



EcoSummary

Big Creek at Lake Nellie Road

January 31, 1997



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

Purpose

Big Creek is one of only a few streams within the Lake Wales Ridge Ecosystem Management Area (EMA) which lie in FDEP's Central District. One goal of this sampling was to characterize the health of this water body for use by the Lake Wales Ridge EMA working group. This data is also useful in further refining biorecon methodology. Big Creek flows into Lake Louisa, so the information should be of interest to Lake Louisa State Park, as well.

Background

The headwaters of Big Creek are in the Green Swamp near the Polk/Lake County line west of the intersection of US Highways 27 and 192. It flows generally in a northern direction until it empties into the south end of Lake Louisa several miles south of the city of Clermont. About 55% of the Big Creek watershed is natural land. Agriculture (mainly citrus) makes up another 30% of the land use. About 10% is pasture land. Only about 5% is residential. The sampling site is located just downstream of Lake Nellie Road, a short distance upstream of Lake Louisa.



Results

The biocon assessment found Big Creek to have a healthy macroinvertebrate community. There was a total of 29 different macroinvertebrate taxa collected, six of which were from the sensitive EPT group (larval mayflies, stoneflies, and caddisflies). The stream received a Florida Index score of 19, which is very good for small streams in this area of the state. The EPT fauna was almost exclusively caddisflies. The larval odonates (dragonflies and damselflies) and dipterans (flies) were also well represented here. The only mollusc was an ancyloid limpet. This type of macroinvertebrate assemblage seems to be common in dark, low pH streams. (See Ecosummary on Roberts Branch at Curryville Road, Seminole County). The dissolved oxygen level was 4.7 mg/L, which is below the state standard of 5.0 mg/L, but this is a natural condition in streams of this type. The pH was quite low: 4.93 su, making the water very acidic, and probably accounting for the scarcity of molluscs, whose calcareous shells would be dissolved by such low-pH water. The water was clear and tannic. Visibility was to the bottom of the stream. The aquatic macrophyte community was fairly diverse also, with seven different emergent aquatic plants noted at the collection site. A habitat assessment performed at the site scored 119 out of a possible 145 points, putting it in the lower part of the optimal category. Low water velocity and less than optimal riparian buffer zone on one side decreased the habitat score somewhat.

Significance

The results of the biocon screening indicate that the macroinvertebrate community is quite healthy at Big Creek. Numerous good water quality indicator species and high diversity suggest good ecological fitness. As a contributor to the state park's Lake Louisa (along with intermittent Little Creek to the west), it is important that Big Creek remain healthy. At this point, it appears to be faring well.

Suggestions

The sampling site is located at a dirt road. There was some evidence of erosion from the road. Elimination of road erosion would help to maintain the good health of Big Creek. Future residential or other development in the watershed should be done in such a way as to safeguard this watershed from degradation.

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