Florida
LAKEWATCH

Dedicated to Sharing Information About Water Management and the Florida LAKEWATCH Program Volume 64 (2014)

Bring a Friend to this Year's LAKEWATCH Regional Meetings

Volunteers at the Florida LAKEWATCH 2007 Regional meeting in Orange County

This year's regional meetings will have much of the annual business that you have come to expect including a dinner, full description of your data collection, data history and a time to discuss your lake or ask questions of our Regional Coordinators about lake management issues. From the questions that are annually asked at our regional meeting it is obvious that LAKEWATCH volunteers have a desire to learn about all aspects of Florida's natural resources. Therefore, at this year's Regional Meetings we will be introducing (maybe reintroducing to some) the following three University of Florida/IFAS Extension programs that deal with Florida's natural resource issues: **1) Florida Friendly Landscapes (FFL), 2) Florida Master Gardener and 3) Florida Master Naturalist.** So if you have a friend that is interested in Florida's lakes and natural resources bring them to this year's regional meetings. If you are going to bring a friend please let your Regional Coordinators know so they can properly plan for the meeting.

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Florida-Friendly LandscapingTM

Preserving and protecting Florida's water and natural resources is the focus of Florida-Friendly LandscapingTM (FFL), which promotes the following nine science-based Florida-Friendly Landscaping™ Principles through public outreach and education statewide: 1) Right Plant, Right Place, 2) Water Efficiently, 3) Fertilize Appropriately, 4) Mulch, 5) Attract Wildlife, 6) Manage Yard Pests Responsibly, 7) Recycle, 8) Reduce Storm Water Runoff and 9) Protect the Waterfront. The Florida-Friendly Landscaping™ Program educates/trains Florida residents and green industry professionals about the design, installation and maintenance of science-based environmentally friendly landscape practices that conserve and protect water and natural resources by reducing non-point source pollution. FFL provides outreach on environmentally friendly landscape practices in three main areas: (1) Florida Yards & Neighborhoods (FYN), which targets residents, (2) FYN builder/developer, which also includes homeowner associations, and (3) Green Industries Best Management Practices (GI-BMP), which trains landscape professionals. In 2009, the Florida Legislature found "that water conservation and water quality protection and restoration are increasingly critical to the continuance of an adequate water supply and healthy surface and ground waters and "Florida-Friendly LandscapingTM", as defined in s. 373.185, can contribute significantly to water conservation and water quality protection and restoration.

This statewide program operates in 48 of the 67 counties. Extension agents, Master Gardeners, or trained volunteers provide workshops and educational programming for FFL.

The FFL program is a joint venture of the Florida Department of Environmental Protection (FDEP) and the University of Florida Institute of Food and Agricultural Sciences (UF/IFAS). FFL also works in cooperation with the state's five water management districts and other agencies and organizations to achieve the common goal of water conservation and water quality protection. The FFL Program has several success stories for water conservation. Please contact https://fyn.ifas.ufl.edu/ for more information.

Florida Master Gardener Program

The Florida Master Gardener Program is a volunteer-driven program that benefits UF/IFAS Extension and the citizens of Florida. The program relies on dedicated volunteers who have an interest in gardening and in giving back to their communities. The successful Florida Master Gardener Program got its start in 1979. Within Florida, each county Extension office chooses whether it wishes to participate in the statewide program. Active counties select a Master Gardener Coordinator, typically the horticulture Extension agent for that county, who coordinates that county's volunteer recruiting, training, and management efforts.

The Florida Master Gardener Program recruits individuals who are

About the Master Gardener Program

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Think you might be interested in becoming a Master Gardener? Read more about the history of the program and how to become a Master Gardener.

- History of the Florida Master Gardener Program
- How to Become a Florida Master Gardener
- The Success of the Master Gardener Program
- By the Numbers: Annual Reports

Mission Statement

To train a core of volunteers to assist the county agent in delivering information to residents on how to design, plant and care for their plants and landscapes in a Florida-Friendly way.

You can learn more about the Master Gardener program at http://gardeningsolutions.ifas.ufl.edu/mastergardener/

interested in gardening and enjoy sharing what they learn with others. Participants complete a 50-hour (or longer) training course sponsored by the University of Florida and the local county Extension office. In return for their training, these new Master Gardeners serve 75 volunteer hours within the first year of their certification, per the statewide program bylaws. Certified Master Gardeners work through their county Extension office to educate Floridians and provide research-based information about gardening—America's most popular pastime. Master Gardeners can fulfill their volunteer hours in a variety of ways, including: 1) answering horticultural questions over the phone, in person or through a regular newspaper column, 2) participating in community and school garden projects, 3) giving educational programs to the public, 4) supporting youth activities, 5) performing soil sample evaluations, 6) recognizing Florida-Friendly yards through the Florida Yards & Neighborhoods Program.

