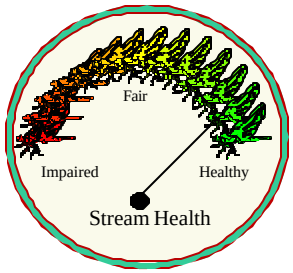
EcoSummary

Sweetwater Creek

1/08/2002



Background

Since 1992, minimally disturbed reference streams have been sampled throughout Florida for the purpose of establishing biological community expectations and identifying specific thresholds for assessing stream health. The Stream Condition Index (SCI) has been the primary assessment method, which consists of collecting 20 D-frame dipnet sweeps (0.5 m in length) of the most productive habitats in a 100 m reach of stream. The organisms are sub-sampled, sorted, and identified to the lowest practical taxonomic level. Seven measurements of invertebrate health are calculated and compared with the expectations established by the reference site sampling. These reference streams are sampled periodically to maintain accurate expectations to which other streams in the same ecoregion are compared. Sweetwater Creek, a tributary of the Apalachicola River, is located in Liberty County, south of Torreya State Park; see Figure 1.

Samples were taken at Sweetwater Creek in January 2002. Water chemistry samples were taken for nitrate-nitrite, total Kjeldahl nitrogen, total phosphorus, total suspended solids, turbidity, *Enterococci*, *Escherichia coli*, total coliform and fecal coliform analysis (see Figure 2). Habitat assessment and benthic invertebrate stream condition index (SCI) sampling were also conducted.

Results and Discussion

Nitrate-nitrite concentrations (0.083 mg/L) at the sampling site were average for Florida streams (Figure 2). Total Kjeldahl nitrogen and total suspended solids were below detection limits. Total phosphorus and turbidity (0.036 mg/L and 4 NTU, respectively) were lower than most Florida streams. *Enterococci* and *Escherichia coli* concentrations (530 and 350 CFU/100 mL, respectively) exceeded the EPA single-sample guideline value 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 standard values. The stream condition index (SCI) score of 33 was in the "excellent" range. The overall habitat assessment score (144) was in the optimal range (>120).

In conclusion, although *Enterococci* and *Escherichia coli* concentrations exceeded proposed EPA guidelines, studies are currently underway to determine the appropriate levels of these indicators in subtropical climates. The healthy invertebrate community continues to indicate that Sweetwater Creek is in excellent condition.

Figure 1: Overview Map of the Sweetwater Creek Area

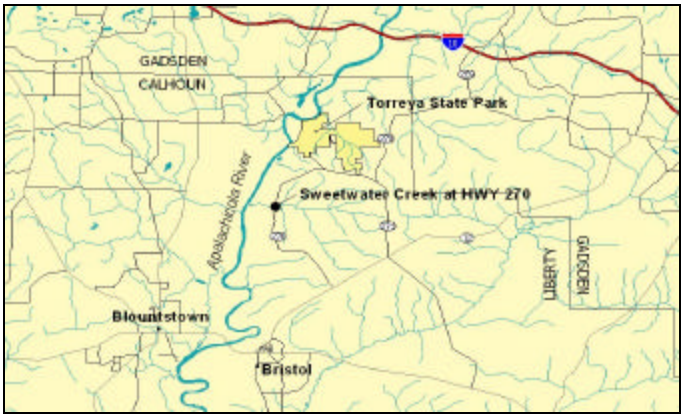
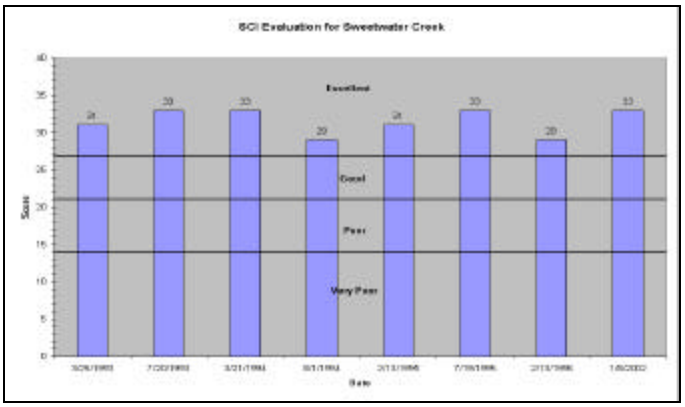


Figure 2: Data Table

Sweetwater Creek			
STORET		31010051	
Sampling Date		1/8/2002	
Macroinvertibrate Parameters		**Chemistry Data**	
SCI	33	Nitrate-Nitrite (mg/L)	0.083
SCI Evaluation	Excellent	TKN (mg/L)	0.12 I
Number of Taxa	42	Total Phosphorus (mg/L)	0.036 I
EPT Index	15	TSS (mg/L)	4 U
FL Index	14	Turbidity	1.3
% Dominant Taxon	12.86	**Physical-Chemical Data**	
% Diptera	24.29	Habitat Assessment	144
Total number of Chironomidae	15	Specific Conductivity (umhos/cm)	23
% Filter-Feeders	17.5	Dissolved Oxygen (mg/L)	12.4
Bacteria Parameters		pH (SU)	7.84
Enterococci (col/100mL)	530	Temperature (deg C)	7.9
Escherichia coli (col/100mL)	350		
Fecal Coliforms (col/100 mL)	550		
Total Coilforms (col/100 mL)	1500		

"I"-Value Reported is Less Than the Minimum Quantitation Limit and Greater Than or Equal to the Minimum Detection Limit; "U"- Value Reported is the Minimum Detection Limit

Figure 3: SCI Evaluation



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