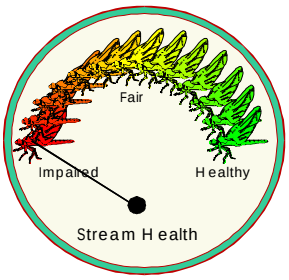
EcoSummary

BioRecon Report

Withlacoochee River
@ Hwy 6 & 31
03/30/1999



BioReconnaissance Report (BioRecon): A rapid, cost effective screening mechanism for identification of biological impairment.

Purpose and Background

The Withlacoochee River, located on the border of Madison and Hamilton counties, drains into the Suwannee River. Lying within the Tifton Upland/ Tallahassee Hills Subecoregion (65h), the land is predominately a combination of hardwood forests, mixed with longleaf pine and xerophytic oaks. Land use within the basin consists of cropland and pastures.

Two stations were sampled along the river, one at Highway 6 and the second at Highway 31. The Withlacoochee River has been placed on the 303(d) list for violations of mercury limits (based on fish consumption advisory), dissolved oxygen, turbidity, and nutrient levels. Waterbodies on this list are required by EPA to have a Total Maximum Daily Load (TMDL) study performed on them. The purpose of the TMDL is to determine the amount of pollution reduction needed to restore the system to a condition suitable for its designated use. In this case, the designated use is for recreation and maintenance of a healthy, well-balanced aquatic community.

DEP's Environmental Assessment Section was requested to assess the status of selected waterbodies on the TMDL list that were placed on the list with limited data. The data available for these selected waterbodies consisted of less than 10 observations in the storet database, somewhat dated, pre-1990 information, or qualitative non-point source survey data only.

Results

Physical/chemical parameters and nutrients were sampled at both stations in March of 1999. Macroinvertebrate communities were sampled at the Highway 6 station using 4 discrete dip net sweeps (Bio-Recon). The samples were field picked, then brought back to the laboratory for identification under a dissecting microscope. Three metrics; total taxa richness, Florida Index, and total EPT (Ephemeroptera, Plecoptera, and Trichoptera; larval mayflies, stoneflies, and caddisflies), were calculated and compared to existing eastern Panhandle thresholds to determine the community's health. A Bio-Recon is a screening tool that assesses freshwater macroinvertebrate communities based on geographically meaningful thresholds. The Withlacoochee River (at Highway 6) passed all three macroinvertebrate parameters (39 total taxa, 26 Florida Index points, and 12 EPT taxa) indicating a healthy biological community.

Assessment results indicate that habitat at this site was "optimal". Only bank stability, riparian buffer width, and riparian buffer quality fell into the "suboptimal" category.

Measured physical/chemical parameters and water quality variables for both stations met all of the criteria for Class III waterbodies. Both dissolved oxygen concentrations exceeded the Class III water quality standard of 5.0 mg/L (6.9 mg/L & 7.05 mg/L). Ammonia (0.05 and 0.054 mg/L), total Kjeldahl nitrogen (0.7 and 0.67 mg/L), and total phosphorus (0.11 and 0.096 mg/L) levels at Highway 6 and Highway 31 were well within the acceptable range (below the 50th percentile) for other Florida streams. Nitrite-nitrate levels were slightly elevated, however, falling within the 70th percentile (0.28 and 0.23 mg/L) in both cases, probably due to spring inputs. Turbidity levels, while meeting Class III standards, were higher than the values found in 65% of other Florida streams. Fecal coliform (48 colonies/100 ml and 46 colonies/100 ml) and total coliform (95 colonies/100 ml and 200 colonies/100 ml) counts complied with Class III water quality standards. Mercury levels were undetected at both stations.

Suggestions

The aquatic macroinvertebrate communities in the Withlacoochee River are healthy as exhibited by the Highway 6 station passing all three Bio-Recon parameters. Habitat was in the "optimal" category at this station, though some points were taken off for the recreational beach conditions existing on the left bank of the river. Dissolved oxygen and turbidity levels complied with Class III water quality standards, as did fecal and total coliform counts. All nutrient levels were within the acceptable range, except nitrite-nitrate, which fell in the 70th percentile of other Florida streams. Due to healthy biological and the vast majority of physical/chemical parameters in the normal range, it is recommended that this site be taken off the 303(d) list.

