A site map can be viewed by clicking on the report site name.

EcoSummary

Pritchett Mill Br @ Teddar Rd Sect11 T5N R31W

August 1, 2002

IMPAIRED

FLORIDA AMBIENT

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

For samples collected before June 8, 2004
All field and laboratory methods followed FDEP Standard Operating Procedures and met FDEP quality assurance/quality control standards.
For samples collected on or after June 8, 2004
All field and laboratory methods followed FDEP Standard Operating Procedures (SOPs) and met DEP quality assurance/quality control standards.

Purpose



A bioassessment was performed at this site on East Fork Pritchett Mill Branch to assess its biota and wildlife habitat after the former dirt surfaced stream approaches to Tedder Road were paved in December 2000. This bioassessment was in technical support of the ecosystem partnership between FDEP and Escambia County to address dirt road sedimentation issues. The 1997 pre-paved bioassessment ecosummary can be found at http://tlhdwf2/eswizard/ecosummary.asp?code=18171

Watershed Characteristics

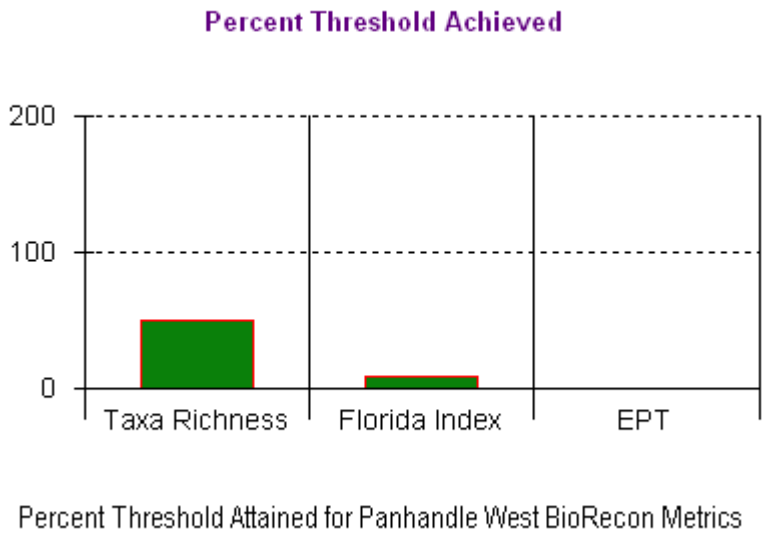
East Fork Pritchett Mill Branch at the bioassessment site is a first order stream, located about 1.5 miles southwest of Century (Lat. 30 degrees 57' 33.7" Long. 87 degrees 18' 29.8"). Pritchett Mill Branch flows into Pensacola Bay via the Escambia River and Bay. This site (STORET station 33020061) drains the Southern Pine Plains and Hills of subecoregion 65f.

Results

The BioRecon indicated a severely impaired biological community. Results from this post-paving assessment indicated the stream community still failed to meet thresholds for all 3

biometrics. The BioRecon was conducted during a period when local concern for the West Nile virus was high. Pesticide odors were detected at the road culvert. It appeared Escambia County applied chemicals to control mosquitoes that spread the West Nile virus after observing stagnant water at the culvert crossing. See biometric results given below.

Biometrics	Value	Threshold
Taxa Richness	12	>= 24
Florida Index	1	>= 22
EPT	0	>= 17



Although paving eliminated road sedimentation to Pritchett Mill Branch at Tedder Road, the aquatic wildlife community did not improve, probably because of pesticide impacts. The stream wildlife shifted from one dominated by midges, planarians with dragonflies, and fishfly in 07/22/97 to a community reduced in numbers, which now included mosquitoes, but no dragonflies. At least 2 tires (contributing habitat for mosquitoes) were observed dumped below Tedder Road in the stream riparian zone. Habitat smothered by sediment decreased from 99% before paving (from clay and sand accumulation) to 50% coverage after the hot mix asphalt road paving. Eliminating clay runoff increased this Pritchett Mill Branch site's productive wildlife habitat substrates (woody debris, leaf pack/mats, undercut banks/roots) from 7 to 30% coverage, which approaches the optimal condition of greater than 30% coverage of productive stream wildlife habitat. Previously, clay road sediments filled 90% of the stream channel sample reach. At the time of this BioRecon, 15% of the available habitat was beneficial gravel substrate, while clay sediments covered only 15%. However, the culvert crossing still impeded flowing waters during low flow and the stream above Tedder Road continued to be impounded by the road fill. Stagnant conditions created by road fill material that dammed the stream caused continued dissolved oxygen problems (1.97 mg/l) in violation of Florida Water Quality Standards (minimum 5 mg/l to protect fish and wildlife). The braided stream condition observed below Tedder Road in 1997 was not quite as severe. This braided condition should return to a natural single channel when the region returns to normal rainfall conditions, changing from the recent 4-year La Nina drought that reduced stream flow. This Tedder Road stream crossing was on the Natural Resources Conservation Service's (NRCS) paving priority list for Escambia County. The NRCS had listed the County's 25 most impacted sites where dirt road runoff filled stream channels. This site was one of the 25 verified as impaired by FDEP bioassessments. The site's stream habitat improved from 49% to 64% by eliminating road sediment runoff. The invasive exotic Chinese privet shrub had established itself it in the wetlands filled by the previous road sediment runoff.

Significance and Suggestions

This Pritchett Mill Branch site did not meet Class III State Water Quality Standards 62-302 for recreation and the propagation and maintenance of a healthy, well-balanced population of fish and wildlife, apparently due to pesticide application to control mosquitoes in stagnant waters. Paving the stream approaches eliminated dirt road sediment runoff into Pritchett Mill Branch. Rainfall patterns shifted in the fall of 2002 to the wetter El Nino cycle. The riparian zone has been undisturbed in the past 5 years. These conditions have allowed the watershed's fish and wildlife habitat (woody debris, leaf packs, undercut banks, roots, and aquatic vegetation) to begin to return to healthy status. However, Tedder Road was not engineered to allow natural flow at this stream crossing and caused stagnant conditions at the culvert that created mosquito habitat. Standing water invites pesticide application for mosquito control. Resizing the culvert or using a bridge could prevent impounding the stream. It is recommended that Escambia County continue to prioritize paving stream crossings using the NRCS list and that the other 15 Northwest District Counties develop a similar list. Northwest Florida road construction projects crossing streams need road engineers trained in fluvial geomorphology and hydrology to prevent stream wildlife habitat damage and water quality impacts.

Additional Northwest Florida ecosummaries can be found at http://www.dep.state.fl.us/water/bioassess/econwd.htm

---

For more information, please contact
Donald H. Ray
Northwest District Office
160 Government Center, Pensacola, FL 32502
(850) 595-8300 (Suncom 695-8300 x 1126)
E-mail: donald.ray@dep.state.fl.us

Published by the Florida Department of Environmental Protection
Tallahassee, Florida
For more information on the DEP Bioassessment programs, please visit our web site at http://www.dep.state.fl.us/water/bioassess

South Twin Lake near Umatilla

