



EcoSummary

Fletcher Creek, Escambia County
August 11, 1998 - March 8, 1999



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

Purpose

A bioassessment of Fletcher Creek was conducted to determine the community structure and health of this 2nd order tributary of Cotton Lake (Escambia River). This bioassessment was conducted to compliment the lake (oxbow of Escambia River) bioassessment.

Background

Fletcher Creek is located in northern Escambia County near Molino. This stream drains an area used primarily for silviculture, crop production and pasture. Approximately two-thirds down from the headwaters it crosses U.S. Highway 29; however, the stream channel could not be found upon inspection and is assumed covered by road construction. The area where it should flow was saturated and the water table above ground. About 1 mi (1.6 km) downstream of U.S. Highway 29 a railroad exists. The area of stream where the trestle crosses has been dug out affecting the flow and habitat of the stream. The lower one-third is in a natural hardwood wetland forest.



Results

Physical and chemical data from this location was typical for natural streams in this region; however, dissolved oxygen (DO) was slightly below 5.00 mg/L at 4.92 mg/L. This low DO may have been a result of stagnant water that entered from the pond habitat created by the trestle construction. While

the water was clear and tannic, one cannot exclude the possibility of higher than normal oxygen consumption from substances used in silviculture or crop production activities in the upper half of the watershed. The habitat scoring of the 100 m (328 ft) stream reach in our bioassessment resulted in an overall score of 79 %. This tabulation of habitat ratings is composed of two main components. The primary habitat focuses on in-stream quality and quantity of habitat and the important velocity attribute. This primary score was 65 %, with the average corresponding to a suboptimal ranking. This low primary component score was mostly a result of silt smothering of the habitat. The secondary habitat assessment focuses on more ancillary affects, principally concerning riparian zone quality and integrity along with related bank stability and human-affected alterations to the stream channel, that is canalization. This secondary score was 94 % with the average corresponding to an optimal rating. Bank stability was the one category that was below this ranking, it received a suboptimal rating. Some braiding resulted due to alterations from beaver activity. Average water velocity was thus affected and likely had deleterious ramifications on the rheophilic invertebrate community. The macroinvertebrate community reflected the visible impacts of this stream. Two of three metrics failed; taxa richness was the one metric to pass. The EPT (mayflies, stoneflies and caddisflies) metric was five, well below the target minimum of 17. This number represents one taxon each of the stoneflies and mayflies and three caddisfly taxa. As a group, the EPT are considered sensitive to human caused pollution, particularly nutrification. While there may be few representatives in certain classifications, the trophic (eating) structure of this community was represented by expected feeding groups.

Significance

This stream is impacted by a myriad of human activities in the watershed. Probably the two impacts of greatest significance are the disruption of the stream continuum compromised by the design of U.S. Highway 29 and the channel/flow alterations as a result of the railroad trestle construction. These data add specific knowledge of the condition of watersheds in the Northwest District (NWD).

Suggestions

Restoring the natural flow regime and channel characteristics to the upper two-thirds of the stream, and at the railroad trestle, would significantly aid in recovery of the biological integrity of this stream. Also, best management practices in the agricultural and silvicultural operations would help protect the watershed.

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