EcoSummary

Lake Huntley in Highlands County

June 29, 2004

VERY GOOD

TMDL STUDIES

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

The objective of this investigation was to evaluate the biological condition of Lake Huntley, using the Florida Lake Condition Index (LCI).



Watershed Characteristics

Flow-through Lake Huntley (680 ac), east of the Town of Lake Placid in Highlands County, connects via canals with Lake Clay to the north (outflow) and Lake Grassy to the south (inflow). Landuse within 500 m of the lake is primarily urban/residential (36%) and grove (36%), and roughly 23% remains in a natural state. The southern end is marshy, western lakefront is largely residential; and the eastern side has a trailer park but is otherwise mostly undeveloped. Groves are situated to the north and west.

Results

Lake pH was 6.9 and Secchi depth was 1.7 m. The primary nutrients, nitrite-nitrate and phosphorous, were at undetectable levels.

Thirty-three taxa were collected in the mid-lake phytoplankton sample, and the estimated density was very low at 490 cells/ml. The greens *Scenedesmus* and *Chlorella*, and an unidentified yellow-green alga, predominated. AGP was low (0.8 mg dry wt./L), and

chlorophyll *a* concentration was at an undetectable level.

A diverse macroinvertebrate community (27 taxa), dominated by chironomid midges and oligochaete worms, occupied the sublittoral zone, a zone characterized by silty to muddy sand with scattered *Nitella* (stonewort). The dominant species (those accounting for 5% or more of the total number) included the tubificid worm *Limnodrilus hoffmeisteri*, the burrowing mayfly *Hexagenia* sp., and the exotic Asian clam *Corbicula fluminea*. Based on the average summer benthic density of 3935/m^2 for Highlands County lakes, the density in Lake Huntley was somewhat below that at 2100 individuals/m^2. Shannon-Weaver diversity was high at 3.75. Dissolved oxygen concentration near the bottom of the sublittoral zone averaged 7.0 mg/L.

Lake Huntley scored 66 points (out of a possible 140 points) on the habitat assessment, which evaluates seven parameters: Secchi depth, in-lake vegetation quality, stormwater inputs, bottom substrate quality, lakeside adverse human alterations, upland buffer zone quality, and adverse watershed landuse. Four assessment categories are recognized: Optimal, suboptimal, marginal, and poor. Huntley's 66 points place the lake in the marginal category overall. It received low scores on all but Secchi depth, bottom substrate quality, and vegetation quality.

Significance

Despite the marginal habitat assessment, the biological condition of Lake Huntley was very good, scoring 86 points. [The "very good" category is defined as scores equal to or greater than 50.]

Suggestions

Because lakefront is residentially developed, lakeside property owners can lessen the impact to their lake by reducing or even eliminating the use of pesticides, herbicides, and inorganic fertilizers - all of which can be carried into the lake during storm events. Restoration of shoreline vegetation, and preservation of that which remains, would be beneficial as well.

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