FLORIDA AMBIENT

EcoSummary

Blackwater River below Peaden Bridge Road

May 25, 2005

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 Peaden Bridge Road to 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 # 33030157) drains the Southern Pine Plains and Hills subecoregion 65f. The sample site (Latitude 30 degrees 52 minutes 55.3 seconds North, Longitude 86 degrees 43 minutes 52 seconds West) is located less than 6 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

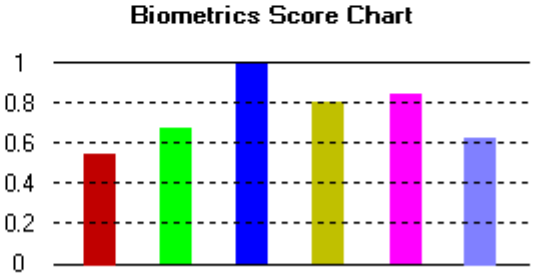
The BioRecon score at this Blackwater River site passed with a score of 7 out of 10.

Biometrics	Metric Score
# TOTAL TAXA	0.55
# EPHEMEROPTERA TAXA	0.67
# TRICHOPTERA TAXA	1
# LONG-LIVED TAXA	0.8
# CLINGER TAXA	0.84
# SENSITIVE TAXA	0.63
TOTAL METRIC SCORE :	4.49
/ Correction Factor :	0.6
= BIORECON SCORE :	7

(•) Pass 6 - 10
( ) Fail 0 - 5

BLACKWATER RIVER BLW PEADEN BRIDGE & PEADEN BRIDGE ROAD EAST SIDE

BioRegion : Panhandle West
Sample Date : May 25, 2005



The sample had total taxa of 36, Florida Index (Cleanwater indicators) of 35, and total EPT (Mayflies, Stoneflies, Caddisflies) of 18. Compared to historical reference samples, biometrics indicated a reduction of the aquatic invertebrate population. The biometrics total taxa, FI, and EPT reported at Blackwater River Highway 4 on 02/15/1977 found a total of 47 45 30 and on 06/10/1999, 46 44 28 were collected on a single deadhead cedar log upstream from Highway 4.

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

Productivity was low below Peaden Bridge, with only 3 of the 36 taxa in the BioRecon sample categorized as abundant, 8 as common and 25 as rare, as sediment load reduced habitat for aquatic fish and wildlife. River stage measured at Highway 4 was normal at 228 cubic per second (cfs) with the mean at 223 cfs. No rain had fallen in the previous 6 days, allowing easy access for sampling. The Habitat Assessment rated 110 of 160 points to score 69%. Habitat Smothering of 92% of habitats caused the only poor rating. The Habitat Smothering

reduced Substrate Diversity and Substrate Availability to marginal. Bank Stability rated suboptimal. The rest of the habitat parameters, Water Velocity, Artificial Channelization, Riparian Buffer Width, and Riparian Zone Vegetation Quality rated optimal. Recreation activities downstream in Blackwater River have been limited by sediment filling the river channel. Canoe livery businesses and recreational boaters in the past few years had complained of sediment impeding navigation below the Blackwater River State Park. In response to complaints in 11/27/01 FDEP biologists observed the channel below the Park at Race Track Landing completely filled, so it would not float a canoe. The area monitored during a basin water quality study in 1980-81 had a 12-foot deep channel. A 1961 Florida Geological Survey channel bottom profile of the lower Blackwater River reported depth varied from 10 feet to 60 feet. They reported lower the 6 miles of the Blackwater River channel had at least 6 holes 35 to 60 feet deep.

Conclusions

Compared with background conditions, the macroinvertebrate community in the Blackwater River below Peaden Road was impacted by road sediment runoff. However, Best Management Practices instituted by BRSF had reduced sediment runoff. These included elevating Peaden Bridge above the road approach levels and maintaining road swales and turnouts to reduce direct sediment runoff to the River. Paving the Peaden Bridge Road approach will reduce long term maintenance cost to keep the road open and also prevent erosion damage during severe rainstorms. Restoration has excellent potential, as habitat conditions were optimal except for parameters affected by sand/clay/silt accumulation. Reducing the sediment load will re-expose productive substrate to restore fish and wildlife habitat.

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

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