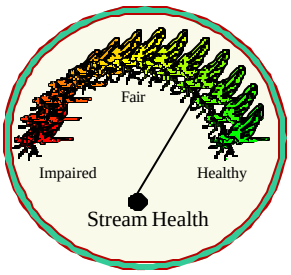
EcoSummary

Waddell's Mill Creek

8/22/02



Background

Waddell's Mill Creek was sampled on August 22, 2002 for Total Maximum Daily Load (TMDL) purposes. Water chemistry samples were taken for nitrate-nitrite, total Kjeldahl nitrogen (TKN), total phosphorus, turbidity, total suspended solids (TSS), biological oxygen demand (BOD), *Enterococci*, *Escherichia coli*, total coliform, and fecal coliform analysis; see Figure 2. The Stream Condition Index (SCI) was the primary assessment method for the biological community, 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 reference site sampling. Habitat assessment was also conducted on Waddell's Mill Creek. Waddell's Mill Creek, which is a tributary of the Chipola River, is located in Jackson County (see Figure 1).

Results and Discussion

Nitrate-nitrite concentration (1.1 mg/L) at the sampling site was elevated, measuring higher than concentrations found in roughly 95% of Florida streams. Turbidity was also slightly elevated (4.9 NTU) measuring higher than 70% of Florida streams. *Enterococci* exceeded the EPA single-sample maximum allowable density for a designated beach area (61CFU/100mL). The applicability of this bacterial indicator in warm Florida waters is still under investigation. Fecal coliform and total coliform levels complied with Class III water quality standards while *Esherichia coli* complied with the EPA's recommended standard. The overall habitat assessment score (126) was in the optimal range (>120). The Stream Condition Index (SCI) scored in the "good" category (23 points).

In conclusion, while the nitrate-nitrite concentration was elevated, it did not appear to have significant adverse affects on the invertebrate community, as evidenced by the SCI score. Habitat assessment results (lack of algal smothering, etc.) also suggested that Waddell's Mill Creek is a healthy aquatic ecosystem.

Figure 1: Overview Map of the Waddell's Mill Creek Area



Figure 2: Data Table

Waddell's Mill Creek			
Station Nick Name		WADELCRK	
STORET		31020036	
Sampling Date		8/22/2002	
Macroinvertebrate Parameters		**Physical Chamical**	
SCI	23	Habitat Assessment	126
SCI Evaluation	Good	Specific Conductivity (umho/cm)	285
Number of Taxa	34	Dissolved Oxygen (mg/L)	6.8
EPT Index	7	pH (SU)	7.5
% Dominant Taxon	27.27	Temperature (deg C)	25.1
Florida Index	8	**Chemistry Data**	
% Diptera	14.55	Ammonia (mg/L)	0.036
Total Number Chironomidae	7	Nitrate-Nitrite (mg/L)	1.1
% Filter-Feeders	0.91	TKN (mg/L)	0.27 A
Bacteria Parameters		Total Phosphorus (mg/L)	0.033 I
Enterococci (col/100mL)	280	Color (PCU)	15
Escherichia (col/100mL)	180	Turbidity (NTU)	4.9 A
Fecal Coliforms (col/100mL)	250	TSS (mg/L)	7 I
Total Coliforms (col/100mL)	2100	BOD (mg/L)	0.2

"I"-Between method detection limit and practical quantitation limit;
"A"-Value reported is the mean of two or more determinations.

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