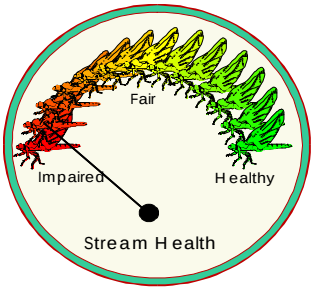


EcoSummary

BioRecon Report

Ochlockonee River
@ Old Bainbridge Rd
5/4/99



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

Purpose and Background

The Ochlockonee River at Old Bainbridge Road, located in Gadsden County, lies within the Tifton Upland/ Tallahassee Hills Subecoregion (65h), the land is predominately a combination of hardwood and pine forest, mixed with longleaf pine and xerophytic oaks. Land use within the basin consists of cropland and pastures.

The Ochlockonee River has been placed on the 303(d) list for violations of mercury limits (based on fish consumption advisory). 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 in May of 1999. Macroinvertebrate communities were sampled using 4 discrete dip net sweeps (Bio-Recon). The samples were then field picked, and brought back to the laboratory for further identification under a dissecting microscope. Three metrics; total taxa richness, Florida Index, and total EPT (Ephemeroptera, Plecoptera, and Trichoptera; mayflies, stoneflies, and caddisflies), were calculated and compared to existing western Panhandle thresholds to determine the community's health. A Bio-Recon is a screening tool that assesses freshwater macroinvertebrate communities based on geographic thresholds. The Ochlockonee River passed only one of the three macroinvertebrate parameters at this site, total taxa richness (25 total taxa), indicating suspected impairment. Both the Florida Index (14 points) and the EPT Index (5 EPT taxa) failed to meet expected thresholds for the western Panhandle.

Assessment results indicate that habitat at this site was "suboptimal". Low substrate diversity and availability were factors contributing to the scarcity of macroinvertebrates. Left bank stability, buffer width and vegetation quality were also parameters of concern at the site.

All measured physical/chemical parameters and water quality variables met criteria for Class III waterbodies. Dissolved oxygen concentrations (8 mg/L) surpassed the Class III water quality standard of 5.0 mg/L. Nitrite-nitrate (0.86 mg/L), total phosphorus (0.14 mg/L), ammonia (0.012 mg/L) and total Kjeldahl nitrogen (0.4mg/L) levels were in the acceptable range, below 50% of other streams in Florida. Fecal coliform (22 colonies/100 ml) and total coliform (240 colonies/100 ml) counts also met state Class III water quality standards. Turbidity levels (8.2 NTU's), while not in violation of Class III standards, were higher than 80% of other Florida streams.

Suggestions

The aquatic macroinvertebrate communities within the Ochlockonee River are suspected to be impaired as exhibited by the station failing two of the three biological parameters. Low substrate diversity/availability and marginal left bank quality may have contributed to the depauperate biota found at this site. Turbidity, while not a violation of state standards, was higher than 80% of other state streams. Nutrient, coliform and dissolved oxygen levels, however, were all within the acceptable range. Due to the inability of the river to pass the majority of biological parameters, it is recommended that the Ochlockonee River remain on the 303(d) list.

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Figure 1: Overview Map of the Ochlockonee River at Old Bainbridge Road

