

EcoSummary

BioRecon Report



Pace Mill Creek Hwy 90 in Santa Rosa County July 08, 1998

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

Introduction

Pace Mill Creek is located near the rapidly growing area of Pace in Santa Rosa County West of Milton. Its watershed is in the subcoregion 75A and flows to Pensacola Bay via Bass Hole Cove and Escambia Bay. This once rural watershed now drains a rapid expansion of urban development including subdivisions and strip developments.

Fecal coliform, dissolved oxygen, total suspended solids, and turbidity were nonpoint pollution concerns which placed Pace Mill 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. Pace Mill Creek is designated Class III water for recreation and maintenance of a healthy, well-balanced aquatic community.



Pace Mill Creek US 90

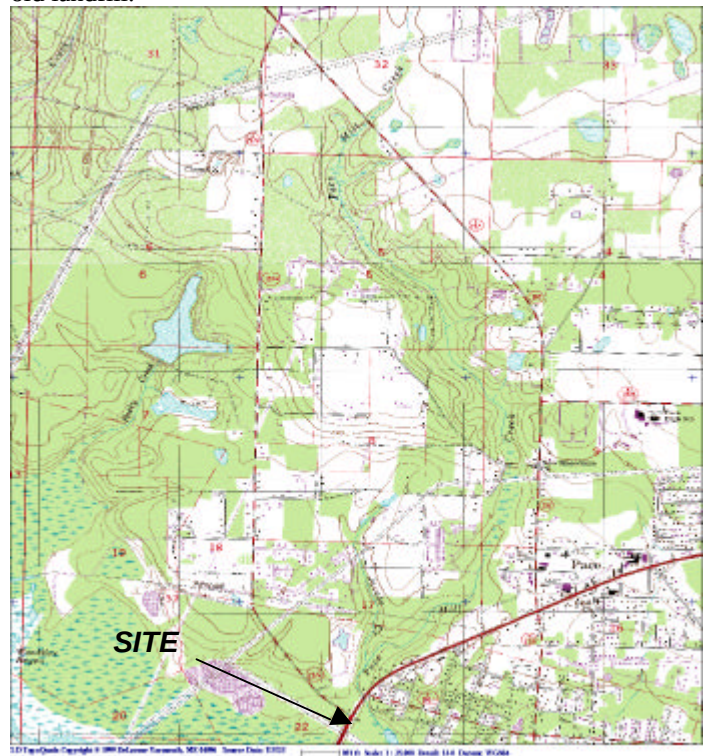
Results and Discussion

Macroinvertebrate communities were sampled on 07/08/98 from in-stream habitats by the FDEP BioRecon method above Highway 90 in Pace. The sample reach was above an area dredged by FDOT. 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. Pace Mill Creek failed 2 of 3 thresholds for the biometrics, passing only the total taxa richness. These results indicate impairment at the site.

The dissolved oxygen ranged from 2.4 (bottom) to 4.2 mg/l (top) below the Class III standard of 5.0 mg/l. The biochemical oxygen demand of 1 mg/l was elevated for this type of stream (normally less than 0.36 mg/l). Nutrient enrichment was apparent as nitrogen compounds were elevated compared other subcoregion streams (0.59 mg/l TKN, 0.51 mg/l nitrite-nitrate, 0.36 mg/l ammonia). The water was unaesthetic with a musty blue green algae odor and abundant periphyton and iron/sulfur bacteria. A surface

sheen was present from the iron/sulfur bacteria, which gave the water a rust color. The sediments had an anaerobic odor. This area experienced a record drought during the May/June period. With this resulting low flow stage, much of nonpoint pollution load had settled out of the water column to the bottom substrate.

The habitat assessment of the site was 41% of the % similarity to the reference score. A score of 65% is an interim biometric threshold. Substrate availability was marginal, water velocity poor (due to downstream channelization and dredging by FDOT), habitat smothering rated poor from mud/muck/silt and sand, channelization marginal from past work on adjacent closed landfill, right bank stability marginal, right bank riparian buffer width poor due to a storm water pond for a ball park built on the old landfill.



Conclusions

Pace Mill Creek failed two of three BioRecon metrics, indicating impairment at this site. Physical/chemical parameters and water quality variables indicated anthropogenic sources. This was despite the lack of rainfall conveying nonpoint source pollutants to Pace Mill Creek.

It is recommended that Pace Mill remain on the 303(d) list. For more information, contact Donald Ray, FDEP Northwest District, 160 Governmental Center, Pensacola, FL 32501 (850) 595-8300 x1126 or SC 695-8300