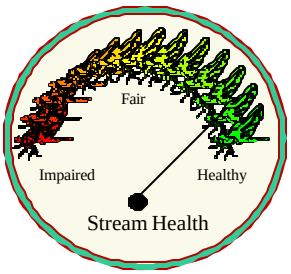
EcoSummary

Mule Creek @ SR12

1/10/02



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. Mule Creek, which drains into Telogia Creek, is located in Liberty County north of State Road 12 and east of Torreya State Park.

Mule Creek was sampled on January 10, 2002 as part of routine reference stream monitoring. Stream Condition Index (SCI) sampling was conducted along with habitat assessment; see Figure 2. Water chemistry samples were also taken for nitrate-nitrite, total Kjeldahl nitrogen (TKN), total phosphorus, turbidity, *Enterococci*, *Escherichia coli*, total coliform, and fecal coliform analysis; see Figure 2.

Results and Discussion

The nitrate-nitrite concentration (0.075 mg/L) at the sampling site was average for a Florida stream, although it was higher than the previous sampling (0.020 mg/L on 7/9/96). *Enterococci* and *Escherichia coli* concentration exceeded the EPA single-sample maximum allowable density for a designated beach area (61CFU/100 mL and 235 CFU/100 mL respectively). Fecal and total coliform levels complied with Class III water quality standard values. The Stream Condition Index (SCI) scored in the "excellent" category. The overall habitat assessment score (134) was in the optimal range (>120).

In conclusion, although the *Enterococci* and *Escherichia coli* exceeded proposed EPA guidelines, studies are currently underway to determine the appropriate levels of these indicators in subtropical climates. The high scores on the Stream Condition Index and Habitat Assessment continue to indicate that Mule Creek is a healthy aquatic ecosystem.

Figure 1: Overview Map of the Mule Creek Area

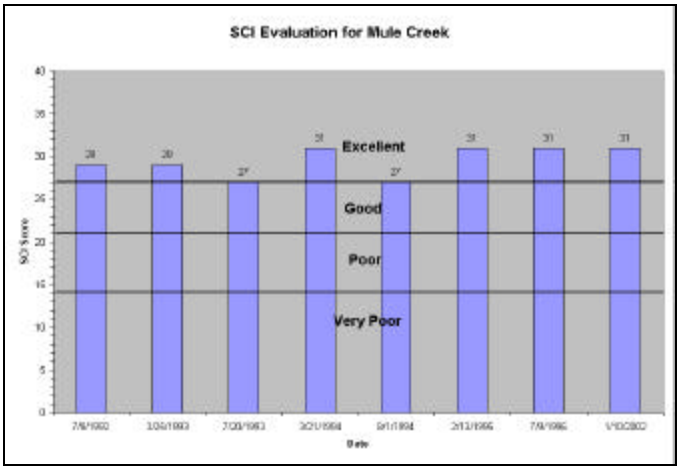


Figure 2: Data Table

Mule Creek			
Sampling Date		1/10/2002	
Macroinvertibrate Parameters		Chemistry Data	
SCI	31	Ammonia (mg/L)	na
SCI Evaluation	Excellent	Nitrate-Nitrite (mg/L)	0.075
Number of Taxa	29	TKN (mg/L)	0.22 A
EPT Index	7	Total Phosphorus (mg/L)	0.027 I
FL Index	18	Color (PCU)	na
% Dominant Taxon	21.2	Turbidity (NTU)	4
% Diptera	32.3	TSS (mg/L)	4 U
Total number of Chironomidae	12	Physical-Chemical Data	
% Filter-Feeders	7.58	Habitat Assessment	134
Bacteria Parameters		Specific Conductivity (umhos/cm)	25
Enterococci (col/100mL)	620	Dissolved Oxygen (mg/L)	11.4
Escherichia coli (col/100mL)	390	pH (SU)	4.2
Fecal Coliforms (col/100 mL)	190	Temperature (deg C)	7.8
Total Coliforms (col/100 mL)	1100		

"I"-Value between the laboratory detection limit and laboratory practical quantitation limit; "U"-Below detection limit; "A"-Value reported is the mean of two or more determinations.

Figure 3: SCI Data



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