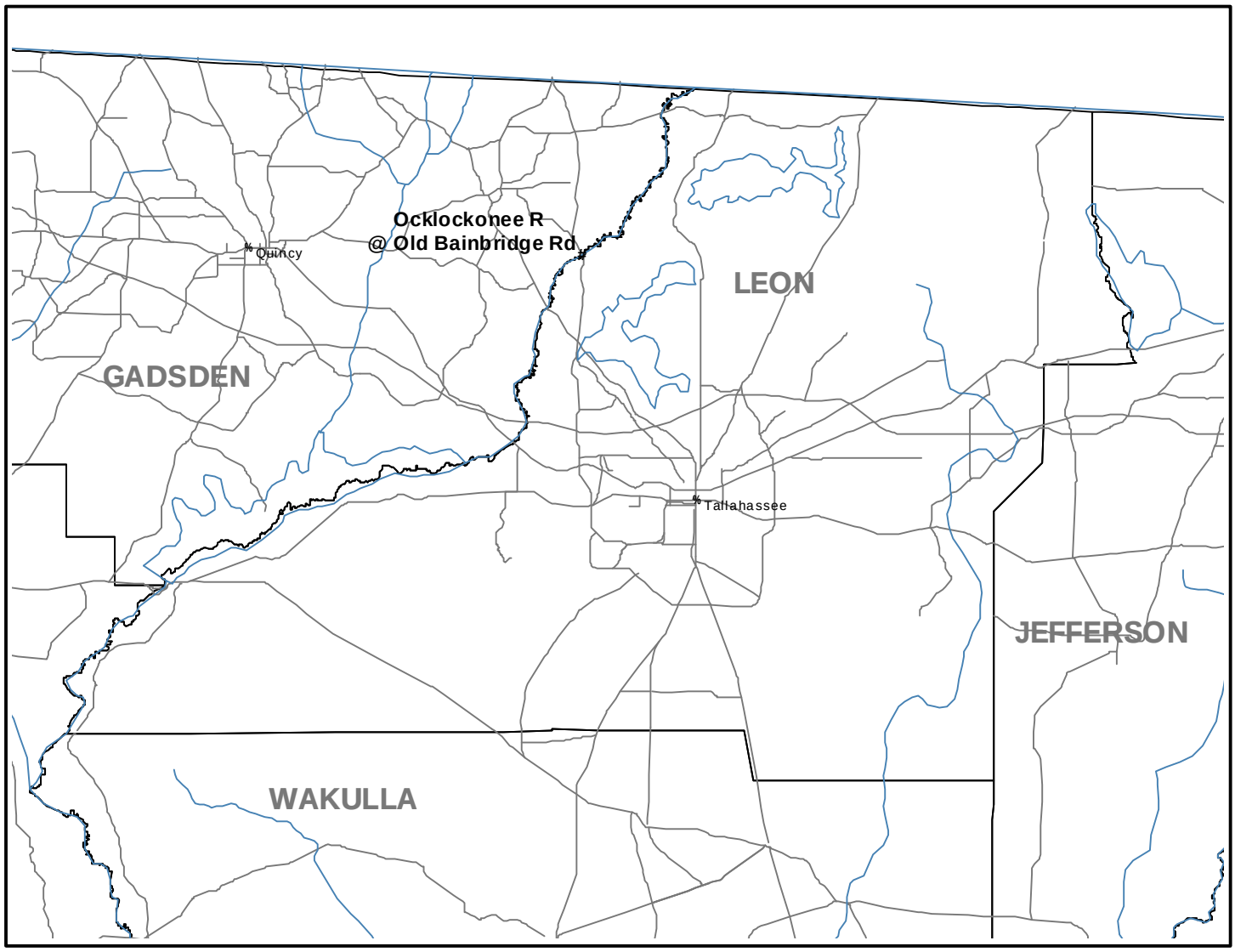


Figure 2: Data for Selected Parameters

Station	Date	# Taxa	Florida index	EPT	pH (Std Units)	Temp (C)	NOx (mg/L)	NH_3 (mg/L)	TKN (mg/L)	TP (mg/L)	Fecal coliforms (col/100 ml)	Total coliforms (col/100 ml)	TSS (mg/L)	Turbidity (NTU)
Ocklocknee River @ Old Bainbridge Road	05/04/99	25	14	5	6.9	23.3	0.86	0.012	0.4	0.14	22	240	4	8.2

Storet Code	Date	Depth (ft)	Width (ft)	Area (ft^2)	Velocity (ft/s)	Flow (cfs)	DO (mg/L)	Cond. ($uhms/cm^2$)
GFCNW0132	05/04/99	1.28	67.5	86.35	0.954	82.4	8	192

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