

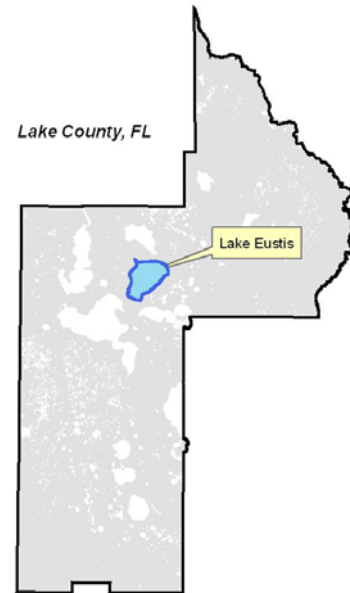


Lake Eustis EcoSummary February 2005

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 7,806-acre Lake Eustis is surrounded largely by a mix of residential, commercial and agricultural lands. Discharges from Lake Dora represented 33.6% of estimated Total Phosphorus (TP) loading and 50.0% of estimated Total Nitrogen (TN) loading. Discharges from Lake Harris-Little Lake Harris represented 9.3% of estimated TP loading and 26.1% of estimated TN loading to Lake Eustis. Aside from Lake Dora discharges, the largest single source of TP loading was from agriculture other than muck farms, which represented 18.9% of estimated TP loading and 4.6% of estimated TN loading. Additionally, in previous years, the City of Eustis discharged waste water into Trout Lake, which subsequently entered Lake Eustis at the north east corner of the lake. Significant differences in the sediment substrate are now apparent in Lake Eustis, with the north half dominated by muck and the south half still predominately comprised of sand. Because Lake Eustis is larger than 1000 acres in size, two separate LCIs were performed, one on the north end and one on the south end. The 24 benthic grabs for Lake Eustis were taken in February of 2005.



Results

Lake Eustis North received a very poor rating on the LCI. Lake Eustis South received a poor rating on the LCI. Ten different macroinvertebrate taxa were collected on the north portion and twelve taxa on the south. On Lake Eustis North, the most abundant macroinvertebrates collected were the oligochaete, tubificid worm *Limnodrilus hoffmeisteri*. Oligochaeta or aquatic worms comprised 80% of the macroinvertebrate population in the north portion of the lake. Tubificids frequently form dense populations in organically enriched habitats with a mucky substrate tending toward anoxic conditions. *Glyptotendipes sp.B* (midge) was the predominate single taxa present in the south portion of Lake Eustis. Chironomids or midges were 74% of the total population of macroinvertebrates in the south portion. Lake Eustis North LCI received a Hulbert Index score of 0. Lake Eustis South received a relatively low Hulbert

Index score of 2. 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.



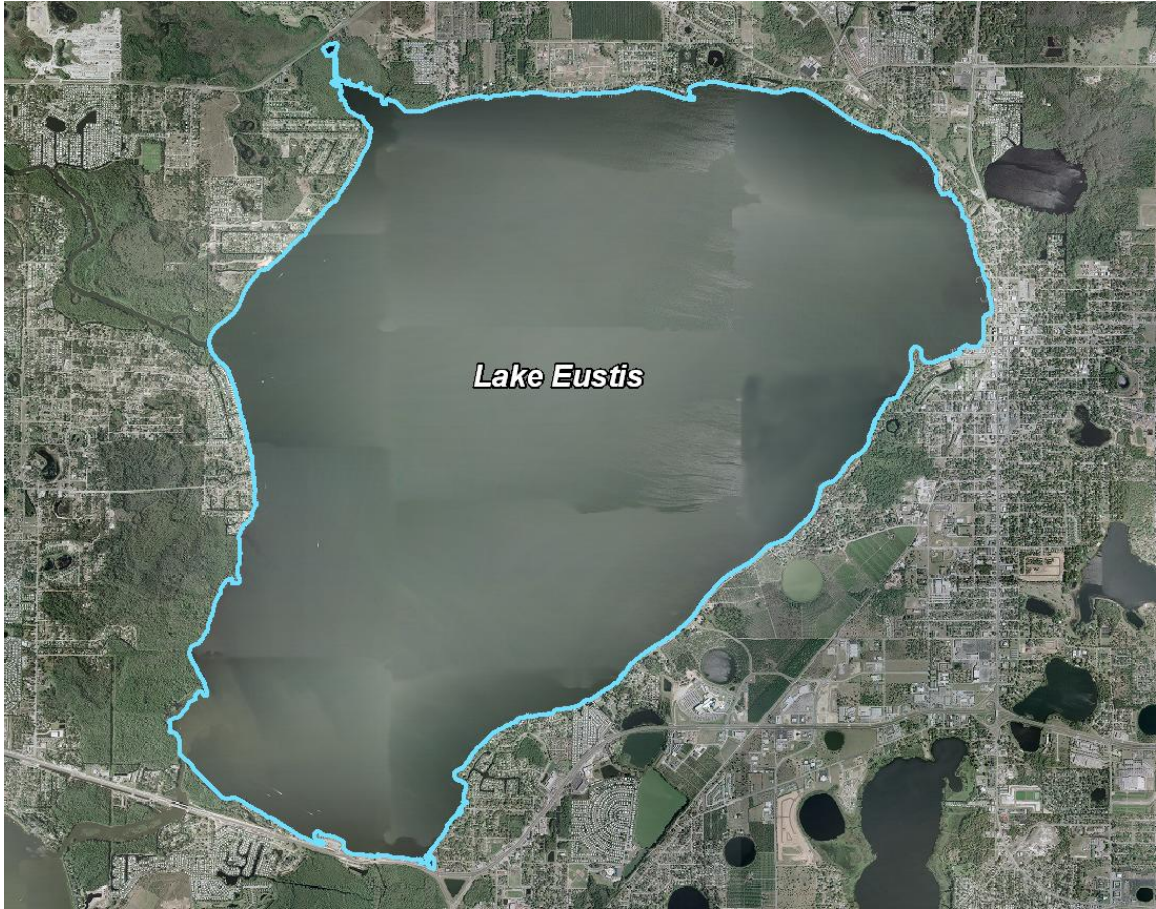
A Chironomid (or midge) from Lake Eustis

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 and Lake Eustis 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 and then Lake Eustis would consequently be improved with regard to reduced nutrient loading.

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.



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