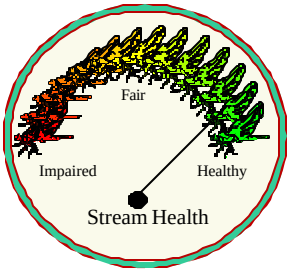
EcoSummary

Flat 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. Flat Creek is a reference stream in the Florida panhandle that flows west through Gadsden County into the Apalachicola River.

Samples were taken at Flat 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

Nitrate-nitrite concentrations (0.4 mg/L) at the sampling site were elevated, measuring higher than concentrations found in roughly 80% of Florida streams (Figure 2). Total Kjeldahl nitrogen was below the detection limit. Total phosphorus and turbidity (0.11mg/L and 8.4 NTU, respectively) were slightly elevated, measuring higher than roughly 40-85% of Florida streams, respectively. *Enterococci* and *Escherichia coli* concentrations (3800 and 930 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 (125) 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 Flat Creek is in excellent condition.

Figure 1: Overview Map of the Flat Creek Area

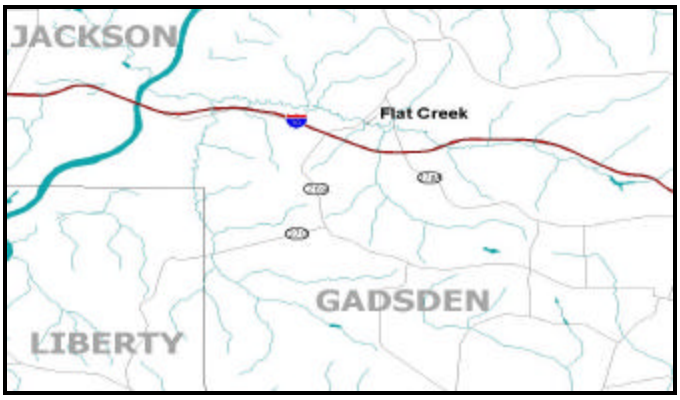
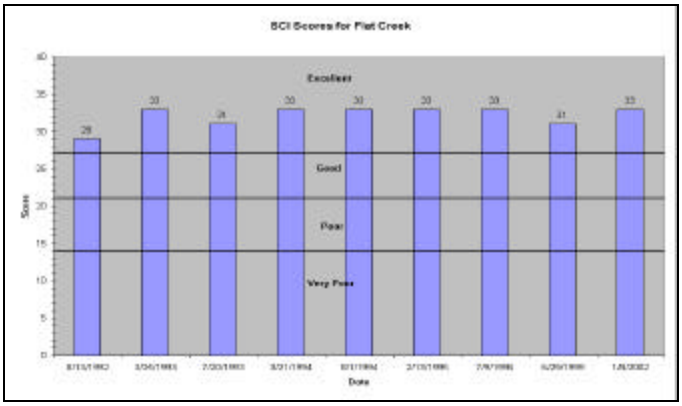


Figure 2: Data Table

Flat Creek			
STORET		31010142	
Sampling Date		1/8/2002	
Macroinvertibrate Parameters		**Chemistry Data**	
SCI	33	Nitrate-Nitrite (mg/L)	0.4
SCI Evaluation	Excellent	TKN (mg/L)	0.21
Number of Taxa	34	Total Phosphorus (mg/L)	0.11
EPT Index	11	TSS (mg/L)	10 I
FL Index	23	Turbidity (NTU)	8.4 A
% Dominant Taxon	16.33	**Physical-Chemical Data**	
% Diptera	36.73	Habitat Assessment	125
Total number of Chironomidae	11	Specific Conductivity (umhos/cm)	47
% Filter-Feeders	22.45	Dissolved Oxygen (mg/L)	11.4
Bacteria Parameters		pH (SU)	7.69
Enterococci (col/100mL)	3800 Q	Temperature (deg C)	5.17
Escherichia coli (col/100mL)	930 Q		
Fecal Coliforms (col/100 mL)	800 Q		
Total Coliforms (col/ 100 mL)	1600 Q		

"Q"- Sample Held Beyond Normal Holding Time; "A"- The Mean of Two or More Determinations; "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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