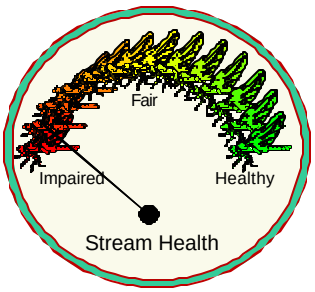
EcoSummary



BioRecon Report

Indian Head Creek
At Apakin Nene
3/23/99

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

Purpose and Background

Indian Head Creek at Apakin Nene, a tributary of Munson Slough, is located in Leon County. Land use in the drainage basin is predominantly residential and commercial. No significant part of the area has been retained as natural or forested.

Indian Head Creek at Apakin Nene has been placed on the 303(d) list for violations of turbidity, total suspended solids (TSS), coliforms, and nutrient levels. Waterbodies on the 303(d) 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 macroinvertebrates, physical/chemical parameters, and nutrients were sampled in March of 1999. Macroinvertebrate communities were sampled from in-stream habitats using 4 discrete dip-net sweeps, field picked, and lab identified using the BioRecon Procedure. Three metrics consisting of total taxa richness, the Florida Index and total EPT taxa (Ephemeroptera, Plecoptera, Trichoptera; larval mayflies, stoneflies, and caddisflies) were calculated and compared to existing thresholds to determine the community's overall health. Indian Head Creek at Apakin Nene failed all three thresholds (5 total taxa, 0 Florida Index, 0 EPT taxa) indicating severe biological impairment

Total coliform counts (870 colonies/100 mL) complied with the Class III water quality standard of 2,400 colonies/100 mL. Fecal coliform counts (30 colonies/100 mL) also complied with the Class III standard of 800 colonies/100 mL. Dissolved oxygen was 8.77 mg/L, above the Class III water quality standard of 5.0 mg/L. The total Kjeldahl nitrogen concentration at Indian Head Creek at Apakin Nene (0.74 mg.mL) ranked in the 35th percentile of the streams in Florida. Nitrite-nitrate (0.11 mg/mL) and total phosphorous (0.15 mg/mL) concentrations in Indian Head Creek at Apakin Nene were elevated to levels higher than those found in 55% of other Florida streams. Ammonia levels (0.36 mg/mL) were higher than 90% of Florida streams. Turbidity levels (14 NTU) were elevated to levels higher than those found in 90% of other Florida streams, though not enough to in violation of the Class III water quality standard (which is 29 NTU above background).

Suggestions

Indian Head Creek at Apakin Nene failed all three of the BioRecon metrics, indicating severe biological impairment. Ammonia and turbidity levels were higher than those found in 90% of Florida streams. It is recommended that Indian Head Creek at Apakin Nene remain on the 303(d) list.

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Figure 1: Overview Map of Indian Head Creek @ Apakin Nene

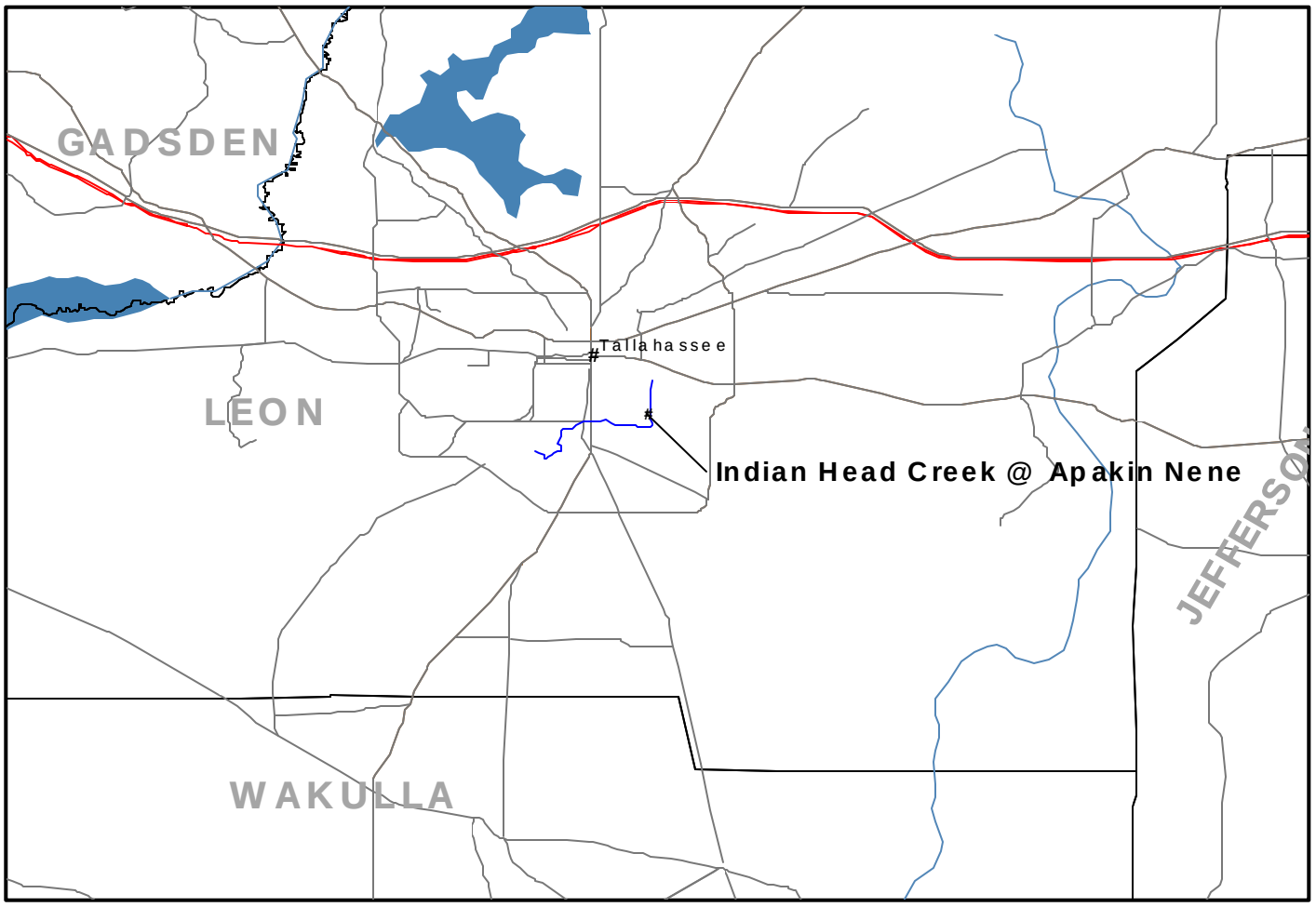


Figure 2: Data for Selected Parameters

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)
Apakin Nene	03/23/99	5	0	0	5.7	14.9	0.36	0.11	0.74	0.15	14	30	870

STORET Code	Date	Average Depth (ft)	Width (ft)	Area (sq. ft)	Velocity (ft/s)	Flow (cfs)	DO (mg/L)	Cond. (umhos/cm)
302549084152900	03/23/99	0.15	3.2	0.466	0.341	0.159	8.77	95.9

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