EcoSummary

BioRecon Report

Manning Creek Hwy 87 in Santa Rosa County
July 16, 1998

BioRecon: A rapid, cost-effective screening mechanism for identification of biological impairment

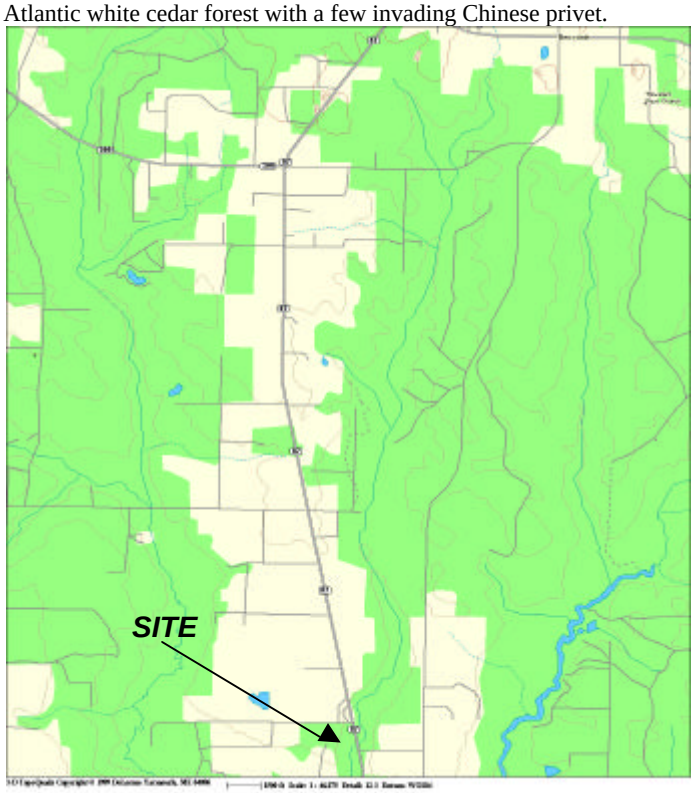
Introduction

Manning Creek is located in Santa Rosa County with its headwaters in Berrydale and flows to Pensacola Bay via West Fork Big Coldwater Creek, Blackwater River, Blackwater Bay, and East Bay. This subecoregion 65F stream has a long and narrow watershed (~9 miles length ~ 3 miles width). The land use is mostly agriculture and silviculture with some residential, strip mine, impoundment, commercial, and correctional facility areas in the watershed. Fecal and total coliform bacteria suspended solids and turbidity were nonpoint pollution concerns, which placed Manning Creek on the 303(d) list for TMDL study. 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. Manning Creek is designated Class III waters for recreation and maintenance of a healthy, well-balanced aquatic community.

Manning Creek below Hwy 87 with mature Atlantic White Cedar forest as a natural riparian buffer zone.

Results and Discussion

Macroinvertebrate communities were sampled on 07/16/98 from in-stream habitats by the FDEP BioRecon method below State Road 87 (STORET 33030090). Three metrics, consisting of total taxa richness, the Florida Index, and total EPT taxa were calculated and compared to existing thresholds to determine the community's health. Manning Creek passed all 3 biometric thresholds indicating a healthy condition at the site. Total and fecal coliform bacteria counts (690 and 80 colonies/100ml) were within the water quality standard (2,400 colonies & 800 /100ml) during this non-runoff period. Turbidity was low due to lack of rain however, the water turned muddy after disturbing substrates. Nitrite-nitrate concentrations were elevated (0.96 mg/l) exceeding nitrate levels found in 90% of other Florida streams. The sediments had a musty blue-green algae odor. This area experienced a record drought during the May/June period with hot temperatures and scattered showers for July. Household garbage, tires, and a farm animal carcass were dumped in the creek at the bridge crossing. The habitat assessment of the site was 77% of the % similarity to the reference score. A score of 65% is an interim biometric threshold. Habitat smothering rated marginal from 70% coverage of habitats with 32% sand, 32% gravel, and 6% mud/muck/silt. The available substrates were covered with a layer of silt. The stream banks were moderately unstable with areas of erosion from a recent flood during March. The riparian zone was a mature Atlantic white cedar forest with a few invading Chinese privet.



Conclusions

Manning Creek passed all three BioRecon metrics, indicating a healthy condition at this site. Physical/chemical parameters such as habitat smothering and nutrient enrichment were observed anthropogenic disturbances. Sources of these problems are mainly agriculture for nutrients but include silviculture and dirt roads for sediment runoff. Coliform bacteria sources include agriculture with livestock a major source. The presence of coliform bacteria and turbidity were rainfall dependent. Observations upstream of this site in Manning Creek's headwaters noted algal blooms and additional discarded animal carcasses. This sample was collected after a record drought so sediment and bacteria concerns were not adequately monitored for this watershed. It is recommended that Manning Creek be monitored during and after significant rainfall events. This would determine sediment and bacteria effects on recreational activities such as canoeing and swimming just downstream in Coldwater Creek and Blackwater River and shellfish harvesting in East Bay's Class II waters. **For more information, contact Donald Ray, FDEP Northwest District, 160 Governmental Center, Pensacola, FL 32501 (850) 595-8300 x1126 or SC 695-8300**