Figure 1: Overview Map of the Withlacoochee River

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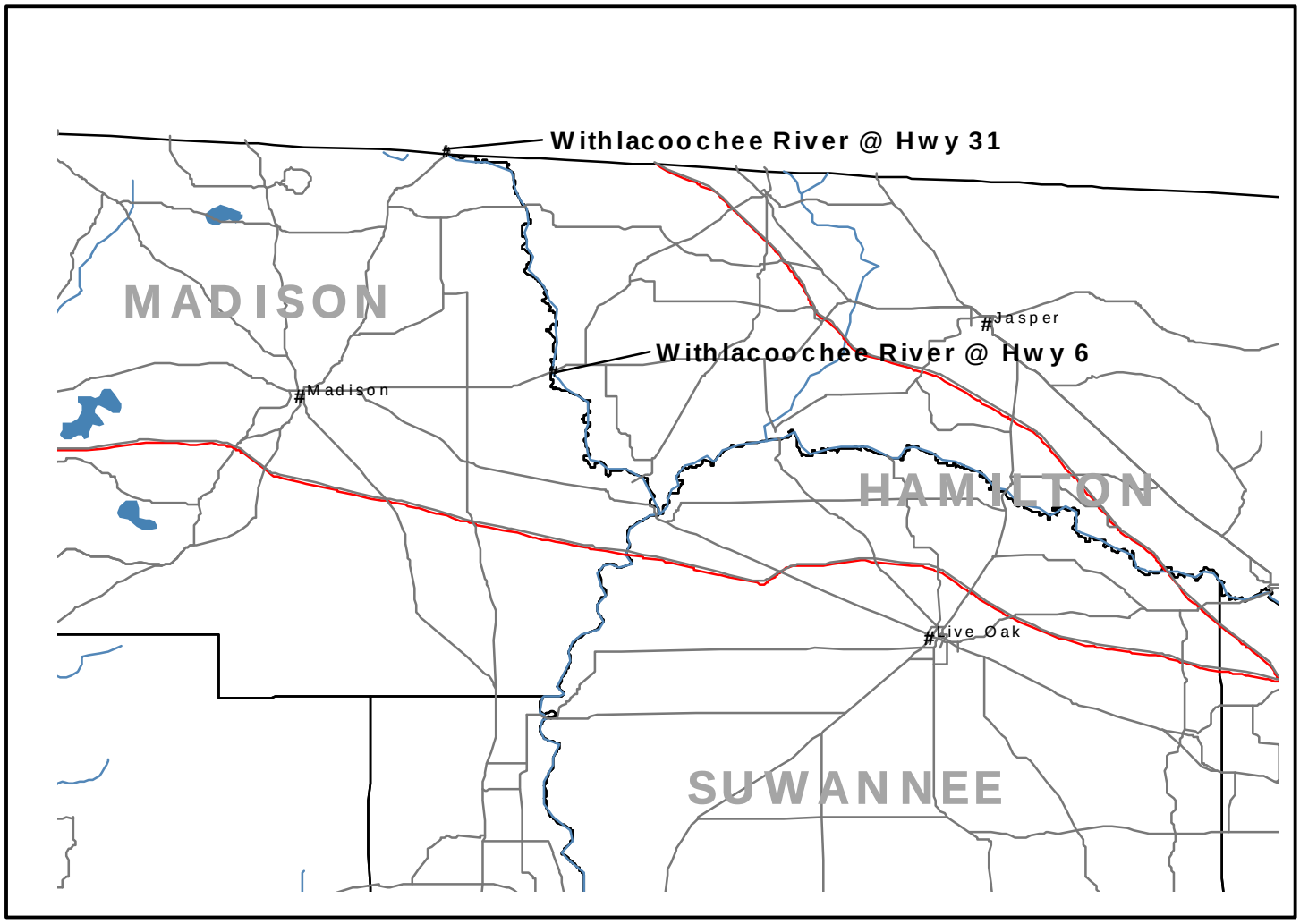


Figure 2: Data for Selected Parameters

Station	Date	# Taxa	Florida Index	EPT	pH (Std Units)	Temp (C)	TP (mg/L)	NH_3 (mg/L)	NOx (mg/L)	TKN (mg/L)	Turbidity (NTU)	Fecal Coliforms (col/100 ml)	Total Coliforms (col/100 ml)
Withlacoochee River @ HWY 6	3/30/99	39	26	12	7	19	0.11	0.05 BDL	0.28	0.7	4.2	48	95
Withlacoochee River @ HWY 31 Bridge	03/30/99	NA	NA	NA	6.6	18.28	0.096	0.054	0.23	0.67	4.3	46	200

Storet Code	Date	Depth (ft)	Width (ft)	Area (ft^2)	Velocity (ft/s)	Flow (cfs)	DO (mg/L)	Cond. (uhms/cm^2)
WIT030C1	03/30/99	0.5	20e	40e	0.5e	20e	6.9	287
Withlacoochee R. @ Hwy 31	03/30/99	0.5	250e	2000e	0.3	584e	7.05	126

FDEP Bureau Of Laboratories Chemistry Biology Quality Assurance

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