



Lake Watch

NEWSLETTER OF THE LAKES EDUCATION / ACTION DRIVE

Vol. XIX, No. 1

Winter 2006

New Lakeside Display Signs Installed

Since 1985, Lakes Education Action Drive (LE/AD) has been raising public awareness about the protection and preservation of Florida's lakes and watersheds. One of LE/AD's core activity areas is lakeside environmental displays, attractive information kiosks that combine artistic reproductions and useful environmental information.

In partnership with Florida Southern College and the City of Lakeland's Lakes and Stormwater Division, LE/AD has installed five new displays at Southern Landing on Lake Hollingsworth. The five displays present the importance and role of aquatic vegetation, stormwater treatment, the relationship of Lake Hollingsworth to the Peace River

Watershed, wildlife and an explanation of how the new wetland system works.

In Winter Haven, LE/AD and the City of Winter Haven have installed four displays at the South Lake Howard Nature Park depicting the relationship of stormwater treatment to water quality and wildlife and aquatic plants commonly found in the nature park and on Lake Howard.

These projects were made possible by grants from the Peace River Basin Board of the Southwest Florida Water Management District and the Charlotte Harbor National Estuary Program. LE/AD would like to thank these organizations for their continued support of our programs.

Lakeside display signs at South Lake Howard Nature Park in Winter Haven.



Lakeside display signs at Southern Landing on Lake Hollingsworth in Lakeland.

From the Director:

Lake managers have their work cut out for them

As we start a new year, lake managers are busy addressing state water pollution rules for our area lakes. The State of Florida will be requiring cities in the county, as well as Polk County, to reduce the amount of pollutants that are being discharged into area lakes. The Florida Department of Environmental Protection (FDEP) is assigning Total Maximum Daily Load's (TMDL) for lakes in Polk County that are considered impaired. An impaired lake is one that cannot support its designated use (for drinking, shellfish harvesting, or fishing and swimming), as determined by the State, due to excessive amounts of specific pollutants (for example: phosphorus, nitrogen, bacteria or metals). A TMDL is the amount of a specific pollutant a water-body can tolerate and still meet water quality standards. A TMDL is adopted for each pollutant causing impairment in a water-body.

The State is requiring a reduction in the amount of pollutants that enter into specific lakes in Polk County. According to FDEP, the entire Winter Haven Chain of Lakes is classified as impaired, as are Lakes Hunter, Parker, Banana and Lake Hancock. Through a review process with FDEP and local lake managers, these lakes will have a TMDL developed and

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On The Inside:

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Know Your Lakes

Welcome to a new series of articles highlighting one lake per newsletter. We hope to educate our readers about some of our most well-known or unique lakes so that other lakes are better understood.

Lake Hunter

Lake Hunter is located in Lakeland. Lake Hunter, with a surface area of 93 acres, is located in the Hillsborough River Watershed (Latitude 28° 01' 57" Longitude -81° 57' 57"

Section-Township-Range 24-28-23). A watershed (also called a drainage basin) is an area on the land surface from which water flows or has the potential to flow into a stream or lake. Watersheds are naturally separated from adjacent basins by topographic divides.

Water Clarity

The current water clarity reading on Lake Hunter (secchi) is 0.9 feet (Source: City of Lakeland Lakes & Stormwater Division). The phrase "water clarity" refers to the transparency or clearness of water. A secchi disk measures how clear lake waters are. A secchi disk is a flat disk with alternating black and



white quadrants. It is lowered into the water and the depth at which it disappears to the naked eye is noted as a measure of the transparency of the lake water. Transparency can be affected by the color of the water, algae, or suspended sediments. Historic secchi averages ranged to 1.3 feet.

Water Levels

Water levels typically follow rainfall patterns during periods of wet weather and drought. Currently, Lake Hunter water elevation is 161.9 feet MSL (Source: City of Lakeland Lakes & Stormwater Division).

Trophic State Index

"Trophic" means "relating to nutrition." The Trophic State Index (TSI) takes into account chlorophyll, nitrogen, and phosphorus, which are nutrients required by plant life. Lake Hunter has a TSI value of 79.6 (measured on 9/21/05 by City of Lakeland Lakes & Stormwater Division), which is considered **Poor**. Waterbodies with TSI values ranging from 60 to 69 are rated as "fair and partially support use."