Florida Master Naturalist Program

The Florida Master Naturalist Program (FMNP) is an adult education UF/IFAS Extension program developed by the University of Florida and provided by many Extension offices and participating organizations throughout the state of Florida. FMNP training will benefit persons interested in learning more about Florida's environment or wishing to increase their knowledge for use in education programs as volunteers, employees, ecotourism guides, and others.

The FMNP consists of three Core Modules, 1) Freshwater Wetlands, 2) Coastal Systems, and 3) Upland Habitats. Each Module is 40 contact hours of classroom learning, field trips, and practical experience. The FMNP also offers four special topics courses. These are 24-contact hours each and include Conservation Science, Wildlife Monitoring, Habitat Evaluation, and Environmental Interpretation. For more information and to review and register for FMNP course offerings, go to www.MasterNaturalist.org. Each Module includes detailed course manuals and, upon completion, FMNP certificates, patches, and pins denoting their area of expertise (e.g., Wetlands Master Naturalist) and registration in the online FMNP Graduate Database. Students who choose to complete all three Core Modules will become certified Florida Master Naturalists and will receive a plaque, Master Naturalist pin, and registration in the online Master Naturalist Honor Roll Database. The FMNP does not provide university credit toward a degree-seeking program.

UF/IFAS Master Naturalist Program

Master Naturalist students participating in the freshwater/wetlands module.

Proposed "Watershed Stewards Academy"

In addition to the three well-established programs discussed above, a "Watershed Stewards Academy" is a proposed extension program that will focus specifically on educating stakeholders about water resources. UF/IFAS Extension is asking you to take a survey and your responses to this survey will help guide the design and development of the program to best meet the needs of Florida's water resources stakeholders. The program will be modeled after many of the other "Master" programs the University of Florida offers, with 7 to 12 sessions over a period of time. It will focus on enhancing Floridians' connection to water; relationships with the watershed in which they live, work and play; and the dynamic interaction of water quality, quantity and their associated policies and regulations. It could include potential action projects and lead to participant service in your community.

Please consider taking the survey to aid in the development of this program at the following web site location:

https://ufl.qualtrics.com/SE/?SID=SV_6qVpnIcC028TgCF

Lake Clay Stormwater Retrofit Project – a cooperative endeavor

By: Corine Burgess

Courtesy photo

The Lake Clay Stormwater Retrofit project broke ground in September 2012 and was completed in January 2013.

Land, in its natural state, has a way of keeping everything in check. Rainfall, for example, in the natural environment would soak into the forest floor, flow underground, be filtered by natural processes and then eventually feed nearby water bodies. This natural process is interrupted when the land is covered with roads, parking lots, and buildings. Roofs, concrete, asphalt and other impervious surfaces do not allow rainfall to soak into the earth. Instead, the rainfall runs over the roads, fields and other surfaces picking up pollutants, such as oil, gasoline, pesticides, fertilizers and trash along the way. The water then runs into a nearby stormdrain or body of water without the benefit of filtration. This is called stormwater runoff.

According to the Southwest Florida Water Management District (SWFWMD), "Stormwater runoff is perhaps the most visible impact to lake water quality in the Ridge lake region. Older urban areas developed prior to the 1984 enactment of stormwater treatment regulations, produce runoff that is virtually untreated prior to discharging to nearby lakes. As a result, the lakes in these areas have been acting as catch basins for urban runoff pollution."

Over a decade ago, some Lake Placid residents were concerned enough about stormwater flow into Lake Clay to speak up about it. The nutrient levels in the lake were too high and they wanted something to be done to protect this beautiful body of water. As conscientious citizens, they approached Highlands County Lakes Manager, Clell Ford and voiced their concerns.

By June 2003, the SWFWMD completed the Lake Wales Ridge Lake Screening Project, which was a study of Ridge area lakes to determine which were at risk from stormwater runoff and in need of preservation. Lake Clay came up as one of the five lakes that were identified. The others include McCoy, June, Tulane and Isis.

As a result of the study, the SWFWMD deemed the Lake Clay watershed area in need of a stormwater retrofit. Proposed treatment in this area included an exfiltration system for the plaza parking lot, trench drains in the existing drainage easement between Lake Clay Road and Lake Clay as well as other techniques.

