A site map can be viewed by clicking on the report site name.

EcoSummary

Blackwater Creek at CR 44A
September 4, 2001

EXCELLENT

ECOREG REF STREAMS

Stream Condition Index (SCI): The standardized biological assessment tool used by FDEP biologist to indicate ecosystem health and identify impairment as compared to reference (natural) conditions of streams within the various ecoregions of Florida

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.

Purpose



Blackwater Creek is one of the streams used by Central District biologists as a "best attainable condition" reference site for comparison with other streams in this portion of the state. The results of this bioassessment will be used to monitor the health of Blackwater Creek, and will also be a part of the continuing refinement of FDEP's Stream Condition Index (SCI) bioassessment methodology.

Watershed Characteristics

Named for its very darkly tannin-stained water, Blackwater Creek (one of several in Florida with this name) begins in equally dark 1130-acre Lake Norris in northeast Lake County. The third-order stream flows southeast for about 10 miles, then east-northeast another 7 or 8 miles before it joins the Wekiva River less than a mile upstream of the Wekiva's confluence with the St. Johns River near the Volusia County town of Debary.

Land use in the 91.4 square mile drainage basin is generally not very intense. There are relatively large areas of sand pine and pine flatwood uplands and forested and herbaceous wetlands. A good portion of the remainder of the land is used for pasture. Residential

development is fairly sparse, and is mainly concentrated near Lake Norris.

Results

Blackwater Creek received a "very good" rating on the SCI. There were 35 different macroinvertebrtae taxa collected in the sample. Of these, six were caddisflies and mayflies (along with stoneflies, collectively termed the "EPT" group). Due to the presence of a number of pollution-sensitive taxa present, the site scored a 15 on the Florida Index. The most common macroinvertebrate found in the subsample (10.6%) was the riffle beetle *Dubiraphia vittata*.

Water chemistry results were not as good as the biological assessment. Nutrient levels in Blackwater Creek ranged from median to very high, when compared to other Florida streams. Ammonia and total Kjeldahl nitrogen were particularly elevated. Total sulfates and turbidity were also quite high. The dissolved oxygen level was low, at 2.61 mg/L, which is a violation of state standards, but is probably also natural in such a slow-flowing darkly tannic situation as this. The color was very dark, measuring 400 PCU. Other chemical and physical measurements were normal.

The creek earned a fairly good habitat assessment score of 126 out of a possible 160 points, or 79%. Low substrate availablility and water velocity, coupled with a fair amount of habitat smothering, kept Blackwater Creek from receiving a very high score.

Significance

These results suggest that, despite the high nutrients, sulfates, and turbidity, Blackwater Creek has so far remained ecologically healthy. These elevated levels are a reason for concern, however, and should be further examined to determine the nature and extent of the problem.

Suggestions

To help preserve the ecological health and vitality of this system, additional agricultural, residential, or other development in the watershed - especially in close proximity to the stream - should be discouraged. Those who own property near the stream should maintain adequate riparian buffer zones between upland developments and the creek. Septic and sewer systems on properties adjacent to the stream should be maintained to prevent the introduction of bacterial and other contaminants into Blackwater Creek.

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