The historic average TSI value on Lake Hunter is 78.2 which waterbodies with TSI values from 70-100 are rated as "poor and do not support use".

Although present in all surface waters, nutrients are among the leading causes of degradation of Florida waterbodies. The latest nutrient values on Lake Hunter are:

Total Nitrogen (TN) is 2265 ug/L (measured on 9/21/05 by City of Lakeland Lakes & Stormwater Division).

Total Phosphorus (TP) 245 ug/L (measured on 9/21/05 by City of Lakeland Lakes & Stormwater Division).

Chlorophyll 92.4 ug/L (measured on 9/21/05 by City of Lakeland Lakes & Stormwater Division)

This waterbody is **impaired** according to the Impaired Waters Rule (IWR) Chapter 62-303 F.A.C.. Impairment is a status given to waters that are not supporting their designated uses

Additional Hydrology and Geology Information

Lake region: LAKELAND/BONE VALLEY UPLAND

The Lakeland/Bone Valley Upland region includes the sand hills of the Lakeland Ridge, and the more poorly drained flatwoods areas of parts of the Bone Valley Uplands and Bartow Embayment. All of these areas are covered by phosphatic sand and clayey sand from the Miocene-Pliocene Bone Valley Member of the Peace River Formation. The region generally encompasses the area of most intensive phosphate mining, but

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Lake Watch
Lakes Education Action Drive

Lake Watch is published quarterly by Lakes Education Action Drive, Inc. Subscription is available to members. Applications for membership are available in each issue of Lake Watch and on our web site: www.le-ad.org.

Editorial information, correspondence and address changes should be addressed to the Editor, Lake Watch, PO Box 7607, Lakeland, FL 33807. (863) 221-5323.

President Walter Reigner
Executive Director Johnna Martinez

Behind the scene with Lake Managers

By Johnna Martinez

As you drive around our beautiful county take a close look at our lakes. Notice how beautiful they look as the sun reflects off the water, as the ducks and swans swim across the lake, and the variety of aquatic plants that decorate the shores. Lake managers are hard at work keeping our lakes beautiful and healthy, but there are a lot of things the public does not see or understand that goes into keeping our lakes beautiful. In 1999, the Florida Legislature adopted the Florida Watershed Restoration Act, which authorized the Florida Department of Environmental Protection (FDEP) to use the Impaired Water Rule (IWR) to assess water bodies and to use Total Maximum Daily Load (TMDL's) to address impaired waters.

What do you mean by Impaired Waters?

The Clean Water Act, Section

303, establishes the Water Quality Standards and the Total Maximum Daily Load (TMDL) programs. The Clean Water Act requires states to identify waters not meeting water quality standards and to develop plans for cleaning them up. The framework for these plans is the TMDL program. A TMDL is essentially a prescription designed to restore the health of the polluted body of water by indicating the amount of pollutants that may be present in the water and still meet water quality standards.

TMDL's- What is it and why is it required?

A TMDL or Total Maximum Daily Load is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. Total Maximum Daily Loads are determined by modeling a waterbody and it's watershed to

identify sources and quantities of pollutants.

Water quality standards are set by the State. They identify the uses for each waterbody, for example, drinking water supply, contact recreation (swimming), and aquatic life support (fishing), and the scientific criteria to support that use.

A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources (**non point source pollution** is created by the flushing of pollutants from the land by rainfall and the resulting stormwater runoff, or by the leaching of pollutants through the soils into the ground water; **point source pollution** is an identifiable and confined discharge point for one or more water pollutants, such as a pipe, channel or ditch). The calculation must include a margin of safety to ensure that the waterbody can be used for the purposes the State has designated. The calculation must also account for seasonal variation in water quality.

Under Section 303(d) of the Clean Water Act, every two years each state must identify water bodies that do not meet water quality standards. These water bodies are "water quality-limited" estuaries, lakes, and streams that fall short of surface water quality standards and that are not expected to improve within the subsequent two years. Florida's water quality standards are designed to ensure that our waters can be used for their designated purposes, such as swimming,



Lake Hunter

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drinking, industrial and agricultural uses, and wildlife habitat. TMDLs establish the maximum amount of a pollutant that a water body can assimilate without causing exceedances of water quality standards. As such, development of TMDLs is an important step toward restoring our waters to their designated uses. According to FDEP, in order to achieve the water quality benefits intended by the Clean Water Act, it is critical that TMDLs, once developed, be implemented as soon as possible.

