



Lake Dora EcoSummary

November 2004 – January 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, the 4,475-acre Lake Dora is surrounded largely by a mix of residential, industrial and agricultural lands. Discharges from Lake Beauclair were the dominant nutrient sources for Lake Dora representing 76.5% of estimated Total Phosphorus loading and 85.9% of estimated Total Nitrogen loading. 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. The largest other sources of nutrient loading into Lake Dora were runoff from the residential areas (9.3% TP and 3.4% TN loading). Because Lake Dora is larger than 1000 acres in size, three separate LCIs were performed, one on the east lobe, one center and one on the west lobe. The 36 benthic grabs for Lake Dora were taken between November 2004 and January 2005.



Results

Lake Dora East received a very poor rating on the LCI. Lake Dora Center and West received poor ratings on the LCIs. Six different macroinvertebrate taxa were collected on the east lobe, ten taxa in the center and twelve taxa on the west. On the Lake Dora East LCI, the most abundant macroinvertebrates collected were the oligochaete, tubificid worm *Limnodrilus hoffmeistri* and the midge *Cladotanytarsus sp. B*. Oligochaetes made up 40%, 34% and 17% of macroinvertebrates collected on Dora East, Center and West, respectively. Tubificids frequently form dense populations in organically enriched habitats with a mucky substrate tending toward anoxic conditions. *Cladotanytarsus sp.B* was the predominate Chironomid present in all three sections of Lake Dora. The sediment in all of the 36 benthic grabs in Beauclair East were predominately muck, sand and coarse particulate organic matter. Lake Dora West, which is furthest from the Apopka-Beauclair canal tributary entrance, had the greatest density and diversity present in the macroinvertebrate population. Lake Dora East and Center LCIs received Hulbert Index scores of 0. Lake Dora West

received a Hulbert Index score of 1. The HI is based on the number of pollution-intolerant lake macroinvertebrate species present.



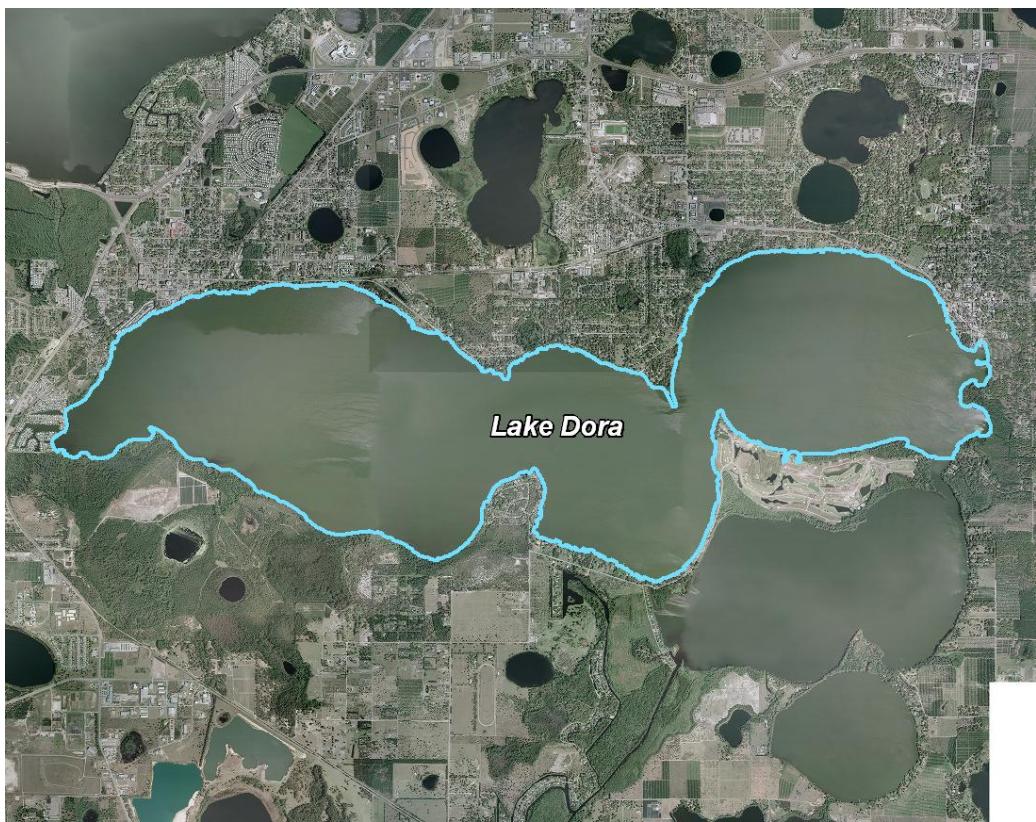
A *Cladotanytarsus sp.B* from Lake Dora

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 concentration in Lake Beauclair by as much as 81%. This could have a significant positive impact on water quality in Lake Dora as well. If the project is constructed, Lake Beauclair should improve from a nutrient-rich hypereutrophic lake to a considerably 'healthier' mesotrophic lake and discharges from Lake Beauclair into Lake Dora would consequently be dramatically improved with regard to reduced nutrient loading. 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.

Suggestions

Lakeside property owners can help keep the lake healthy by minimizing, or eliminating, the use of pesticides, herbicides and inorganic fertilizers, by preserving native shorezone vegetation, by minimizing impervious surfaces on their properties, by being careful with the use and storage of petroleum products, and by properly maintaining septic or sewer systems.



For more information, please contact:

Sandi Hanlon-Breuer - Lake County Water Authority 107 North Lake Avenue Tavares, FL 32778
(352) 343-3777 ext. 26
Email:sandihb@lcwa.org