Pam Fentress was a member of the SWFWMD Governing Board for several years in the early 2000s. She pushed behind the scenes to get the SWFWMD Lake Wales Ridge Lakes Screening Project done. The screening project was completed by SWFWMD staffers Keith Kolasa and Dr. Patricia Dooris. It led to the best management practices report in 2007.

Many agencies joined forces to get the project off the ground. The lead agency was the SWFWMD, which provided 75 percent of the total funding up to $318,364.19.

Other agencies that assisted included the Highlands County Board of County Commissioners with a contribution of $31,250.00, the Tourist Development Tax Lakes Special Projects fund of $40,000.00, the Highlands Soil and Water Conservation District with a $10,000.00 commitment and the Highlands County Infrastructure Surtax of $24,871.40. The Highlands County Board of County Commissioners also assisted with acquisitions of easements and rights-of-way. The Town of Lake Placid obtained easements from the owner of the Tower Plaza which is located within the lake's watershed. The project broke ground in September 2012 and was completed in January 2013. The work was performed by a local firm, Excavation Point and the managing engineering firm, AMEC, from Lakeland. The project came in $100,000.00 under budget.

The Lake Clay Stormwater Retrofit project would simply not have been completed if private citizens, governmental entities, corporations and other agencies hadn't worked together toward a common goal. Highlands County's Lakes Manager Clell Ford stated, "This project has shown real initiative on the part of the local folks to work with agencies regarding water quality on Lake Clay. The fact that the project came in so far under budget shows how cost conscious the Southwest Florida Water Management District staff are."

Debra Worley, Town Councilperson for the Town of Lake Placid, stated, "This project would not be in place if the private sector including corporations and citizens, government, municipalities, special districts, county, water district and state entities had not all worked together to save Lake Clay."

The Lake Clay Project is expected to reduce pollutant loadings substantially every year, removing more than 2,700 pounds of total suspended solids, 148.2 pounds of total nitrogen, 17.5 pounds of total phosphorus, 6.1 pounds of lead and 4.9 pounds of zinc from water draining into the lake.

Plantings of Ridge native plant species will be used to beautify the area. This vegetation will require little or no irrigation and will be cared for by the contractor for the first year. The Lake Placid Garden Club has reviewed the vegetation plan and is delighted. Once the first year is over, the Garden Club will maintain the plants as part of a Nation Garden Club request in part of a Clean Water Project.

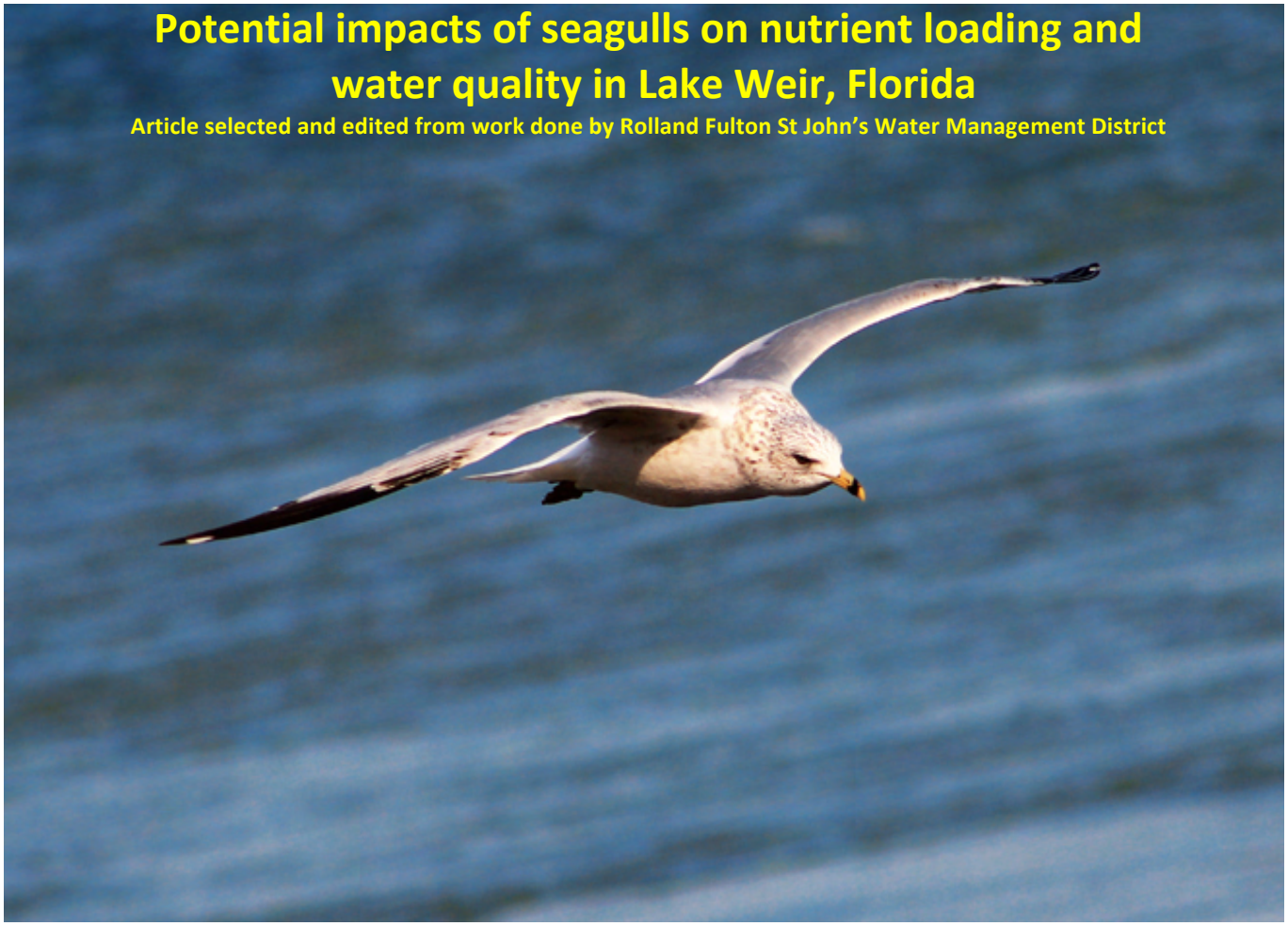
Thanks to the passion of caring citizens, the efforts of various agencies and funding from several entities, Lake Clay will be preserved for future generations.