The Watershed Restoration Act (Chapter 99-223, Laws of Florida), sets forth the process by which the 303(d) list is refined through more detailed water quality assessments. It also establishes the means for adopting TMDLs, allocating pollutant loadings among contributing sources, and implementing pollution reduction strategies.

How is the Florida 303(d) list developed?

The 303(d) list is developed based on the Florida Water Quality Assessment [305(b) report]. Section 305(b) of the Clean Water Act requires states to report biennially to the EPA on their water quality. The 305(b) report describes the existing programs to protect the quality of Florida's surface waters, ground water, and wetlands. In the 305(b) report, water quality is evaluated using biological data, chemistry data from the federal water quality database (STORET), violations of Florida's water quality standards, mercury fish consumption advisories, qualitative non-point

source assessments, and other information solicited through public workshops. The information in the report is reviewed and water bodies are placed on the 303(d) list of impaired waters based on specific criteria designed to identify the highest priority water bodies in need of restoration based on the best available data.

Why are TMDLs developed?

For the past twenty-five years, point source discharges have been regulated under the Clean Water Act. Over time, it has become clear in many instances that every individual discharge into a water body may meet effluent discharge requirements and yet that water body may still fail to meet the standards defining good water quality. This circumstance has proved true even as the limits on point source discharges have become more and more stringent, especially in Florida. There clearly are other sources of pollution for which existing control measures are simply not adequate. These sources are associated with diffuse runoff and habitat destruction, and originate in both urban and rural areas.

The EPA requires states to set priorities for cleaning up impaired waters by establishing a TMDL for each one. Under the authority of section 303(d) of the CWA, EPA requires that TMDLs be developed where technology-

based effluent limitations or other legally required pollution control mechanisms are not stringent enough to protect water quality. Florida has hundreds of impaired water bodies or water body segments that likely will have to be addressed through the development and implementation of TMDLs.

How are TMDLs Established?

As noted, TMDLs are established for waters that fail to meet water quality standards, and characterize how much of each pollutant the water body can assimilate without violating those standards. The Florida Department of Environmental Protection (FDEP) considers future growth and development to the extent possible in establishing a TMDL, and accounts for the pollutant inputs from all sources, including discharges from industrial plants and sewage treatment facilities, runoff from farms, forests and urban areas, and natural sources.

TMDLs in Polk County:

Lake Hunter, in Lakeland, is the first lake in Polk County to receive a TMDL. As it stands, it will require that 80% of all stormwater runoff be treated prior to discharge into the lake. A Basin Management Action Plan (BMAP) will be developed over the next year to establish how to implement the TMDL. Stakeholders in the watershed

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*Visit LE/AD's website at
www.le-ad.org*

Florida Lake Management Society Annual Conference



The Florida Lake Management Society (FLMS) will hold its annual conference at the majestic 1888 Landmark Casa Monica Hotel in the heart of historic St. Augustine, Florida from June 5-8, 2006. The conference will include a full day of workshops on Monday, June 5th, and cover a wide variety of lake management topics. The formal conference begins on Tuesday, June 6th and runs through the morning of Thursday, June 8th and includes an exciting and informative agenda, with technical sessions held on a wide variety of topics related to water resources and lake management issues. For more information on the conference and how to register, visit www.flms.net and click on annual conference.

LE/AD Awarded Grants for New Lakeside Display Signs

The Lakes Education/Action Drive (LE/AD) has been awarded grants for the creation of Natural Interpretive Lakeside Display Signs at Lake Shipp and Lake Parker. Gulfstream Gas System and its Gulfstream Environmental and Recreations Trust Program have

awarded LE/AD a grant to create and install these signs at the Lake Shipp Park in Winter Haven. The Charlotte Harbor National Estuary Program and the Peace River Basin Board of the Southwest Florida Water Management District have awarded a grant to LE/AD to create

and install signs at Lake Parker Park in Lakeland.

Raising public awareness about lake water quality, and the practical things that can be done to improve it is vital to the future of our lakes. Watch for these signs at Lakes Shipp and Parker in the near future.

