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

FLORIDA AMBIENT

EcoSummary

Pine Barren Creek below Still Road

August 13, 2002

HEALTHY

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 Pine Barren Creek to assess its biota and wildlife habitat after the former dirt surfaced stream approaches to Still Road were paved using open graded cold mix (OGCM). Paving was completed in February 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=18169

Watershed Characteristics

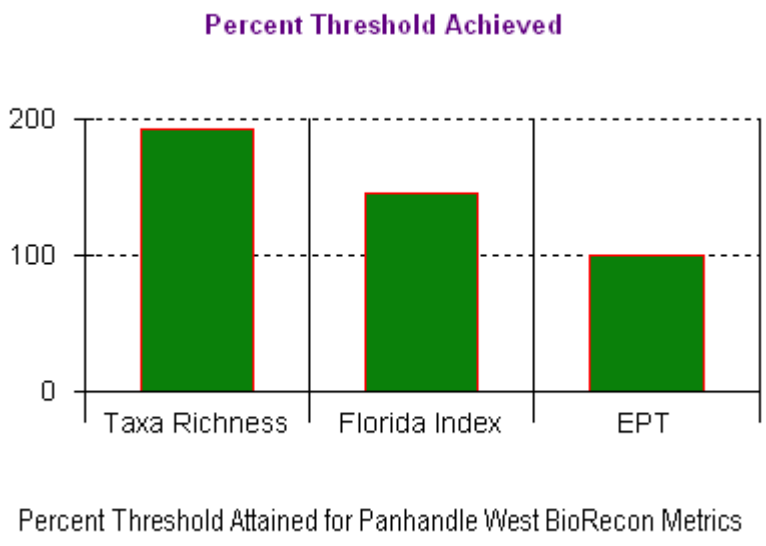
Pine Barren Creek at the bioassessment site is a third order stream, located about 3 miles southwest of Bratt (Lat. 30 degrees 55' 57.2" Long. 87 degrees 27' 24.7"). Pine Barren Creek flows into Pensacola Bay via the Escambia River and Bay. This site (STORET station 33020064) drains the Southern Pine Plains and Hills of subecoregion 65f. The Pine Barren Creek watershed land use was mostly agriculture with some silviculture and a few scattered homes.

Results

The BioRecon indicated a healthy biological community. Results from this post-paved condition

indicated stream community passed thresholds for all 3 biometrics. See biometric results given below.

Biometrics	Value	Threshold
Taxa Richness	48	>= 24
Florida Index	31	>= 22
EPT	18	>= 17



The biological health of Pine Barren Creek below Still Road had effectively doubled after removing the source of road sediment runoff. Taxa richness, Florida Index, and EPT were 22, 16, and 8 before paving the stream approach. Natural gravel substrate had replaced the clay/sand from road sediments runoff immediately below the bridge. The area above the bridge still had low stream velocity and sediment deposits from historical watershed erosion, caused by agriculture, silviculture, mining, and dirt roads. The La Nina drought of the previous four years had limited the stream's sediment carrying capacity. Organic silt from primarily from agricultural runoff covered 86% of the sample stream reach as a result of the drought induced low flow. This sediment load will be eventually transported to Pensacola Bay via the Escambia River and Bay during high flow periods. Although the road sediment source was virtually eliminated, the stream habitat still rated low suboptimal, mainly from organic sediment impacts from agricultural runoff. This Still 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.

Significance and Suggestions

This Pine Barren Creek site met 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 after stopping road sediment runoff. Elimination of sediment runoff from Still Road improved the stream's hydrology (i.e. depth/width ratio) just below the bridge. Elimination of dirt road sediment runoff, and maintenance of a >18 meter riparian forest buffer zone allowed the watershed's fish and wildlife habitat (woody debris, leaf packs, undercut banks, roots, and aquatic vegetation) to recover. However, high organic loading rates from agricultural runoff was present and will wash downstream to Pensacola Bay during periods of normal rainfall. Sediment runoff that exceeds an amount a stream is able to assimilate (i.e. Total Maximum Daily Load or "TMDL") is a common problem across Northwest Florida. The Panhandle is unique to Florida in having topography with highly erodible soils on sloping land affected by intense thunderstorms

and tropical storms. This combination after deforestation causes the area to be susceptible to excessive erosion. Best management practices including expanding buffer zones for wetlands and stream riparian corridors are needed for the Pine Barren Creek watershed. Paving of the road approaches to area streams was found to be an effective method of protecting Northwest Florida's aquatic resources. It is recommended that Escambia County prioritize paving stream crossings using the NRCS list and that the other 15 Northwest District Counties develop a similar list.

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