



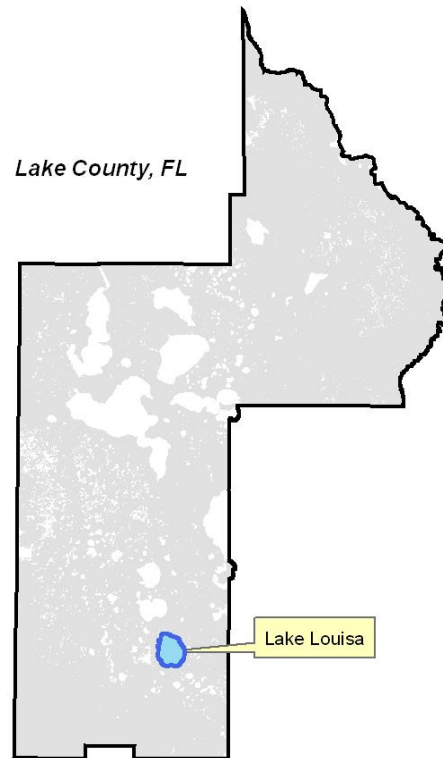
Lake Louisa EcoSummary

August & September 2007

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 south Lake County, the 3,161-acre Lake Louisa is surrounded largely by a mix of residential, natural (wetlands and forest/rangelands) and commercial lands. Lake Louisa is part of the Clermont Chain of Lakes and is designated as one of the Outstanding Florida Waters (OFW). An OFW is a water designated worthy of special protection because of its natural attributes. This special designation is intended to protect existing good water quality. Because Lake Louisa is larger than 1000 acres in size, two separate LCIs were performed, one on the north end and one on the south end. The 12 benthic grabs for Lake Louisa North were taken in August of 2007 and 12 benthic grabs for Lake Louisa South in September of 2007.



Results

Lake Louisa North and South both received a very good rating on the LCI. Twelve different macroinvertebrate taxa were collected on the north portion and sixteen taxa on the south. On Lake Louisa North, the most abundant macroinvertebrates collected were the Oligochaete tubificid or aquatic worm *Limnodrilus hoffmeisteri* and the mayfly *Hexagenia spp.* These two taxa accounted for 28.7% and 14.8% of the total population of macroinvertebrates present in the north portion of the lake. The mean LCI score dropped from 72.82 in 2005 to 58.38 in 2006 and to 48.28 in 2007. In addition, the number of pollution sensitive caddisfly species found in the north portion of the lake dropped from 26% of the total population of macroinvertebrates in 2005 to 16% in 2006 and 3.9% in 2007. Oligochaete tubificid worms, the mayfly *Hexagenia spp.* and the caddisfly *Oecetis sp. C* were the predominate taxa present in the south portion of Lake Louisa and comprised 22.1%, 13.4% and 11.5% respectively, of the total population of macroinvertebrates in the south portion of the lake. The median LCI score improved from a good 38.53 in 2005 to a very good 55 in 2006

and an improved very good 60.66 in 2007. The benthic samples taken in both portions of the lake were predominately sand and coarse particulate organic material. Lake Louisa North LCI received a Hulbert Index score of 9. Lake Louisa South received a Hulbert Index score of 10. 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.



caddisfly Trichoptera *Oecetis* sp. C with case.

Significance

Lake Louisa is still in very good condition, as is reflected in the biota (LCI) and in water chemistry. The Lake County Water Authority will continue to monitor the Clermont Chain of Lakes, one of the Outstanding Florida Waters, to ensure continued good water quality.

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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