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

EcoSummary

Lake Fairview in Orlando

August 13, 2002

GOOD

LAKE BIOASSESSMENTS

Lake Condition Index (LCI): A developmental biological assessment tool used by FDEP biologist to indicate ecosystem health and identify impairment in Florida lakes

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



Lake Fairview is one of many strongly urbanized lakes in the Orlando metropolitan area. The objectives of this investigation were to evaluate the current level of ecological degradation of Lake Fairview and to provide data useable in FDEP's continuing lakes biological assessment criteria (biocriteria) development. Prior to this time, Lake Fairview was last sampled by FDEP on September 1, 1998. Overall good results were found at that time.

Watershed Characteristics

Lake Fairview is located in the northwestern part of Orlando, and is bordered on three sides by Lee Road, Edgewater Drive, and US Highway 441 (Orange Blossom Trail). Land use in the vicinity of the 386-acre lake is mostly medium-density residential development, with some high and low density residential and some commercial properties within the watershed. A city park located at Lake Fairview's northwest corner is the site of a bathing beach, boat ramp, and other recreational facilities. Lake Fairview is composed of one large lobe to the north and two substantially smaller ones to the south connected in chain-like fashion by rather narrow canals.

Results

Biologists from FDEP Central District's Watershed Management and Monitoring section carried out biological and water chemistry sampling at Lake Fairview on August 13, 2002. In addition, *in situ* physicochemical measurements were made using a multimeter and an assessment of lake habitat was performed.

The results of the biological sampling, which consisted of 12 petite ponars grabs at evenly spaced locations throughout the lake, indicated a good benthic macroinvertebrate community. Twenty different species were collected: 2 mollusks, 10 dipteran (fly) larvae (about 53% of the sample), 3 water mites, 1 caddisfly larva, and 4 segmented worms. The most abundant macroinvertebrate found in the sample was the larval chironomid midge (a.k.a. "bloodworm") *Polypedilum halterale* group, which constituted about 34% of the sample. Lake Fairview received a good rating on the benthic portion of FDEP's Lake Condition Index. Invertebrate community diversity was rated as moderately high by the Shannon-Weiner diversity index, receiving a score of 3.14. There were 6 points scored on the Hulbert Index, a ranking scale based on the number of pollution-intolerant macroinvertebrate species present. This score places it at the low end of the "moderately altered" category for Florida lakes.

Water chemistry results were generally good. All nutrient levels were low to moderate. Physicochemical measurements indicated fairly high pH (8.04 su) and a daytime dissolved oxygen concentration of 7.02 mg/L. The Secchi depth (a measure of water clarity) was good, at 2.7 m, allowing submerged macrophytes to grow on the bottom in many spots.

The habitat assessment score was somewhat low (64 out of a possible 100 points) largely due to a strongly altered shore zone and intense upland land use (mainly medium-density residential development).

Significance

These results suggest that, despite its urban setting, Lake Fairview remains in fairly good ecological health. Although somewhat lower than the results found in 1998, the diversity of macroinvertebrates in the lake point to a relatively stable ecosystem. The low nutrient levels and good Secchi reading suggest that nutrient enrichment is not a severe problem in Lake Fairview at this time. The low habitat assessment score, however, attests to the extensive development in this lake's watershed.

Suggestions

Restoration of the shore zone of Lake Fairview, if possible, as well as preservation of the remaining unaltered shore, would be helpful in mitigating some of the effects of the intense development in the area. In addition, effective new stormwater retention systems, as well as retrofit of older ones, would help to curb the effect of non-point source pollution in the lake. Lakeside property owners should use fertilizers, herbicides, and pesticides sparingly, if at all.

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