



EcoSummary

West Sandy Creek, Walton County

August 12, 1998



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

Purpose

A bioassessment of West Sandy Creek was conducted to determine the macroinvertebrate community structure and health of this tributary of Andrews Mill Creek, part of the Choctawhatchee River basin. Also, this BioRecon compliments assessments done on Juniper Lake, an impoundment in this watershed.

Background

West Sandy Creek, a 2nd order stream, is located in Walton County. The headwaters originate on the north side of De Funiak Springs. The primary land use in this watershed is silviculture; however, the upper third receives runoff from urban sources associated with the city of De Funiak Springs. A significant proportion of the upper half of the stream becomes unconfined along its northeasterly course and spreads out into wetlands. The stream discharges into Andrews Mill Creek, a 3rd order tributary of Sandy Creek, less than a mile east of state road (SR) 183; this assessment was done upstream of SR 183. This stream receives the overflow from Juniper Lake, an impoundment with a moderate residential density around the circumference. This lake has been culturally enriched; the likely sources are primarily fertilization of lawns and septic tanks.

Results

Certain physical and chemical data were collected using a Hydrolab multiparameter probe, in situ. Those data were typical for flowing streams in the western panhandle. Of particular interest, dissolved oxygen was good at 7.5 mg/L. The habitat assessment consists of eight components and is divided into two principle parameters, primary and secondary. The primary parameter components consider in-stream habitat quality, quantity, stability and current. The primary parameter was evaluated suboptimal, corresponding to a 73 % score. The component that scored the lowest was "habitat smothering." Disturbed vegetation and soil in panhandle watersheds is possibly the single greatest impact affecting the biological integrity of streams and many lakes resulting in habitat loss. The secondary parameter components consider ancillary factors, for example, quality and quantity (depth)

of riparian vegetation, bank stability and possible human alteration of stream morphology. The secondary parameter averaged in the optimal ranking, corresponding to an 84 % score. The overall habitat scoring of the 100 m (328 ft) stream reach in this bioassessment resulted in an overall score of 78 %. The macroinvertebrate community reflected the overall good quality of the habitat and intact riparian vegetation zone. All community health metrics passed. The total number of EPT (mayflies, stoneflies and caddisflies) taxa was 20. The specific breakdown of this group is eight mayflies, three stoneflies, and nine caddisflies. As a group, the EPT are considered sensitive to human induced pollution, particularly nutrification. Forty taxa were identified from this assessment with 19 of those Florida Index taxa. The Florida Index is a biotic index that ranks taxa according to their sensitivity to pollution, primarily relating to organic enrichment and related ramifications. The trophic (eating) structure of this community was diverse with shredders, scrapers, filterers, predators and scavengers present.

Significance

Overall, the BioRecon indicates the stream is healthy and in good shape. This stream catches some stormwater related to urban land uses. However, the majority of the surrounding land has relatively low impact land uses and a mostly intact riparian zone is maintained. As the area grows, these data offer baseline information that may be useful to planners, governmental bodies and concerned citizens when making decisions that may impinge on the water quality and biological health of the watershed. These data also add specific knowledge of the condition of watersheds in the Northwest District.

Suggestions

Retention of stormwater from roadways and maintenance of an intact buffer zone along the stream corridor will be paramount in maintaining a healthy aquatic environment. Construction in the watershed should be done using best management practices (BMPs) that greatly reduce the impacts associated with soil erosion and maintain an adequate buffer zone.

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