Know your lakes ... continued from page 2

phosphate deposits and mining activities are also found south of this region. As one would expect, the dominant characteristic of all lakes in this region is high phosphorous, nitrogen, and chlorophyll a values. The lakes

can be characterized as alkaline, with some receiving limestone-influenced groundwater.

Recreation

There is one public park with a boat ramp on Lake Hunter at 650 Sikes Blvd.

For more information on Lake Hunter you can visit the Polk County Lake Atlas website at: <http://polk.wateratlas.usf.edu/>

Reference: Polk County Lake Atlas website

Lake Managers ... continued from page 4

will be invited to participate in the development of the BMAP.

For more information on TMDL's and how our water bodies (Group 3 Basins) are ranked, you can visit the FDEP website at

<http://www.dep.state.fl.us/water/tmdl/docs/verified/group3/revised/SarasotaBayPeace>

MyakkaBasinsVerified_9-29-04.pdf

or <http://www.dep.state.fl.us/water/tmdl/index.htm> or contact FDEP:

Total Maximum Daily Load Program

2600 Blair Stone Road - Mail Station 3555

Tallahassee, FL, 32399-2400
Phone: (850) 245-8449

Background Information on Total Maximum Daily Loads (TMDL) was taken from the Environmental Protection Agency and the Florida Department of Environmental Protection websites.

Welcome New LE/AD Board Member!

LE/AD welcomes Brett Cyphers of SWFWMD to the LE/AD Board of Directors.

Upcoming Events

February 6, 2006: Living at the Lake Workshop - Aquatic Life: sponsored by Polk County Extension Service, University of Florida IFAS cooperating with the City of Lakeland Lakes Program and Lakes Education/Action Drive. This is a continuation of a series of workshops for people interested in learning more about Central Florida's lake resources. 7:00p.m. – 8:30 p.m. at the Peggy Brown Center, 2nd Floor in Lakeland. This workshop is free, but you must register by calling 519-8677, ext 112 or email jbrenneman@ifas.ufl.edu.

February 7, 2006: Composting Workshop sponsored by Florida Yards & Neighborhoods. 10:00a.m. – 11:30 a.m. at the Winter Haven Library. Please call Anne Yasalonis at 519-8677 ext 121 for more information and to register.

February 13, 2006: Living at the Lake Workshop – Birds and Mammals: sponsored by Polk County Extension Service, University of Florida IFAS cooperating with the City of Lakeland Lakes Program and Lakes Education/Action Drive. This is a continuation of a series of workshops for people interested in learning more about Central Florida's lake resources. 7:00p.m. – 8:30 p.m. at the Peggy Brown Center, 2nd Floor in Lakeland. This workshop is free, but you must register by calling 519-8677, ext 112 or email jbrenneman@ifas.ufl.edu.

February 18, 2006: Rain barrel Workshop sponsored by Florida Yards & Neighborhoods. 9:00 a.m. – 10:30 a.m. at Kelly Recreation Complex in Lakeland. Please call Anne Yasalonis at 519-8677 ext 121 for more information and to register.

February 18, 2006: Peace River Canoe Trip sponsored by Florida Native Plant Society-Heartland Chapter. Meet at 8:30 a.m. at the canoe launch on the east side of the Peace River at SR 60 in Bartow. For more information or to sign up, email kpesch@earthlink.net.

February 20, 2006: Living at the Lake Workshop - Aquatic Plants and Aquatic Plant Management: sponsored by Polk County Extension Service, University of Florida IFAS cooperating with the City of Lakeland Lakes Program and Lakes Education/Action Drive. This is a continuation of a series of workshops for people interested in learning more about Central Florida's lake resources. 7:00p.m. – 8:30 p.m. at the Peggy Brown Center, 2nd Floor in Lakeland. This workshop is free, but you must register by calling 519-8677, ext 112 or email jbrenneman@ifas.ufl.edu

February 27, 2006: Living at the Lake Workshop – How to Create a Lake Management Plan, Lake Restoration Techniques and Opportunities for Citizen Involvement: sponsored by Polk County Extension Service, University of Florida IFAS cooperating with the City of Lakeland Lakes Program and Lakes Education/Action Drive. This is a continuation of a series of workshops for people interested in learning more about Central Florida's lake resources. 7:00p.m. – 8:30 p.m. at the Peggy Brown Center, 2nd Floor in Lakeland. This workshop is free, but you must register by calling 519-8677, ext 112 or email jbrenneman@ifas.ufl.edu

March 4, 2006: Hiking-Sumica. 5 Mile hike to Lake Walk-in-the-Water. Varied habitat. Bring your own lunch, drinks and snacks. Call Paul Fellers for more info and to RSVP: 863-293-0486.

