

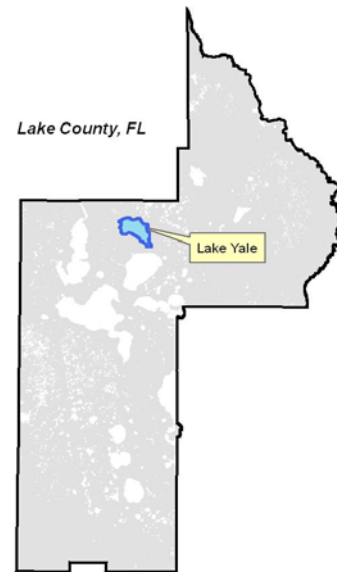


Lake Yale EcoSummary May & June 2006

Lake Condition Index (LCI): A biological assessment tool developed by the Florida Department of Environmental Protection to indicate ecosystem health and identify impairment in Florida lakes

Watershed Characteristics

Located in central Lake County, the 4,013-acre Lake Yale is surrounded largely by a mix of residential, institutional, natural (wetlands and forest/ rangelands) and agricultural lands. The single largest external phosphorus source for Lake Yale was atmospheric deposition, accounting for about 43% of the estimated load. The largest controllable phosphorus sources were urban-residential runoff (20% of the external load), septic tank effluents (8.7% of the external load), and agricultural runoff (6.2% of the external load). Because Lake Yale is larger than 1000 acres in size, two separate LCIs were performed, one on the north end and one on the south end. The 12 benthic grabs for Lake Yale South were taken in May of 2006 and 12 benthic grabs for Lake Yale North in June of 2006.



Results

Lake Yale North and South both received a good rating on the LCI. Seventeen different macroinvertebrate taxa were collected on the north portion and eighteen taxa on the south. On Lake Yale North and South, the single most abundant macroinvertebrate species collected in 2006 was the Amphipod, *Hyalella azteca* which comprised 38.8% and 50.8% respectively, of the total macroinvertebrate population. The previous year both portions of Lake Yale had received poor scores and the most abundant species of macroinvertebrate present was the pollution tolerant midge *Glyptotendipes paripes*. Diptera (midges) were the predominate taxa present in the north portion of Lake Yale and comprised 51.4% of the total population of macroinvertebrates in the north portion of the lake. It is not uncommon in periods of drought, which can reduce the amount of stormwater entering the lake, to see water quality improvements to a water body. Most of the benthic samples taken in the north and south portions of the lake were predominately sand while about half of the southern lake samples also contained coarse particulate organic matter and muck. Lake Yale North and South LCIs received a Hulbert Index score of 6. The Hulbert Index is based on the number of pollution-intolerant lake macroinvertebrate species present. Therefore, higher Hulbert Index scores indicate a greater number of pollution sensitive species

present or better water quality. Lake Yale had 1 species of Trichoptera (caddisflies) *Oecetis*, the amphipod *Hyalella azteca*, and several Chironomidae including *Procladius*, and *Pseudochironomus* present in the benthic samples which are sensitive to pollution. The previous year, although there was a fair number of Hulbert Index point species, the lack of EOT species or Ephemeroptera (mayfly), Odonata (dragonfly and damselfly) and Trichoptera (caddisfly) present in the samples caused the overall LCI score to drop and resulted in a poor rating. The scores in 2006 improved with the presence of *Ceanis* (mayfly), and increased percentages of the amphipod *Hyalella azteca* coupled with lower percentages of pollution tolerant species. The improvement in LCI scores over the previous year, were enough to result in good scores for both the North and South portions of Lake Yale.



A close up view of the head of Tanypodinae *Procladius*

Significance

The water source for Lake Yale is principally ground water and rainfall. Lake Yale drains into Lake Griffin. Over the last several years, the Florida Fish and Wildlife Conservation Commission has worked to improve lake habitat by restoring native aquatic plant communities (such as spatterdock and bulrush) in Lake Yale. Improvement of the aquatic plant community is an important step toward the improvement of the benthic macroinvertebrate community (and resulting LCI scores).



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References

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