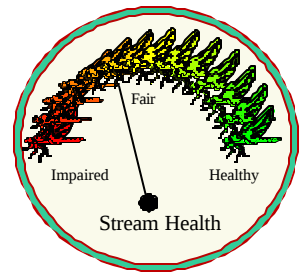




EcoSummary

Little Alapaha River at SR 51

01/23/01



Background

Florida DEP selected the Little Alapaha River, as well as five other streams that flow across the Georgia-Florida line, for biological and water quality evaluation. Data from these efforts will be used for documenting potential out-of-state pollution sources for the Total Maximum Daily Load (TMDL) program. The Little Alapaha River drains swampy portions of southern Echols County, Georgia, enters Florida in Hamilton County, and is captured by a sinkhole near the Alapaha River. (See Figure 1.) The sampling area is near the border between the Tifton Upland/Tallahassee Hills subregion of the Southeastern Plains ecoregion and the Okefenokee Swamps and Plains subregion of the Southern Coastal Plain ecoregion. The watershed upstream of the sampling point is mostly forested.

Samples were collected in all six selected interstate streams in January 2001. Water chemistry samples were taken for ammonia, nitrate-nitrite, total Kjeldahl nitrogen (TKN), total phosphorus, color, turbidity, total suspended solids (TSS), total organic carbon (TOC), biochemical oxygen demand (5-day, BOD), *Enterococci*, *Escherichia coli*, fecal coliform, and total coliform analysis; see Figure 2. Habitat assessment and benthic invertebrate Biorecon sampling were conducted.

Results

Ammonia (0.021 mg/L) and nitrate-nitrite concentrations were very low (Figure 2). The slightly elevated TKN level (1.3 mg/L) probably reflects swamp runoff. The total phosphorus concentration (0.15 mg/L) was average for a Florida stream. The habitat assessment total score (134) was in the optimal range (>120), with water velocity receiving a marginal score. Substrate diversity and substrate availability both received sub-optimal scores. *Enterococci* concentration (410 col/100 mL) was well above the EPA single-sampling guideline value of 108 col/100 mL for "infrequently used full body contact recreation areas." *Escherichia coli* concentration was below the EPA light-use guideline value (406 col/100 mL). Fecal and total coliform levels complied with Class III water quality standards. None of the three Biorecon metrics at the Little Alapaha River passed the expected criteria for streams in that area. According to field notes, lack of water (stagnant water velocity, paucity of inundated substrates) was largely responsible for the failed Biorecon. Since Biorecon sampling is a screening tool, a stream condition index (SCI) sampling or

additional biorecons should be conducted during non-drought circumstances to better determine biological condition.

Overall, the only parameters of concern in the Little Alapaha River at SR 12 were *Enterococci*, and possible impairment in the invertebrate community. The *Enterococci* levels may have been the result of wildlife inputs, or swamp runoff, and the invertebrates were most likely reduced due to drought conditions.

Figure 1: Overview Map of Sampling Area

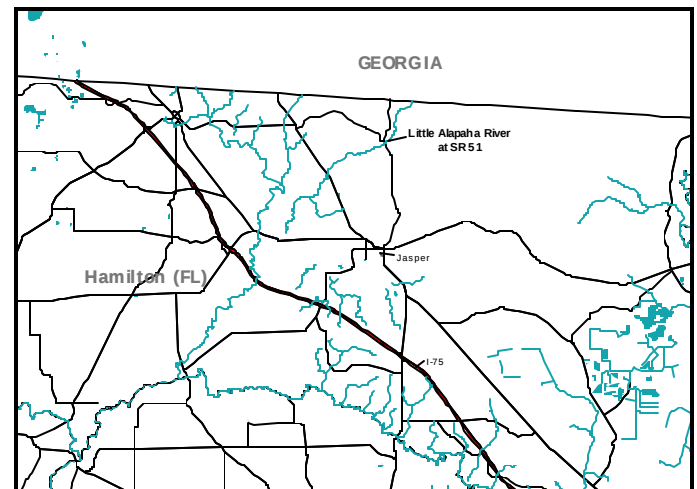


Figure 2: Data Table

Station		Little Alapaha @ 51	
Station Nick Name		LTLALPH@51	
STORET		INTRSTATESTRM03	
Sampling Date		01/23/01	
Macroinvertebrate Parameters		Physical-Chemical Data	
Biorecon	0 passed	Habitat Assessment Total Score	134
Evaluation	suspected impaired	Specific Conductance (umho/cm)	139
Number of Taxa	10	Dissolved Oxygen (mg/L)	5.5
Number of Ephemeroptera	1	pH (SU)	6.1
Number of Plecoptera	0	Temperature (deg. C)	8.9
Number of Trichoptera	0	Nutrient Data	
EPT Index	1	Ammonia (mg/L)	0.021
Florida Index	3	Nitrate-Nitrite (mg/L)	0.008 I
Bacteria Parameters		TKN (mg/L)	1.3
<i>Enterococci</i> (col/100 mL)	410 O	Total Phosphorus (mg/L)	0.15
<i>Escherichia coli</i> (col/100 mL)	100 O	TOC (mg/L)	42
Fecal Coliforms (col/100 mL)	250 Q	TSS (mg/L)	41
Total Coliforms (col/100 mL)	370 Q	Color (PCU)	400
BOD (mg/L)	1.8 A	Turbidity (NTU)	1.4

A = an average value, I = below practical quantitation limit, J = Estimated value, Q = outside holding time, U = below minimum detection limit



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