David Austin

Plantings of Ridge native plant species will be used to beautify the area.

Potential impacts of seagulls on nutrient loading and water quality in Lake Weir, Florida

Article selected and edited from work done by Rolland Fulton St John's Water Management District



Matthew Gordon

The primary gull species on Lake Weir is the Ring-billed gull, shown here in flight.

Lake Weir is located in Marion County in North central Florida, and has surface area of about 6000 acres. Sunset Harbor is an arm of the lake, and Little Lake Weir, is connected to Lake Weir by a canal, and has a broader connection at high water levels. Area residents believe that flocks of gulls that roost on the lake are feeding at Marion County's Baseline Landfill and may be potentially introducing pollutants to the lake in the form of phosphorus and nitrogen through their waste. The landfill is about 8.5 miles from Lake Weir, which is well within the flying range of foraging gulls.

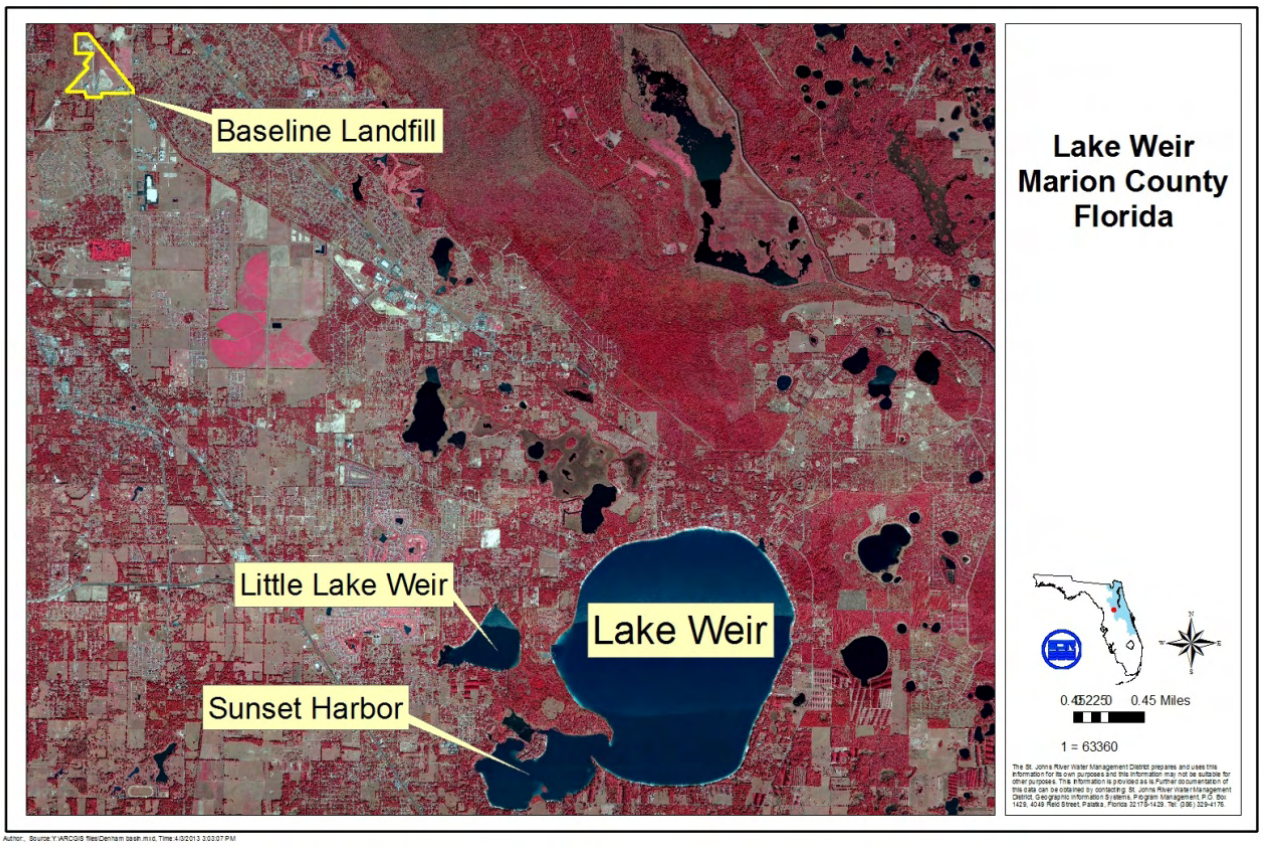
Lake Weir generally has the best water quality of the large lakes in the upper Ocklawaha basin. Average TP and chlorophyll concentrations in Lake Weir are about 10 µg/L. Other lakes in the upper Ocklawaha basin (Apopka, Harris, Eustis, and Yale) have TP values 3 to 10 times higher.

Trend analyses show a statistically significant increasing trend in the District TP data over the last 15 years. There is also an increasing Chlorophyll-a trend in Lake Weir, which is statistically significant for the District data.

There are multiple factors that may be related to the noted increase in nutrients in Lake Weir including potential anthropogenic increases in external nutrient loading, a multi-decadal decrease in the lake's water level, which may change internal nutrient cycling, and others.

The primary gull species on Lake Weir is the Ring-billed gull. The only quantitative data we have on bird populations on Lake Weir are the Christmas Bird Counts (CBC data from John Stenberg). Ring-billed gull counts have been as high as 15,000 and in several years ranged from 3-5 thousand.

Nutrient impacts from waterfowl populations potential effects depend on the locations of feeding and roosting: If birds both feed and roost on the lake then they are acting as a nutrient recycler more than a nutrient load. If the birds feed on lake, but roost elsewhere nutrients are exported from the lake. The scenario that would concern us the most is the situation where birds roost on the lake but feed elsewhere, therefore the birds import nutrients to lake.

