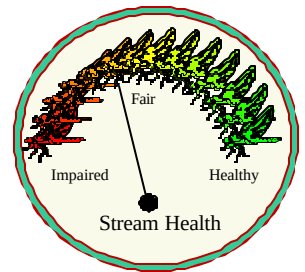




EcoSummary

Ochlockonee River at SR 12

01/24/01



Background

Florida DEP selected the Ochlockonee 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 Ochlockonee River flows through Grady County, Georgia, just before it forms the Leon-Gadsden county line as it flows into Florida. (See Figure 1.) The sampling area is in the Tifton Upland/Tallahassee Hills subregion of the Southeastern Plains ecoregion. This subregion is characterized by upland and hilly areas with sandy-clay soils. Agriculture (row crops) accounts for over 50% of the land use in the Georgia portion of the basin. Several large domestic and industrial point sources also discharge into the river within approximately 15 miles of the sampling point.

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

The nitrate-nitrite concentration (0.23 mg/L) at the sampling site was higher than that found in 70% of Florida streams; see Figure 2. The ammonia concentration (0.11 mg/L) was higher than the values found in 60% of streams in Florida. The TKN level (0.69 mg/L) and total phosphorus concentration were not problematic. Turbidity (15 NTU) was higher than the values found in 90% of other Florida streams. The habitat assessment total score (125) was in the optimal range (>120), however, substrate diversity, bank stability on the right bank, and riparian zone vegetation quality on both banks received sub-optimal scores. *Enterococci* concentration (134 org/100 mL) was 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 were below the Class III water body threshold values.

None of the three Biorecon metrics passed the expected criteria for streams in that area. For TMDL purposes, failure of all three Biorecon thresholds means that the site is biologically impaired. A follow up stream condition index (SCI) sampling should be conducted to confirm the impaired biological condition.

Overall, the parameters of concern in the Ochlockonee River at SR 12 are nitrate-nitrite, ammonia, *Enterococci*, turbidity, and impairment of the invertebrate community. The relative contribution from the various upstream pollution sources (agriculture and point source discharges) should be investigated.

Figure 1: Overview Map of Sampling Area

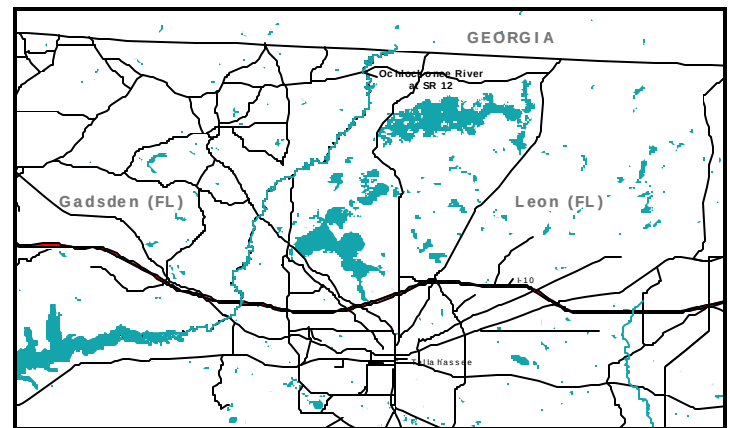


Figure 2: Data Table

Station		Ochlockonee @ 12	
Station Nick Name		LEON 4	
STORET		22020011	
Sampling Date		01/24/01	
Macroinvertebrate Parameters		Physical-Chemical Data	
Biorecon	0 passed	Habitat Assessment Total Score	125
Evaluation	impaired	Specific Conductance (umho/cm)	95
Number of Taxa	12	Dissolved Oxygen (mg/L)	10.3
Number of Ephemeroptera	0	pH (SU)	6.47
Number of Plecoptera	0	Temperature (deg. C)	8.84
Number of Trichoptera	1	Nutrient Data	
EPT Index	1	Ammonia (mg/L)	0.11
Florida Index	4	Nitrate-Nitrite (mg/L)	0.23 J
Bacteria Parameters		TKN (mg/L)	0.69
<i>Enterococci</i> (col/100 mL)	134 A Q	Total Phosphorus (mg/L)	0.1
<i>Escherichia coli</i> (col/100 mL)	195 A Q	TOC (mg/L)	11
Fecal Coliforms (col/100 mL)	295 A,Q	TSS (mg/L)	11.1
Total Coliforms (col/100 mL)	675 A,Q	Color (PCU)	100
BOD (mg/L)	1.9	Turbidity (NTU)	15

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



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