately two miles south of the boil within the park limits.

Figure 1: Overview Map of the Ichetucknee Springs Area



Results

The nitrate-nitrite concentration in Ichetucknee Springs remained elevated (0.48 mg/L), exceeding the values found in 80% of Florida streams; see Figure 2. The total phosphorus (0.1 mg/L) level was higher than the values found at Ichetucknee Springs over the past year. The ammonia concentration was below detection limits, and TKN concentration was below practical quantitation limits.

The density of *Enterococci* (200 CFU/100 mL) was above the EPA single-sampling guideline value of 61 CFU/100 mL 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* density (92 CFU/100 mL) was below the EPA single-sampling guideline value of 235 CFU/100 mL for "a designated beach area". Fecal and total coliform levels complied with Class III water quality standards.

The overall habitat assessment score (143) at Ichetucknee Springs was in the optimal range (>120). Diatoms, with some blue-green taxa, dominated the periphyton community.

The stream condition index (SCI) measures factors that affect the health and diversity of the benthic macroinvertebrate community. The SCI score (29) was in the "excellent" range; see Figure 3.

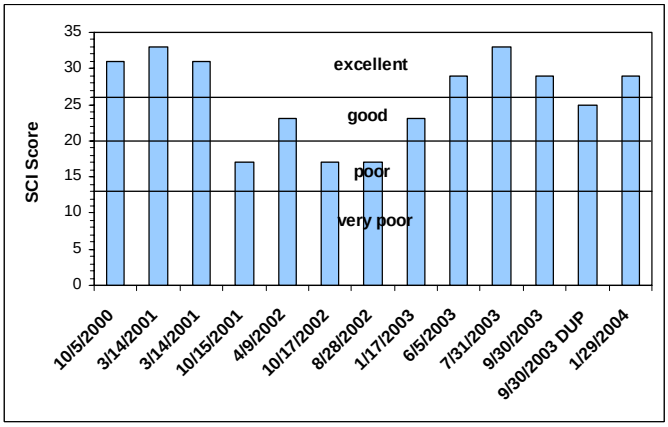
In conclusion, an elevated nitrate-nitrite concentration continued to be a parameter of concern in Ichetucknee Springs. The invertebrate community indicated that healthy ecological conditions prevail.

Figure 2: Data Table

ICHETUCKNEE SPRINGS			
Sampling Date		1/29/2004	
Macroinvertebrate Data		**Periphyton Data**	
SCI Score	29	% Bacillariophyta	85.85
SCI Evaluation	Excellent	% Cyanophycophyta	13.83
Number of Taxa	33	% Chlorophycota	0.32
EPT Index	5	Dominant Taxon	*Nitzschia*
Florida Index	15	% Dominant Taxon	12.22
% Dominant Taxon	20	**Physical-Chemical Data**	
% Diptera	63	Habitat Assessment Score	143
Number of Chironomidae	12	Temperature (deg. C)	19.3
% Filter-Feeders	31	pH	7.8
Chemistry Data		Dissolved Oxygen (mg/L)	5.8
Turbidity (NTU)	0.75	Specific Conductance (umhos/cm)	320
Color (PCU)	5	**Bacteria Data**	
Ammonia (mg/L)	0.01 U	*Escherichia coli* (col/100 mL)	92 Q
Nitrate-Nitrite (mg/L)	0.48	*Enterococci* (col/100 mL)	200 Q
TKN (mg/L)	0.11 I	Fecal Coliforms (col/100 mL)	180 B,Q
Total Phosphorus (mg/L)	0.1	Total Coliforms (col/100 mL)	500 Q

"U"=Below detection limit; "I"=Below practical quantitation limit; "Q"=Outside of holding time; "B"=Results based on colony counts outside the acceptable range

Figure 3: Stream Condition Index Scores Over Time



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