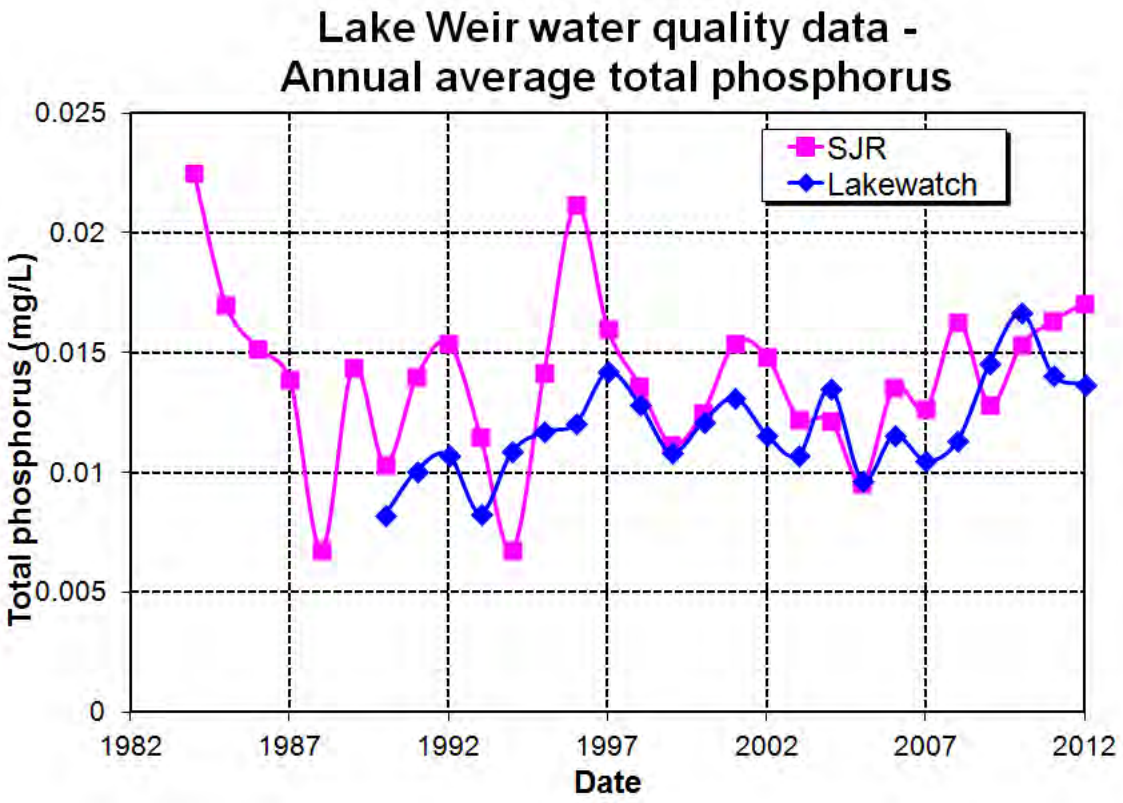


Satellite imagery showing Lake Weir in relation to a potential gull feeding source at the Baseline Landfill.

The most geographically relevant bird study was done by Hoyer and Canfield (1994). They estimated that the TP load to the lakes from bird populations ranged from 0.1% to 9% of external loads, and felt that these were probably overestimates because most birds were feeding on the lakes, and therefore primarily recycling nutrients already in the lakes. This study included 14 Florida lakes, although none of these had large gull populations. They concluded bird populations generally do not significantly affect nutrient loading to Florida lakes under "natural conditions", although they did allow for the potential of significant impacts if large populations feed outside lake and roost on lake. Another study of a situation perhaps more similar to Lake Weir was done by Portnoy (1990), who studied effects of a gull population on a small Cape Cod lake. He noted gull populations have increased dramatically as result of increased winter survival around urban landfills. It was determined that the gulls were not feeding on the lake. This lake was much smaller than Lake Weir (about 109 acres, whereas Weir >5,000 acres). Gull

Wikimedia commons

Photograph showing an adult breeding ring-billed gull.



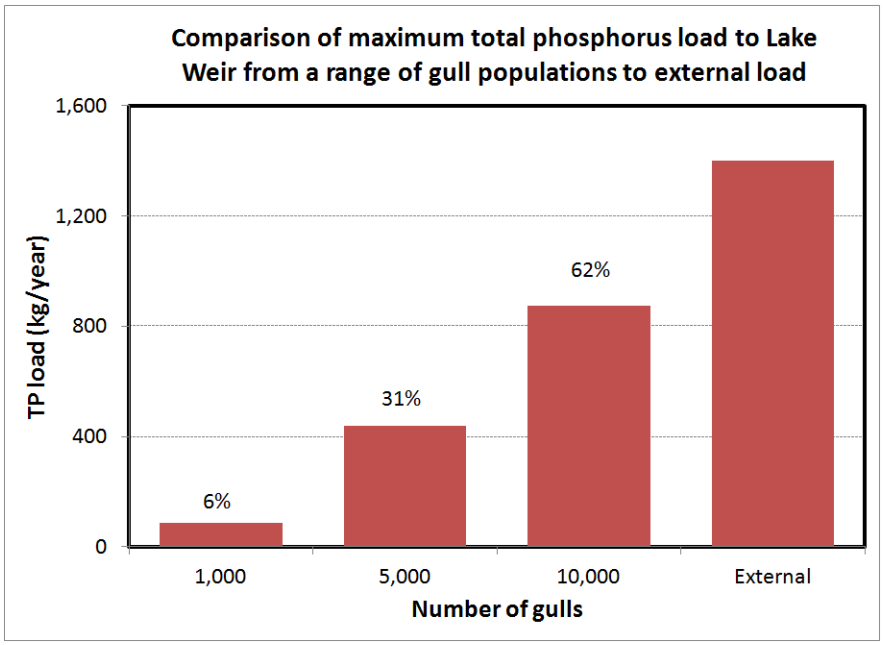
Average annual total phosphorus for Lake Weir from 1982 to 2012.

populations exceeded 2000 birds on the Cape Cod Lake, although they were not present in such numbers all year long. He estimated that gulls contributed 42% of total phosphorus inputs to lake. With that information he concluded large gull concentrations can be important source in lake eutrophication.

