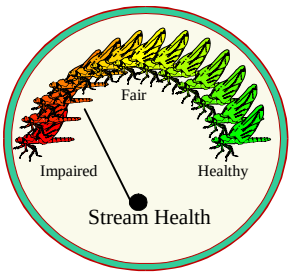


EcoSummary

Ichetucknee Springs
11/18/2004



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 known for its recreational and aesthetic qualities.

Samples were collected from Ichetucknee Springs on November 18, 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 and benthic macroinvertebrate stream condition index (SCI) sampling were conducted. 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 (0.46 mg/L) was higher than the values found in 80% of Florida streams (0.35 mg/L). The total phosphorus concentration (0.051 mg/L) was in the average range for Florida streams. The ammonia concentration (0.03 mg/L) and the TKN concentration (0.074) were low, indicating no potential problems associated with these parameters.

The total habitat assessment score (145) was in the "optimal" range. *Enterococci* and *Escherichia coli* concentrations were below the EPA single-sample guideline values of 61 CFU/100 mL and 235 CFU/100 mL, respectively, for "designated beach areas." Fecal and total coliform levels complied with Class III water quality standards.

The SCI was recently recalibrated in order to make it a more effective tool for evaluating ecological health of streams. The sampling method remained the same; only the index calculation was changed. The recalibrated SCI tends to produce a more stringent evaluation, since two poorly performing metrics from the old SCI were discarded (% Diptera and number of chironomid taxa). Five additional metrics correlated with human disturbance were added, for a new total of ten metrics. The ten metrics are: total taxa, Ephemeroptera taxa, Trichoptera taxa, percent filterers, long-lived taxa, clinger taxa, percent dominance, percent Tanytarsini, sensitive taxa, and percent very tolerant taxa. More details can be found in the FDEP Standard Operating Procedures, LT 7200. The recalibrated SCI went into effect June 8, 2004, when the FDEP Quality Assurance Rule was finalized. SCI samples collected after that time may yield different results from prior evaluations.

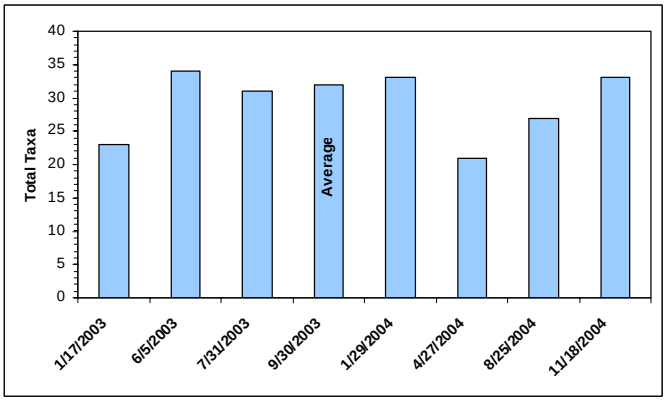
The SCI score of 44 for Ichetucknee Springs was in the "poor" range. This score is up from the previous SCI (36), which was also rated as "poor". Although the SCI evaluation was recalibrated, the macroinvertebrate assemblage, as measured by overall taxa richness, has not significantly changed over the past two years; see Figure 3. In conclusion, an elevated nitrate-nitrite concentration and poor macroinvertebrate community health were the parameters of concern in Ichetucknee Springs.

Figure 2: Data Table

ICHETUCKNEE SPRINGS			
Sampling Date	11/18/2004	**Physical-Chemical Data**	
Macroinvertebrate Data		Habitat Assessment Score	145
SCI Score	44	Dissolved Oxygen (mg/L)	5.5
SCI Evaluation	Poor	Temperature (deg. C)	20.6
Chemistry Data		pH	7.7
Turbidity (NTU)	0.25	Specific Conductance (umhos/cm)	307
Color (PCU)	5 U	**Bacteria Data**	
Ammonia (mg/L)	0.03	*Escherichia coli* (col/100 mL)	44 AB
Nitrate-Nitrite (mg/L)	0.46	*Enterococci* (col/100 mL)	31 AB
TKN (mg/L)	0.074 I	Fecal Coliforms (col/100 mL)	42 A
Total Phosphorus (mg/L)	0.051 I	Total Coliforms (col/100 mL)	197 AB

"A"=Average value of more than one determination; "U"=Below detection limit;
"B"=Based on colony counts outside the acceptable range;
"I"=Below practical quantitation limit;

Figure 3: Total Number of Macroinvertebrate Taxa Over Time



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