



Lake Dora EcoSummary

November, December 2016 & January 2017

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 12 benthic grabs for Lake Dora East were taken in November 2016, 12 benthic grabs for Lake Dora Center were taken in December 2016 and 12 benthic grabs for Lake Dora West were taken in January 2017.



Results

Overall LCI scores increased over last year's scores on the east, the center and west portions of Lake Dora. Lake Dora East improved from a very poor rating to a poor rating on the LCI. Lake Dora Center and West maintained improved poor ratings on the LCIs. Improved scores were due to increased diversity, decreased percentage of Diptera present and an increase in pollution sensitive species present. Twelve different macroinvertebrate taxa were collected on the east lobe, fourteen taxa in the center and sixteen taxa on the west. On the Lake Dora East LCI, the most abundant macroinvertebrates collected were the midges *Cladotanytarsus* sp. A and *Cladotanytarsus viridiventrius* (previously named *Cladotanytarsus* sp. B). *Cladotanytarsus viridiventrius* made up 48%, 8% and 12% of macroinvertebrates collected on Dora East, Center and West, respectively. The snail *Hydrobiidae* was the most abundant macroinvertebrate present in Dora Center and comprised 32% of the total macroinvertebrate population. The sediment in all of the 36 benthic grabs in Lake

Dora were predominately muck, sand and coarse particulate organic matter. Lake Dora East, Center and West LCIs received Hulbert Index scores of 1, 2 and 6, respectively. The HI is based on the number of pollution-sensitive lake macroinvertebrate species present. Lake Dora West demonstrated the most dramatic improvement in the LCI score and had 4 pollution sensitive species present including the caddisfly, *Oecetis nocturna*.

LCI SCORES

	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2010</u>	<u>2013</u>	<u>2016</u>
Dora East	15.39	29.18	14.14	16.90	20.59	16.22	18.55
Dora Center	26.43	34.02	27.36	16.52	26.55	27.24	28.35
Dora West	22.20	41.74	26.15	20.58	12.55	18.87	34.46

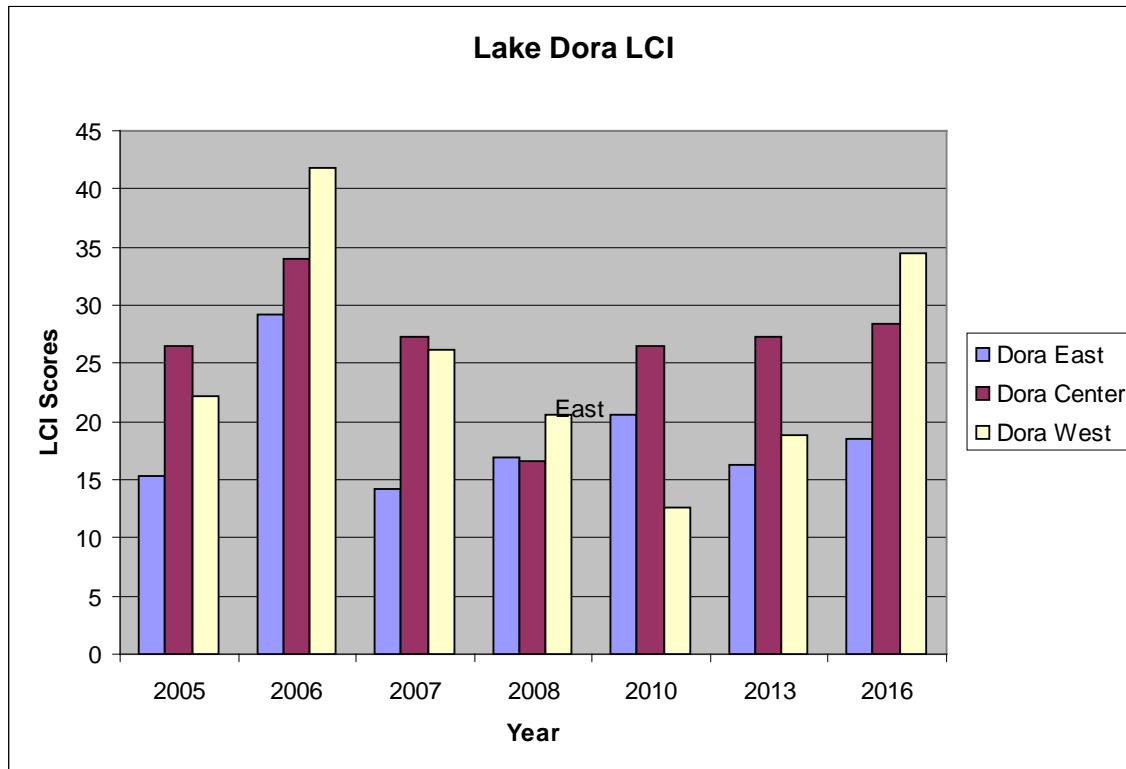




Photo courtesy of Dana Denson RCID

A *Cladotanytarsus viridiventrius* from Lake Dora

Significance

The Lake County Water Authority has an off-line alum system or NuRF (Nutrient Reduction Facility) located on the Apopka-Beauclair Canal that came online in March of 2009. This will reduce the total phosphorus load (from Lake Apopka) by as much as 81% annually. This could increase recreation on the lakes by eliminating persistent algal blooms, increasing water clarity and eventually leading to reestablishment of beneficial vegetation and a more productive sportfish population. The flow from Lake Apopka has been low since 2006 (<10 cfs) with periods of time when flows have been completely cut off by the SJRWMD due to low lake levels in Lake Apopka. Over time and with increased flow (with increased rainfall), improvements to the lakes in the Harris Chain, should improve. In addition, the LCWA completed dredging (June 2013) in Lake Beauclair where high levels of phosphorus (the principal polluting nutrient), had accumulated in the sediment over the decades from sources originating in Lake Apopka. The Lake County Water Authority will continue to monitor the macroinvertebrates in Harris Chain of Lakes in order to assess the NuRF and sediment dredging project impacts on the ecosystem health.

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:
Lake County Water Authority 107 North Lake Avenue Tavares, FL 32778
(352) 343-3777