EcoSummary

Blackwater River below Kennedy Bridge Road
May 26, 2005

FLORIDA AMBIENT

PASS

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.

Introduction



This biological assessment was conducted in support of a request by the Blackwater River State Forest (BRSF) to monitor their proposed stream restoration project and road paving to reduce sediment runoff from Kennedy Bridge Road to the Blackwater River. The BRSF has received a Section 319 Federal grant through the Florida Department of Environmental Protection (Grant #GO126) to implement the restoration. The Grant's focus is "... to improve the water quality of the Blackwater River through a significant reduction of sediment loads moving into the river system from adjacent forest roads in the project area." The BRSF project is a joint effort with the University of West Florida (UWF), FDEP, and United States Fish and Wildlife Service (USFWS). The UWF environmental studies department staff plans to place sediment traps to measure deposition of road runoff to Blackwater River before, during and after project improvements are implemented. The USFWS will provide recording rain gauges, technical assistance, and fish monitoring. FDEP District biologists are providing biological assessment of habitat and invertebrate communities before and after project improvements. Blackwater River, a fifth order stream at the sample reach (STORET # 33030113) drains the Southern Pine Plains and Hills subecoregion 65f. The sample site (Latitude 30 degrees 55 minutes 59.5 seconds North, Longitude 86 degrees 44 minutes 7.0 seconds West) is located about 7 miles northwest of Crestview. Blackwater River is a State listed Class III water body designated for recreation

and the propagation and maintenance of a healthy, well-balanced population of fish and wildlife classified as Outstanding Florida Waters (OFW) under the Florida Water Quality Standards. The Blackwater River flows into Pensacola Bay via the Blackwater and East Bays. The Yellow River Marsh Aquatic Preserve, also listed as an OFW, is located along Blackwater Bay.

Results and Discussion

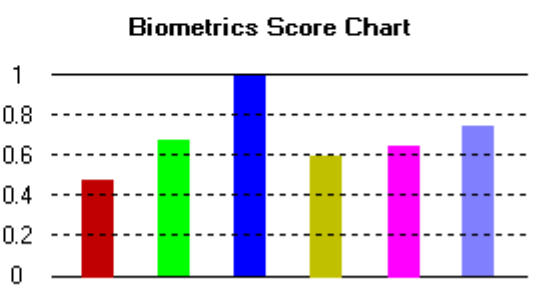
The BioRecon score at Blackwater River below Kennedy Bridge passed with a score of 7 out of 10.

Biometrics	Metric Score
# TOTAL TAXA	0.48
# EPHEMEROPTERA TAXA	0.67
# TRICHOPTERA TAXA	1
# LONG-LIVED TAXA	0.6
# CLINGER TAXA	0.65
# SENSITIVE TAXA	0.74
TOTAL METRIC SCORE :	4.14
/ Correction Factor :	0.6
= BIORECON SCORE :	7

(•) Pass 6 - 10
( ) Fail 0 - 5

BLACKWATER RIVER ABV KENNEDY BRIDGE NE DEP/FW

BioRegion : Panhandle West
Sample Date : May 26, 2005



The total metric score of 4.14 at Kennedy Bridge was below the 4.49 score of a BioRecon performed downstream on the Blackwater River at Peaden Bridge (see website for report http://water.dep.state.fl.us/eswizard/ecosummary.asp?id=705). The total taxa below Kennedy Bridge was lower, 32 versus 36, as was the Florida Index 24 to 35, although EPT, 18 was the same as at Peaden Bridge. Low macroinvertebrate (fish food) productivity was found below Kennedy Bridge, where only 3 of the 32 taxa collected occurred in abundance, 9 were common and 20 occurred rarely. Sediments smothered 86% of potential productive habitat and limited its availability for fish and wildlife. It appeared factors other than more loading of dirt road runoff at Kennedy Bridge caused lower biometric scores than found at Peaden Bridge. Sediment smothering of 92% was slightly worse at Peaden Bridge compared to 86% of habitats affected at Kennedy Bridge. Complaints in the past of algae blooms covering the swimming area below Kennedy Bridge indicated an influence from fertilizing the impounded Hurricane Creek located upstream (see map). Compared to historical reference samples, the Kennedy Bridge biometric scores indicated a reduction in the stream wildlife community (see table below).

SITE	Total Taxa	FI	EPT

Blackwater River Hwy 4	47	45	30
Deadhead log above Hwy 4	46	44	28
Below Peaden Bridge	36	35	18
Below Kennedy Bridge	32	24	18

The habitat assessment score rated 53% (marginal) because of poor conditions for Habitat Smothering, Substrate Diversity (from sediment impacts) and Right Bank parameters for Bank Stability, Riparian Buffer Zone Width, and Riparian Zone Vegetation Quality. The right bank was bare soil devoid of vegetation because of recreation access to the River (swimming area). Substrate Availability rated marginal with 14% productive habitat. Left Bank Stability rated suboptimal, having some small areas of erosion. Left Bank Riparian Buffer Zone Width and Riparian Zone Vegetation Quality also rated suboptimal. Water Velocity and Artificial Channelization rated in the optimal range.

Conclusions

The macroinvertebrate community in the Blackwater River below Kennedy Road was impacted by road sediment runoff compared to background conditions. Best Management Practices previously instituted by the BRSF had reduced sediment runoff. Kennedy Bridge had been elevated above the road approach levels and road swales and turnouts were maintained to limit sediment runoff to the River. Paving the Kennedy Bridge road approaches will reduce maintenance cost to keep the road open and prevent erosion after heavy rainfall. Restoration has good potential to restore fish and wildlife habitat on the left bank and enhance recreation on the right bank. Reducing the road sediment load will re-expose more productive fish and wildlife habitat and diminish unsightly silt and clay deposits on the white sand of the recreational area shoreline.

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For more information on the DEP Bioassessment programs, please visit our web site at http://www.dep.state.fl.us/water/bioassess

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