An estimated potential effect of gull excretion on total phosphorus loading to Lake Weir was accomplished by estimating nutrient excretion rates from a population of gulls and comparing that with the estimated external nutrient loading rates for the lake. The estimated TP loads from gulls assumed that the birds feed away from the lake, and come back to roost on the lake at night, and that the specified number of gulls are present all year long. A year-round population of 1000 gulls was estimated to excrete about 6% of the external TP load. At a population size of 5000 gulls this increased to 31%, and to about 62% for a year-round population of 10,000 gulls.

Summary

The potential for contamination of water bodies from waterfowl is greatest when birds are densely populated, where dilution capacity is



The estimated TP loads from gulls assumed that the birds feed away from the lake, and come back to roost on the lake at night, and that the specified number of gulls are present all year long.

A Ring-billed gull in non-breeding adult plumage.

minimal (such as small lakes and along shorelines), and where prolonged residency occurs. There is the potential for a net import of nutrients when birds roost on lake and feed elsewhere. Maximum excretion calculations suggest gull populations may have a significant effect on TP loading to Lake Weir, but this is dependent on assumptions that thousands of gulls are present for much of the year, and feed outside the lake. However, Lake Weir water quality is within the range for other lakes within its ecoregion. Recent deterioration in water quality could be explained by increased external nutrient loads and/or decreased water levels. There is insufficient information to determine whether gull populations make a significant contribution to bacterial contamination in Lake Weir.

Literature:

Hoyer, M. V., and D. E. Canfield Jr. 1994. Bird abundance and species richness on Florida lakes: Influence of lake trophic status, morphology, and aquatic macrophytes. Hydrobiologia 297/280: 107-119.

Portnoy, J.W. 1990. Gull contributions of phosphorus and nitrogen to a Cape Cod kettle pond. Hydrobiologia 202:61-69.

By: Rolland Fulton
Bureau of Environmental Sciences
St. Johns River Water Management District

Edited: Daniel J Willis
UF/IFAS SFRC Fisheries LAKEWATCH

Volunteer Bulletin Board

UF - IFAS Center for Aquatic and Invasive Plants

The **UF/IFAS Center for Aquatic and Invasive Plants** is a multidisciplinary research, teaching and extension unit directed to develop environmentally sound techniques for the management of aquatic and natural area weed species and to coordinate aquatic plant research activities within the State of Florida. The Center was established in 1978 by the Florida legislature. Directed by **Dr. William Haller**, the Center utilizes expertise from many departments within UF/IFAS and its Agricultural Research and Education Centers throughout Florida.

The mission of the CAIP Information Office is to inform and educate all stakeholders about the impacts and management of invasive plants.

An Aquatics list-serv is now available from CAIP that periodically posts information relevant to aquatic plant management and related issues. This is a low-traffic list-serv that will not invade your IN box. To subscribe, send a message to CAIP-FL-AQUATICS-request@LISTS.IFAS.UFL.EDU You will receive a reply asking you to confirm your request. Once confirmed, you will be subscribed to the list. You may also subscribe by contacting the list-serv manager, Karen Brown, at kpbrown@ufl.edu

LAKEWATCH Regional Meeting Schedule for 2014

Polk	2/20/14
Leon, Gadsden, Franklin and Jefferson	2/27/14
Charlotte and Collier	3/13/14
Osceola	4/17/14
Citrus	4/24/14
Lake, Marion and Sumter	5/17/14
Volusia and Flagler	6/3/14
Orange	6/26/14
Seminole	7/10/14
Bay, Gulf, Calhoun, and Jackson	8/22/14
Walton, Okaloosa, Escambia, Santa Rosa, Holmes and Washington	8/23/14
Putnam, Clay, Duval and St. John's	9/17/14
Hillsborough, Pasco and Pinellas	10/2/14
Alachua, Hamilton, Bradford, and Columbia	10/23/14
Highlands	11/02/14
Miami-Dade, Broward and Palm Beach	12/13/14

Mobile Field Guide to Florida Invasive Plants

FLIP is a new mobile field guide that can be accessed by a computer, smart phone, tablet or other device with internet browser capability. Developed by the University of South Florida, FLIP currently contains 20 plants: 19 of the 2011 Category I invasive species and one of the 2011 Category II invasive species as designated by the Florida Exotic Plant Pest Council (FLEPPC), and will be expanded to include more.

