



## Lake Dora EcoSummary November 2005– January 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 4,475-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 2005 and January 2006.



### Results

Overall LCI scores slightly improved over last year's scores on all 3 sections of Lake Dora. During periods of drought it is not uncommon to see some improvements in lake water quality. Lake Dora Center and East received a poor rating on the LCIs. Lake Dora West received a good rating on the LCI. Thirteen different macroinvertebrate taxa were collected on the east lobe, sixteen taxa in the center and eighteen taxa on the west. On the Lake Dora East LCI, the most abundant macroinvertebrates collected were the oligochaete, tubificid worm *Limnodrilus hoffmeisteri* and the midge *Cladotanytarsus sp. B*. Oligochaetes made up 49%, 21% and 15% 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 1 and 4, respectively. Lake Dora West received a Hulbert Index score of 8. 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 discharge from Lake Apopka by as much as 81% annually. Elimination of such a large upstream source of total phosphorus could dramatically improve water quality in Lake Dora and other downstream lakes. This could increase recreation on the lake by eliminating persistent algal blooms, eventually leading to reestablishment of beneficial vegetation, improved pollution sensitive macroinvertebrate populations with increased macroinvertebrate diversity 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