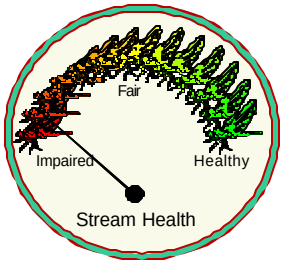
EcoSummary

BioRecon Report

Munson Slough
@ Capital Circle
3/17/99



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

Purpose and Background

Munson Slough, located in Leon County, is an artificially channeled system that empties into Lake Munson. Land use within the drainage basin is predominantly commercial, residential, and industrial.

Munson Slough at Capitol Circle has been placed on the 303(d) list violations of dissolved oxygen, coliform, turbidity, and nutrient limits. 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 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. Limited data waterbodies were those with less than 10 observations in the STORET database, with the most recent observations occurring prior to 1990, or those with qualitative, non-point source survey data only.

Results

Benthic macroinvertebrate communities, physical/chemical parameters, and nutrients were sampled in March of 1999. Macroinvertebrates were sampled from instream habitats using 4 discrete dip-net sweeps (Bio-Recon). The samples were field picked and brought back to the lab for 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 biological health. Munson Slough passed only the total taxa richness threshold (28 total taxa), failing both the Florida Index (2 points) and total EPT Index (1 EPT taxa) thresholds by many points, indicating suspected impairment.

Habitat assessment of the site was in the "poor" category (scoring 54 out of a total 160 points). Few productive habitats were available for macroinvertebrate colonization or refugia, and habitat smothering was a major parameter of concern.

Fecal coliform counts (150colonies/100ml) were below the Class III standard of 800 colonies/100ml. Total coliform counts (3400 colonies/100ml), however, were well above the standard of 2400 colonies/100ml. Total phosphorous (0.13 mg/L), total nitrite-nitrate levels (.07 mg/L), and total Kjeldahl nitrogen levels (0.63 mg/L) were within the acceptable range (below 50% of other Florida streams). The dissolved oxygen concentration (7.29 mg/L) was above the accepted threshold of 5.0 mg/L. Turbidity, (12 NTU's) while not a violation of state standards, was higher than 90% of other Florida streams.

Suggestions

Munson Slough failed the Bio-recon, indicating suspected impairment of the aquatic macroinvertebrate community. Nutrient levels were all within the acceptable range for other Florida streams. Dissolved oxygen levels and fecal coliforms complied with Class III surface water quality standards, however, total coliform counts exceeded the Class III water quality standard. Turbidity levels, while not a violation, were higher than 90% of other streams in the state. Due to the biological results and the violation of total coliform counts, it is recommended that Munson Slough remain on the 303(d) list.

FOR MORE INFORMATION, CONTACT:
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Figure 1: Overview Map of Munson Slough @ 263

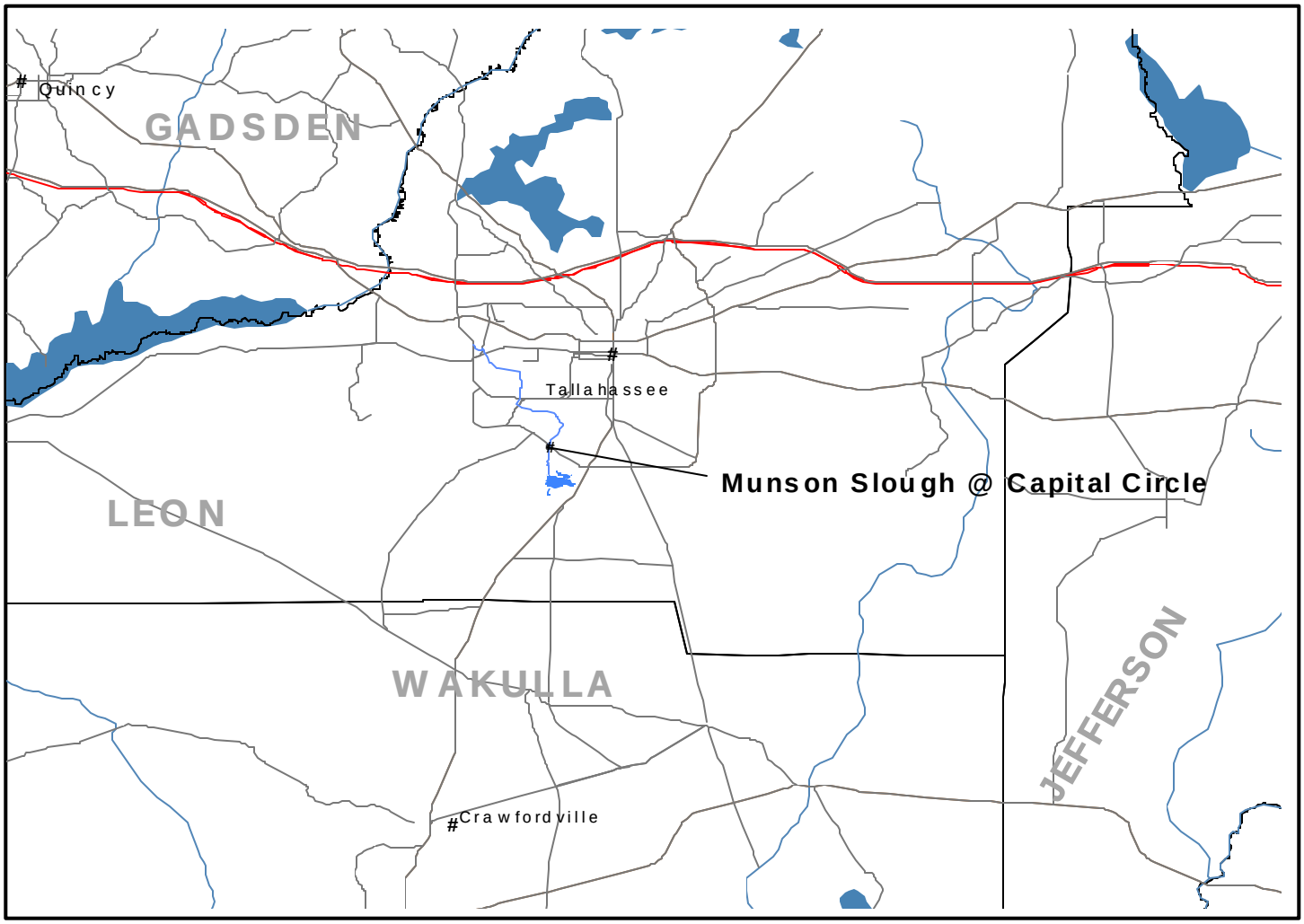


Figure 2: Data for Selected Parameters

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)
Munson Slough @ Capital Circle	03/17/99	28	2	1	6.79	16.5	0.081	0.07	0.63	0.13	12	150	3400

STORET Code	Date	Average Depth (ft)	Width (ft)	Area (sq. ft)	Velocity (ft/s)	Flow (cfs)	DO (mg/L)	Cond. (umhos/cm)
302314084184901	03/17/99	2.26	36.2	81.91	0.116	9.537	7.29	128.4

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