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

EcoSummary

Davenport Creek at Old Lake Wilson Road (CR 545)

August 5, 2002

TMDL STUDIES

EXCELLENT

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



Davenport 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 Davenport Creek, and will also be a part of the continuing refinement of FDEP's Stream Condition Index (SCI) bioassessment methodology.

Watershed Characteristics

Originating in 178-acre Lake Davenport just southwest of Walt Disney World in Osceola County, Davenport Creek flows in a southeasterly direction, joining Reedy Creek several miles north of where US Highway 17/92 crosses it. Land use in the 29.5 square mile watershed is about 70% natural wetlands. Roughly a fourth is used for agriculture (mainly citrus). Most of the remainder is low density residential development. The immediate area of the sampling site is wooded, but upstream it flows through a cattle pasture which is currently being converted into a large housing development.

Results

The results of the bioassessment were good. Davenport Creek received an "excellent" rating on the SCI. There were 29 different macroinvertebrate taxa collected in the subsample, including six that are members of the the water quality sensitive EPT group (larval mayflies, stoneflies, and caddisflies). The Florida Index score for the site (based on the number of pollution-intolerant species present) was 16. The most common macroinvertebrate found in the sample was the midge *Polypedilum flavum*, at 17.7%. Blackflies of the genus *Simulium* were also common, making up 15.9% of the sample.

Habitat assessment results were also good. The site received a score of 120, out of a possible 160 points, or 75%, on the assessment. This placed it in the optimal category.

Water chemistry results were not as good. Most nutrient levels were high. This was especially true with total Kjeldahl nitrogen (TKN), which was present at a level of 3.0 mg/L, which puts it in the 95th percentile compared to other Florida streams. Bacteriological sampling showed similar results. Total and fecal coliforms were measured at concentrations of 1000 and 163 colonies per 100 ml of water, respectively. Both values are quite high, but neither is a violation of state water quality standards. Turbidity, chloride, and sulfate measurements gave low readings, however.

Significance

The diverse and robust macroinvertebrate community and good habitat assessment suggest that Davenport Creek is currently in good ecological health. The high nutrients and coliforms do not appear to have negatively affected the health of the biotic communities present.

Suggestions

Increasing development in the watershed is a cause for concern. Despite the presumption that modern stormwater treatment systems will be employed, new homeowners in the area should make special efforts to avoid introducing pesticides, fertilizers, sediments, and bacteriological sources into the creek. Continued monitoring of the creek is important.

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