March 11, 2006: Great American Clean Up. For more information or to sign up, call Keep Polk County Beautiful at 533-8423, Lakeland Clean & Beautiful at 834-3306, or Keep Winter Haven Clean & Beautiful at 291-5662.

March 14, 2006: Landscape Design 101 Workshop sponsored by Florida Yards & Neighborhoods at Winter Haven Public Library. Learn to analyze site conditions, identify activity areas and develop a landscape plan. Cost of the workshop is \$10 to cover materials. Pre-Registration is required. Please call Anne Yasalonis at 519-8677 ext 121 for more information and to register.

March 21, 2006: Butterfly Gardening at the Larry Jackson Library in Lakeland from 10:00 a.m. – 11:30 a.m. Learn about butterflies and what they feed on. This workshop will teach you what plants you need to attract butterflies to your yard. This workshop is free. For more information, please call Anne Yasalonis at 519-8677 ext 121.

March 25, 2006: Hiking-Green Swamp. 2.5mile wildflower/nature hike. Meet at Van Fleet Rails and Trails Trailhead in Polk City to Carpool. For more information and to RSVP call Paul Fellers at 863-293-0486.

April 1, 2006: Native Plant Sale, 8:00 a.m. – 3:00 p.m. For location and information, email kpesch@earthlink.net

April 15 – 22, 2006: Winter Haven Chain of Lakes Festival. Come out and celebrate the Chain of Lakes with various events during the week. For more information and specific events, call the Winter Haven Chamber of Commerce at 293-2138.

April 22, 2006: Water Wings and Wild Things – Polk County's Nature Fest from 10:00 a.m. – 3:00 p.m. For more information and location, call Polk County Natural Resource Division at 534-7377.

LE/AD T-Shirts are here!

Show your support for LE/AD by purchasing a t-shirt with the logo shown below for only \$10. Proceeds go toward future LE/AD events and projects. Call 221-5323 find out how to get a shirt.



From the Director ... continued from page 1

pollution reduction measures will need to be taken. Once a TMDL is determined for each lake, a basin management action plan (BMAP) will be established. This plan, to be completed within 2 years after the pollutant load reductions for the lakes are approved, will pinpoint where the pollution is coming from and will identify projects for restoring water quality in the lakes.

LE/AD is dedicated to educating the public on lake awareness and preservation. LE/AD plans to hold a TMDL 101 workshop for the public this year. This workshop will hopefully explain to the average homeowner what the process is and where we go from here. We will publish this workshop in our LakeWatch newsletters as well as local media.

(Please see "Behind the Scene with Lake Managers" on page 3 for more information on TMDL's)

Visit LE/AD's
website at
www.le-ad.org

LEAD Membership

Now is the time to fill out a membership application and mail it to LE/AD with your check. Your support is very important to us, so please, join LE/AD and mail your membership today.

Membership Application

Lakes Education Action Drive
PO Box 7607
Lakeland, FL 33807-7607
Phone (863) 221-5323

Please use a pen to print the following information:

Name: _____

Street Address: _____

PO Box: _____

City: _____

State/Zip Code: _____

Organization Represented: _____

Your Position: _____

E-mail Address: _____

Telephone: _____

Annual Membership Categories

- | | |
|---|---|
| <input type="checkbox"/> Individual Membership - \$10.00 | <input type="checkbox"/> Corporate Membership - \$25.00 |
| <input type="checkbox"/> Supporting Membership - \$25.00 | <input type="checkbox"/> Supporting Corporate Membership - \$50.00 |
| <input type="checkbox"/> Contributing Member -
\$50 or more \$ _____ | <input type="checkbox"/> Contributing Corporate Membership -
\$100.00 or more \$ _____ |

Please make your check payable to LE/AD and mail along with this application to the above address.

Total Amount Enclosed: \$ _____

Lakes Education/Action Drive is a non-profit, tax deductible corporation.



Lakes Education Action Drive, Inc.
LE / AD
P.O. Box 7607
Lakeland, FL 33807

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LE/AD Thanks You!

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