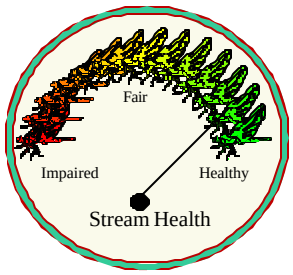
EcoSummary

Crooked 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. Crooked Creek is a reference stream in the Florida panhandle that flows northwest through Gadsden and Liberty Counties into the Apalachicola River; see Figure 1.

Samples were taken at Crooked 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

The nitrate-nitrite concentration (0.094 mg/L) at the sampling site was average for a Florida stream (Figure 2). Total Kjeldahl nitrogen was below the detection limit. Total phosphorus and turbidity (0.12 mg/L and 4.3 NTU, respectively) were slightly elevated, measuring higher than roughly 45-70% of Florida streams, respectively. *Enterococci* and *Escherichia coli* concentrations (1000 and 1400 CFU/mL, respectively) exceeded the EPA single-sample guideline value of 61 CFU/100 mL and 235 CFU/100 mL, respectively, for "designated beach areas". Furthermore, both fecal and total coliform levels (1700 and 4600 CFU/100 mL, respectively) exceeded the Class III water quality standard values of 800 CFU/100 mL and 2400 CFU/100 mL, respectively. The source of the bacteria is not known, but input from wildlife is a potential consideration. However, the stream condition index (SCI) score of 33 was in the "excellent" range. The overall habitat assessment score (149) was in the optimal range (>120).

In conclusion, fecal and total coliform levels exceeded Class III water quality standards. On the other hand, the macroinvertebrate community, as indicated by the excellent SCI score, remains in healthy condition.

Figure 1: Overview Map of the Crooked Creek Area

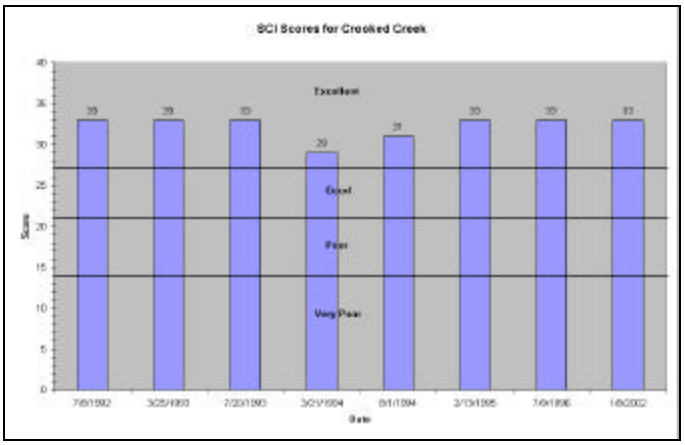


Figure 2: Data Table

Crooked Creek			
STORET	31010050		
Sampling Date	1/8/2002		
Macroinvertibrate Parameters		**Chemistry Data**	
SCI	33	Nitrate-Nitrite (mg/L)	0.094
SCI Evaluation	Excellent	TKN (mg/L)	0.14 I
Number of Taxa	45	Total Phosphorus (mg/L)	0.12
EPT Index	14	TSS (mg/L)	5 I
FL Index	29	Turbidity (NTU)	4.3
% Dominant Taxon	10.05	**Physical-Chemical Data**	
% Diptera	48.68	Habitat Assessment	149
Total number of Chironomidae	20	Specific Conductivity (umhos/cm)	24
% Filter-Feeders	23.54	Dissolved Oxygen (mg/L)	11.6
Bacteria Parameters		pH (SU)	7.42
Enterococci (col/100mL)	1000	Temperature (deg C)	5.99
Escherichia coli (col/100mL)	1400		
Fecal Coliforms (col/100 mL)	1700		
Total Coliforms (col/100 mL)	4600		

"I"- Less Than the Minimum Quantitation Limit and Greater Than or Equal to the Minimum Detection Limit.

Figure 3: SCI Evaluation



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