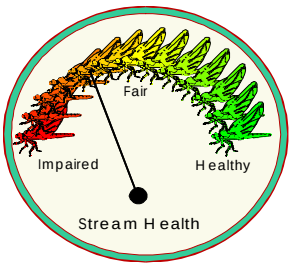
EcoSummary

BioRecon Report

Lafayette @ Weems Road
3/23/99



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

Purpose and Background

Lafayette @ Weems Road is located in Leon County. Land use in the watershed is predominantly commercial, industrial, and residential.

Lafayette @ Weems Road has been placed on the 303(d) list for violations of coliforms, nutrient, and turbidity 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

Benthic macroinvertebrates, physical/chemical parameters and nutrients were sampled in March of 1999. Macroivertebrates were sampled from instream habitats using 4 discrete dip-net sweeps (Bio-Recon). The samples were then field picked and brought back to the lab for further identification. Three metrics, consisting of total taxa richness, Florida Index and total EPT taxa (Ephemeroptera, Plecoptera and Trichoptera; larval mayflies, stoneflies, and caddisflies), were calculated and compared to existing eastern Panhandle thresholds to determine the communities health. Lafayette at Weems Road failed all three thresholds (22 taxa, 8 Florida index points, and 2 EPT taxa), indicating suspected impairment.

Habitat assessment results indicate that habitat is in the "suboptimal" range. Parameters of concern include substrate diversity/availability, water velocity, and bank stability.

Measured physical/chemical parameters and water quality variables met all of the criteria for Class III waterbodies. Dissolved oxygen concentration was 12.14 mg/L, above the Class III water quality standard of 5.0 mg/L. Fecal and total coliform counts (4 colonies/100mL and 240 colonies/100mL, respectively) were below Class III water quality standards. Turbidity levels (8.8 NTU's) were higher than those found in 80% of other Florida streams, but were not in violation of state standards. Nitrite-nitrate concentrations were below the detection limit (0.01 mg/L). Total Kjeldahl nitrogen (0.49 mg/L) and total phosphorus levels (0.089 mg/L) were also within the acceptable range.

Suggestions

Although nutrient and coliform levels fell within the acceptable range, there are still the concerns of poor macroinvertebrate community health and suboptimal habitat quality at this site. Lafayette at Weems Road failed to pass any of the three Bio-recon parameters, probably due to insufficient habitat or periodic poor water quality (following storm events). Due to the lack of a healthy biological community at the site, Lafayette at Weems Road should remain on the 303(d) list.

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Figure 1: Overview Map of Lafayette @ Weems Road

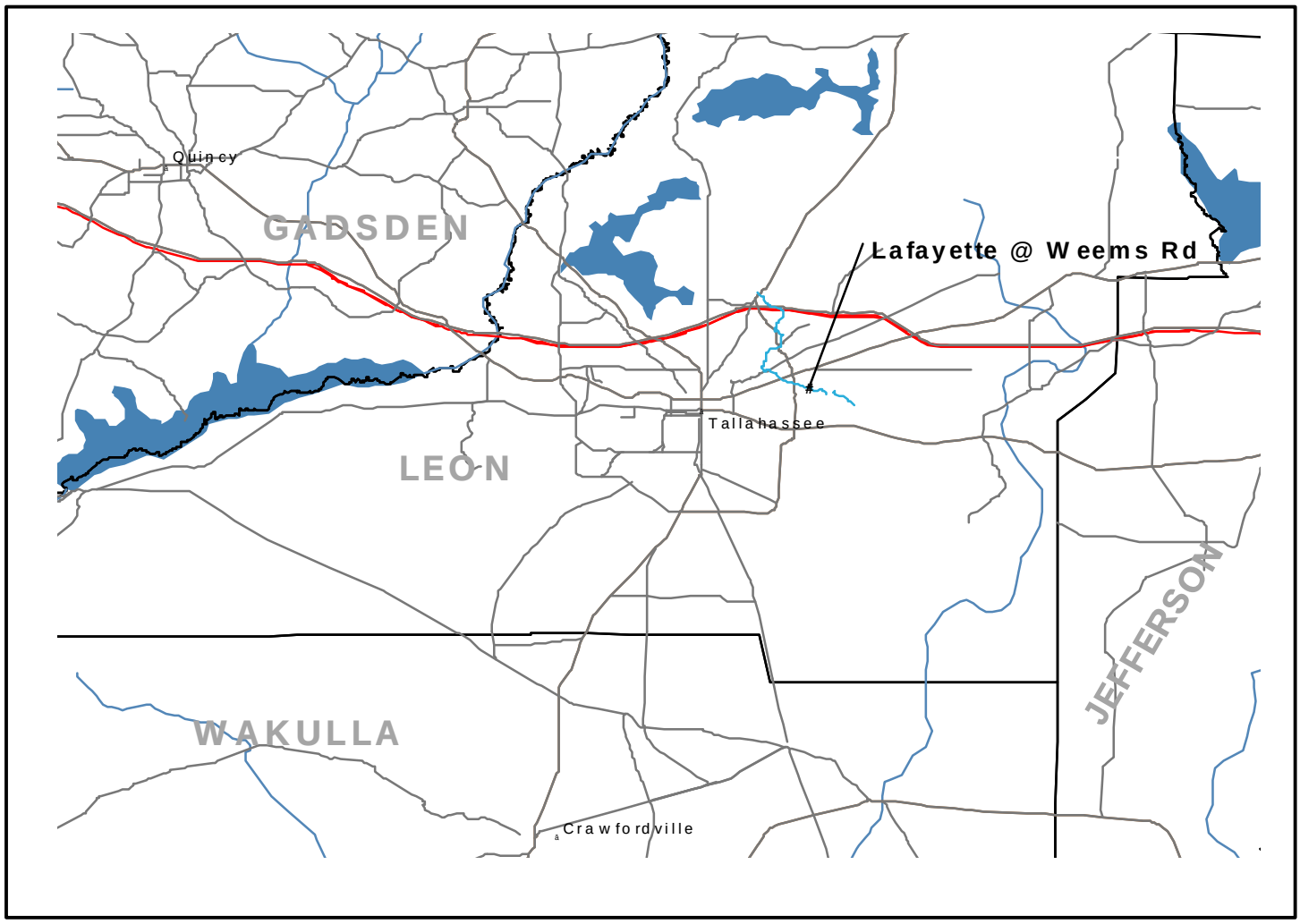


Figure 2: Data for Selected Parameters

Station	Date	# Taxa	Florida index	EPT	pH (Std Units)	Temp (C)	NH_3 (mg/L)	NOx (mg/L)	TKN (mg/L)	TP (mg/L)	Turbidity (NTU)	Fecal coliforms (col/100 ml)	Total coliforms (col/100 ml)
Lafayette @ Weems Rd	03/23/99	22	8	2	8.1	19.5	0.01	0 BDL	0.49	0.089	8.8	4	240

Storet Code	Date	Depth (ft)	Width (ft)	Area (ft^2)	Velocity (ft/s)	Flow (cfs)	DO (mg/L)	Cond. (uhms/cm^2)
22030045	03/23/99	0.5	10.6	5.002	0.392	1.96	12.14	92.2

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