Check out the app at www.orange.wateratlas.org/flip

While there, why not check out the whole atlas at www.wateratlas.org

Remember to check-off on your new data sheet!

LAKEWATCH has a new data sheet with a small check list for you to check off after you have completed your task. Please be sure to check off that you have collected the water sample for total nitrogen and total phosphorus (the small bottle), that you have collected the water sample and filtered it for chlorophyll and that you have taken a Secchi disk reading.

Thank you,
The LAKEWATCH Crew

Florida LAKEWATCH Freshwater Data Sheet

Lake Name:: Little Weston County: : Polk

Sampler: Joe Smith

Phone:(800) 525-3928 Date: 9/7/13 Time: 9:30 AM

Yes √ No___: Surface Water Collected for Total Phosphorus and Total Nitrogen.
Yes √ No___: Surface Water Collected for Chlorophyll and Filtered Within 48 Hours.
Yes √ No___: Secchi Depth Reading Taken

LAKEWATCH says goodbye to a faithful volunteer and friend!

Courtesy photo

Gerre on Lake Ola taking his LAKEWATCH samples.

Gerre Jaillet was trained to take water samples for the LAKEWATCH program on Lake Ola in Orange County on October 7, 1990. On September 17, 1997 he also started sampling Lake Jem in Lake County. Lake Ola is located in the town of Tangerine at the corner of US 441 and 448 (28° 45' 16.2", 81° 37' 55.8"). Lake Jem is located in Lake County (28° 44' 47.22", 81° 39' 54.54") approximately 1.5 miles west of lake Ola on 448 (Sadler Ave).

Gerre was a dedicated volunteer for 23 years. During those 23 years Gerre took approximately 1,350 samples for total phosphorus, total nitrogen, chlorophyll analysis and water clarity. He also did bird counts on the Lake. This type of dedication goes well beyond anything we at LAKEWATCH expected from a volunteer when the program was derived. But, if you knew Gerre this is what you would expect from him. This is an extraordinary example of dedication and one that we can all find inspiration from.

Gerre was raised in Tangerine, Florida and graduated from Mount Dora High School. He spent his childhood on the shores of Lake Ola. Some of his fondest childhood experiences come from the shores of Lake Ola. There he spent many hours recreating on the lake and from that Gerre's love for the lake grew. Naturally, when he learned about our organization he thought that it would be a great way to preserve this unique resource.

Gerre was an avid outdoorsmen and that is probably what led him to spend most of his life working in the nursery and seafood business. One thing we have learned about Gerre is that when a concern comes up on the lake, he will take the time to learn all about that issue before making a decision. Yes, we understand that lake management can lead to touchy debates, but keeping an open mind and getting the data to address the issues can lead to a better understanding of lake ecosystems and help make management decisions.

Gerre passed away at the age of 62 on January 1, 2014 at Florida Hospital after a short illness. Gerre is survived by his parents, Fran and Chick Jalliet, and his brother Chuck. We want to acknowledge Gerre's time and effort he gave to the LAKWATCH

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program. Gerre' s dedication to the program and the lake(s) goes well beyond anything we at LAKEWATCH expected from a volunteer. We have greatly enjoyed all of his assistance over the years. Everyone will miss him from his family to his friends and the town of Tangerine and most of all Lake Ola.

Letter from Gerre (2007):

As I grew up in Tangerine and spent many years on this nearly pristine lake, I recognized an opportunity to further my scientific studies to include limnology. As a professional foliage grower the swap to the aquatic environment from the terrestrial environment was just "same house, different room".

My LAKEWATCH career started at 12:00pm on October 7, 1990 and I have been involved for 16 years, 7 months. I have no plans of stopping my activity but only of increasing it. My active involvement with this fine program has been some of the most rewarding and intriguing years of my life. The education I have absorbed has been the most augmentative in my life.

I am looking forward to many more!

Gerre Jaillet
Ola / Orange
Jem / Lake

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SFRC SCHOOL OF FOREST RESOURCES & CONSERVATION
Florida **LAKEWATCH**
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All unsolicited articles, photographs, artwork or other written material must include contributor's name, address and phone number. Opinions expressed are solely those of the individual contributor and do not necessarily reflect the opinion or policy of the Florida LAKEWATCH program.