



Lake Beauclair EcoSummary

November 2005

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

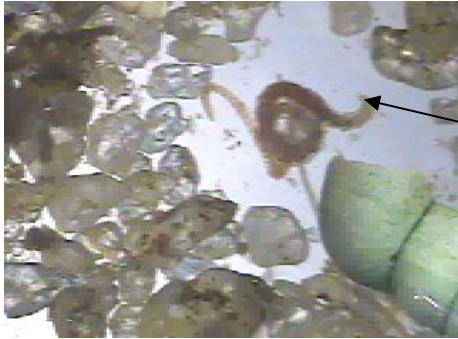
Located in central Lake County with a portion of the lake located in Orange County, 1119-acre Lake Beauclair is surrounded largely by a mix of residential, natural and recreational lands. Lake Beauclair has nutrient loadings more than four times that of any other lake in the Upper Ocklawaha River basin largely due to incoming flow from the Apopka-Beauclair Canal. Lake Beauclair has a turnover rate of approximately 56 days (or 6.5 turns/year). Because Lake Beauclair is larger than 1000 acres in size, two separate LCIs were performed, one on the east side and one on the west. The 12 benthic grabs for Lake Beauclair East were taken in October 2005 and the 12 benthic grabs for Lake Beauclair West were taken in November 2005.



Results

Both sides of Lake Beauclair received a very poor rating on the LCI. Fourteen different macroinvertebrate taxa were collected on the west side, and twelve on the east. On Lake Beauclair East, the most abundant macroinvertebrate collected was the oligochaete, tubificid worm *Limnodrilus hoffmeisteri*. Oligochaetes made up 44% of macroinvertebrates collected on Beauclair East. The most abundant macroinvertebrates collected on Lake Beauclair West were the Chironomid *Cladotanytarsus sp.B* and the oligochaete worm *Limnodrilus hoffmeisteri*. They made up 55% and 31% of the total number of macroinvertebrates collected on Lake Beauclair West, respectively. Tubificids frequently form dense populations in organically enriched habitats with a mucky substrate tending toward anoxic conditions. The sediment in all of the 12 benthic grabs in Beauclair East was predominately muck and coarse particulate organic matter. Beauclair West, which is further from the Apopka-Beauclair canal tributary entrance, was predominately sand in 8 of the 12 benthic/sediment grabs. The dipteran (fly) larvae present consisted of pollution tolerant species such as *Cladotanytarsus sp.B*, *Chaoborus punctipennis* and *Glyptotendipes paripes*. Lake Beauclair East and Lake Beauclair West were given Hulbert Index

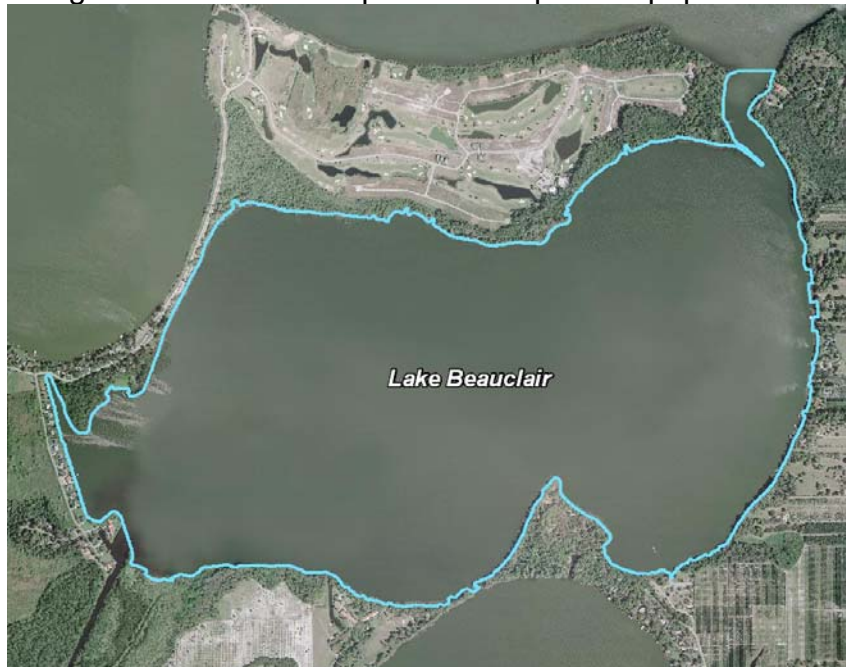
scores of 1 and 2, respectively. The HI is based on the number of pollution-intolerant lake macroinvertebrate species present.



A *Limnodrilus hoffmeisteri* from Lake Beauclair

Significance

The Lake County Water Authority has an off-line alum system or NuRF (Nutrient Reduction Facility) project planned that would reduce the total phosphorus load in Lake Beauclair by as much as 81% annually. If the project is constructed, Lake Beauclair should improve from a nutrient-rich hypereutrophic lake to a considerably 'healthier' mesotrophic lake. This could increase recreation on the lake by eliminating persistent algal blooms, eventually leading to reestablishment of beneficial vegetation and a more productive sportfish population.



For more information, please contact:

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