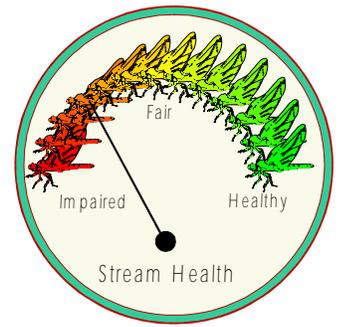


EcoSummary

BioRecon Report



Collins Mill Creek at Broad St., Milton FL July 23, 1996

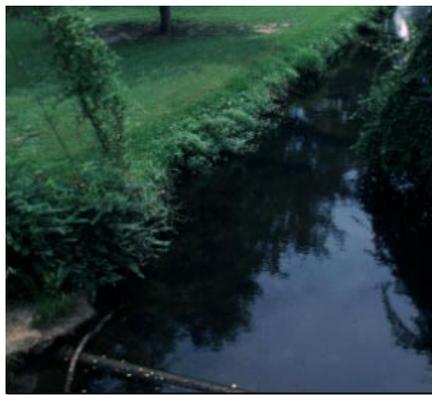
BioReconnaissance (BioRecon): A rapid, cost effective screening mechanism for identification of biological impairment.

Purpose

A BioRecon was performed at this site in order to assess any impacts to the stream from urban non-point source runoff. The Collins Mill Creek watershed has been urbanized for many years. Locklin Lake, an up-stream impoundment, has been the source of many water quality complaints during the past 20 years. The Clean Water Act, Section 303(d) requires States to identify impaired water bodies and develop a waste-load allocation known as a Total Maximum Daily Load (TMDL) to reduce pollutants to a level sufficient to protect water quality of a watershed. This area was on the State of Florida 303(d) Priority TMDL list compiled by FDEP Division of Water Facilities.

Basin Characteristics

Collins Mill Creek is a second order tributary to the Blackwater River which is classified as Outstanding Florida Waters under Florida Water Quality Standards. The Blackwater River flows into East and Pensacola Bays which are part of the Greater Pensacola Bay Ecosystem Management Area. The watershed drainage is primarily urban within the city of Milton. The creek is located in both subecoregion 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. Locklin Lake, an impoundment on Collins Mill Creek significantly alters the

ecology of the stream. Hydrilla, an exotic aquatic plant from the impoundment was present downstream. The sampling stream depth was 0.8 meters, and the velocity ranged from 0.1 to 0.2 m/sec.

Results

The BioRecon indicated impairment to the Collins Mill Creek biological community. All 3 biological indicators (13 total taxa ≥ 24 metric target value, 4 Florida Index ≥ 22 metric target value, and 3 EPT ≥ 11 metric target value) failed to meet

thresholds established for healthy aquatic ecosystems. The aquatic community structure was dominated by pollution tolerant organisms. The site habitat was degraded.



Sediment (66% sand & 20% sludge/silt) had smothered the benthic substrate. Silt and bluegreen algae covered the marginal available habitat. The stream had been artificially straightened with box-cut banks and highly altered instream habitat. Water had a musty/fishy odor and sediments were anaerobic with a chemical odor. The creek became very turbid after walking disturbed the sediment deposits. The riparian zone vegetation was dominated by exotic species such as Chinese privet, kudzu, and popcorn trees.

Significance

The results confirm that this stream is impacted by human activities. Collins Mill Creek 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.

Suggestions

On the basis of the entire site evaluation, it is recommended to upgrade stormwater management in the watershed and restore the natural riparian zones and flow conditions for the stream. Education and participation of local citizens in the watershed pollution abatement is the key to waterbody restoration. Dam removal could improve water quality by reducing nutrient enrichment, oxygen depletion, and disruption of the aquatic wildlife community. Restoration of the stream's natural sinuosity would enhance habitat and reaeration to assimilate a greater waste-load to protect the OFWs of the Blackwater River and the Yellow River Marsh Aquatic Preserve.

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