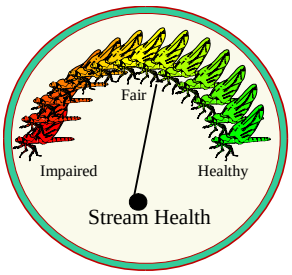


EcoSummary

Ichetucknee Springs
1/25/2006



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 January 25, 2006. 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 headspring within the park limits.

Figure 1: Overview Map of the Ichetucknee Springs Area



Results

The nitrate-nitrite concentration in Ichetucknee Springs (0.58 mg/L) was higher than the values found in 80% of Florida streams (0.35 mg/L). The total phosphorus concentration (0.076 mg/L) was in the average range for Florida streams. The ammonia concentration (0.01 mg/L) and the TKN concentration (0.08) were below the detection limit, indicating no potential problems associated with these parameters.

The total habitat assessment score (134) 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.

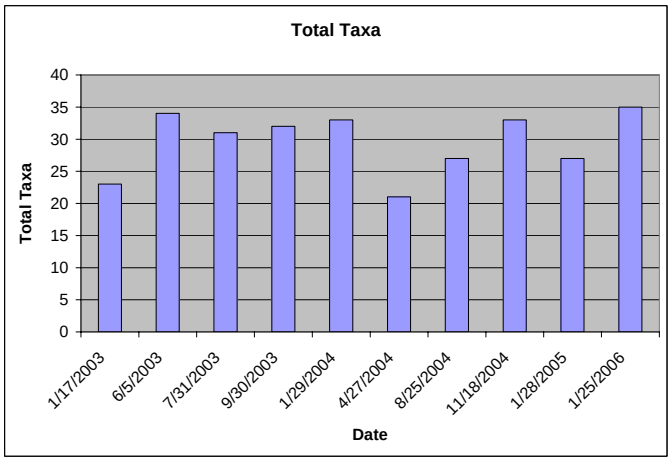
The SCI score of 56 suggests this portion of the Ichetucknee River is similar to many other minimally disturbed reference sites in Florida. This score is similar to the previous SCI value of 57. Macroinvertebrate taxa richness has not significantly changed over the past two years; see Figure 3. In conclusion, an elevated nitrate-nitrite concentration continued to be a parameter of concern in Ichetucknee Springs.

Figure 2: Data Table

ICHETUCKNEE SPRINGS			
Sampling Date	1/25/2006	**Physical-Chemical Data**	
Macroinvertebrate Data		Habitat Assessment Score	134
SCI Score	56	Dissolved Oxygen (mg/L)	NA
SCI Evaluation	Fair	Temperature (deg. C)	NA
Chemistry Data		pH	NA
Turbidity (NTU)	1.1	Specific Conductance (umhos/cm)	NA
Color (PCU)	5	**Bacteria Data**	
Ammonia (mg/L)	0.01 U	*Escherichia coli* (col/100 mL)	232 BQ
Nitrate-Nitrite (mg/L)	0.58	*Enterococci* (col/100 mL)	26 BQ
TKN (mg/L)	0.08 U	Fecal Coliforms (col/100 mL)	242 BQ
Total Phosphorus (mg/L)	0.076	Total Coliforms (col/100 mL)	244 BQ

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

Figure 3: Total Number of Macroinvertebrate Taxa Over Time



FOR MORE INFORMATION, CONTACT:
Thomas Deck, FDEP Environmental Assessment Section
2600 Blair Stone Road MS#6511 Tallahassee, FL 32399-2400 (850) 245-8074 thomas.deck @dep.state.fl.us