EcoSummary

"Morgan" Branch East River Road

March 21, 2000

IMPAIRED

NPS BIOASSESSMENTS

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

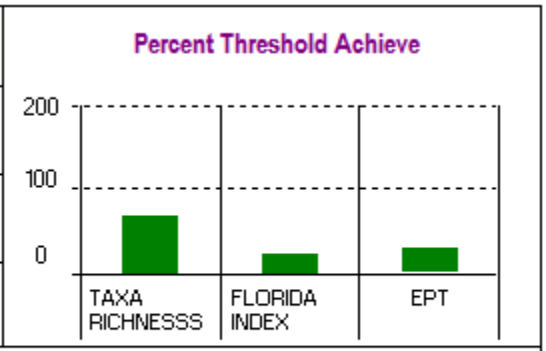


A BioRecon was conducted at this site to assess the impacts of dirt road runoff to the biota and wildlife habitat in "Morgan" Branch. This bioassessment was a partnership with the Blackwater River State Forest (BRSF) and the Gulf Coastal Plain Ecosystem Partnership (GCPEP). Continuous erosion from East River Road, a dirt road with clay fill that forded "Morgan" Branch, resulted in turbidity smothering fish and wildlife habitat. The BRSF planned to restore this stream site by stabilizing the roadbed approach and the forded stream channel. Imported rock and gravel were to replace the existing exposed clay, sand, and silt road and stream channel substrate. The modified stream ford is designed to reduce sediment impacts to waters within the Pensacola Bay basin. A bioassessment was planned to monitor expected improvements to stream health after efforts to minimize sediment runoff from East River Road are completed. Morgan Branch, a second order stream at the sample reach (STORET # 33030110) drains the Southern Pine Plains and Hills subecoregion 65f. The sample site (Latitude 30 degrees 53 minutes 57 seconds North, Longitude 86 degrees 42 minutes 55.6 seconds West) is located about 5 miles northwest of Crestview. Morgan Branch is a tributary to Mare Creek and the Blackwater River, which is 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 indicated an impaired biological community at this site. All three biological indicators failed thresholds established for healthy aquatic ecosystems.

Biometrics	Value	Threshold
TAXA RICHNESS	16	>= 24
FLORIDA INDEX	5	>= 22
EPT	5	>= 17



Values and Percent Threshold Attained for Panhandle West BioRecon Metrics

Macrovertebrate (fish food) diversity and productivity was very low because of sediment impairment. Out of the only sixteen taxa collected at this site, nine taxa were rare, seven taxa common, and none abundant or dominant. The road ford caused clay and silt to smother 99% of the abundant habitat in this reach. This potential wildlife habitat was 46% undercut banks/roots, 30% woody debris, and 4% leaf pack all smothered by road sediment. The Habitat Assessment score barely rated suboptimal (54%) because of poor ratings with the lowest scores possible for Substrate Availability, Habitat Smothering, and Riparian Zone Buffer Zone Width. Road sediment runoff caused those low poor scores. Substrate Diversity and left Bank Stability rated suboptimal. Water Velocity, Artificial Channelization, right Bank Stability, and Riparian Zone Vegetation Quality rated optimal. Morgan Branch above East River Road and the sample reach was impounded by road sediments. This damming action flooded portions of the Wire Grass Hiking Trail and East River Road south of the Morgan Branch. This was despite a record dry February and a La Nina drought condition for the last 3 years.

Conclusions

Because of habitat smothering from East River Road runoff, this Morgan 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. Road stabilization to minimize sediment runoff , using rock placed at proper elevations to allow natural flow and prevent impounding, should improve stream health at this site. Morgan Branch's location in the Blackwater River State Forest can afford protection of its riparian forest by maintaining an 18-meter or greater buffer zone along its stream corridor. This would facilitate the stream's restoration and preservation. The restoration project will enhance the stream reach's fish and wildlife and reduce sediment loading to Pensacola Bay system. In addition, it will improve recreational opportunities such as hiking the Wire Grass Trail that crosses Morgan Branch above the sample reach and boating/canoeing in the Blackwater River. The post-restoration bioassessment has been not performed as of July 2005 because of hydrologic

impacts from road construction. The rock fill was placed at an elevation too high, which caused additional upstream flooding. The downstream sample reach was still receiving clay sediment runoff from East River Road.

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