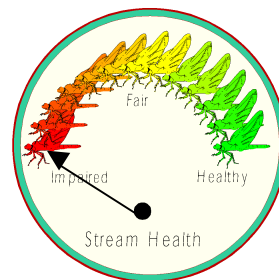


# EcoSummary

BioRecon Report

North Fork Collins Mill Creek below SR 89, Milton, Santa Rosa County

06 July 2000



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

## Introduction

North Fork Collins Mill Creek at this location (lat N30° 38' 13.5" long W87° 03' 19.3") is a first order tributary to the Blackwater River classified as Outstanding Florida Waters under Florida Water Quality Standards. The Blackwater River flows into East and Pensacola Bays, which are part of the Pensacola Bay drainage basin. The watershed drainage is undergoing urban growth in the City of Milton. The creek is located in both subcoregion 65F Southern Pine Plains and Hills in the upper drainage and 75A Gulf Coast Flatwoods near its confluence with Blackwater River. An Atlantic white cedar forest historically occupied wetlands along stream borders.



North Fork Collins Mill Creek below SR89

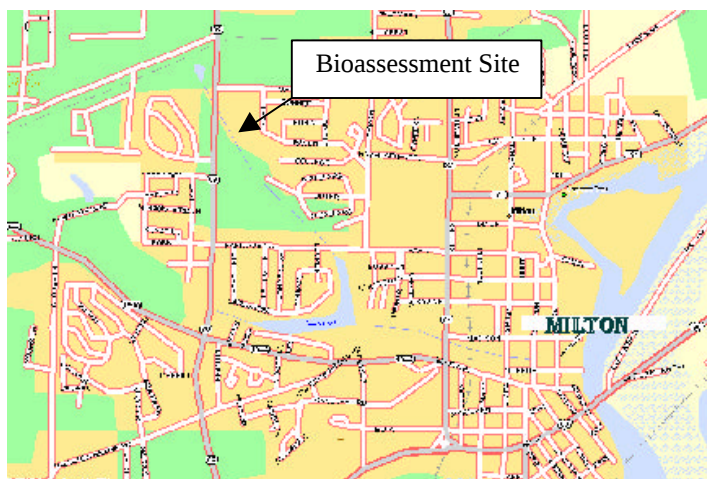
## Results and Discussion

Macroinvertebrate communities were sampled on 07/06/00 from in-stream habitats by the FDEP BioRecon method below State Road 89 (STORET 33030117).

The North Fork Collins Mill Creek site's biological community health rated as impaired in the bioassessment. All three biological indicators failed the threshold established for healthy aquatic ecosystems:

| Site                     | Taxa | FI  | EPT | Habitat score |
|--------------------------|------|-----|-----|---------------|
| NF Collins Mill blw SR89 | 10   | 5   | 2   | 46%           |
| Collins Mill above SR89  | 17   | 9   | 2   | 56%           |
| Hicks Creek              | 50   | 38  | 24  | 59%           |
| Muddy Branch SR 4        | 51   | 40  | 31  | 70%           |
| Thresholds               | ≥24  | ≥22 | ≥17 | optimal ≥84%  |

This North Fork Collins Mill Creek site's Taxa were reduced by 41% as compared to the stream community at Collins Mill Creek above SR 89. The Florida Index (clean water indicators) was reduced 45%. The EPT (mayfly,



stonefly, & caddisfly) component of the stream's aquatic wildlife community was reduced by 88% of reference thresholds for impairment ratings established at 17. The reductions of biological integrity were much greater when compared to other area small streams in subcoregion 65F such as Muddy Branch and Hicks Creeks. Pollution tolerant organisms dominated the aquatic community structure at North Fork Collins Mill Creek below SR89. The site habitat rated in the marginal category (46%). Sediments from the road construction severely limited the stream substrate diversity and substrate availability as fish and wildlife habitat. Woody debris, leaf pack, and roots/undercut banks, habitats were smothered by sediment (2% sand & 97% clay/silt). The riparian zone's native Atlantic white cedar forest had dead trees from construction sediment filling wetlands. The native Florida anise shrub was being replaced with newly colonizing Chinese privet in areas of sediment fills. Conditions were dry for the week previous to the bioassessment. Whiting Field reported a deficit of @ 27 inches of rain since January. Dissolved oxygen concentrations (4.88 mg/l) were below State Water Standards (5.0 mg/l).

## Conclusions

The results confirm that this stream site does not meet Class III State Surface Water Quality Standards 62-302 for recreation and the propagation and maintenance of a healthy, well-balanced population of fish and wildlife and had been impacted by human activities. For more information, contact Donald Ray, FDEP Northwest District, 160 Governmental Center, Pensacola, FL 32501 (850) 595-8300 x1126