



Why LAKEWATCH Can't Be An Advocate

Comments from the founder of Florida LAKEWATCH

— Dr. Daniel E. Canfield, Jr.

Occasionally, Florida LAKEWATCH staff are asked to write letters or speak at public hearings advocating specific lake management objectives or positions. Subjects range from the pros and cons of lakeside development, managing fish stocks, regulating boat traffic, permitting for dredging or clearing aquatic plants, etc. You name it, we've heard it.

While our staff is always willing to

spend time discussing and observing every possible angle on an issue, LAKEWATCH cannot advocate any specific position. Having worked on over 1000 Florida lakes and talked with hundreds of volunteers during the last 20 years, I am well aware of the frustration that can develop when such a seemingly simple request is not responded to positively.

However, it's important for all of our

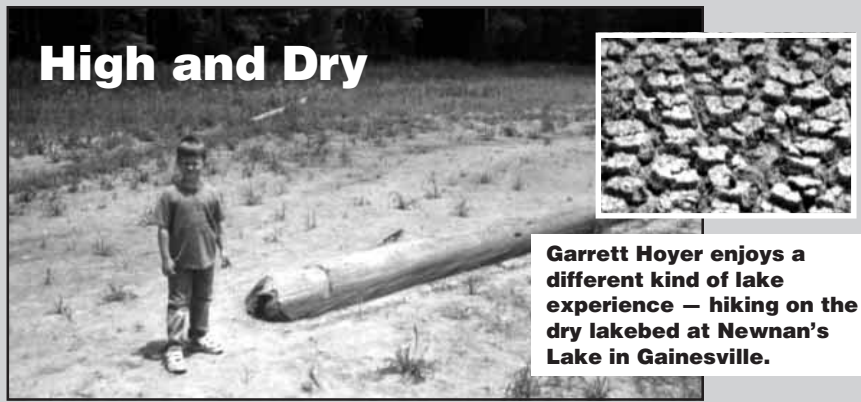
dedicated volunteers to understand what influences LAKEWATCH's approach to lake management. This requires a basic understanding of three primary issues:

1 How Did Florida LAKEWATCH Begin?

Back in the mid-1980s, concerned homeowners living along Lake Broward in Putnam County and Lake Santa Fe in Alachua County requested assistance with some lake "problems." The concern and frustration of my visitors was strong and sincere. I asked why they were contacting me, as I was just a researcher.

After more detailed discussions, it became clear that many of the professionals at the management agencies had a desire to help, but there were no data available for making management decisions. I suggested that my chemistry laboratory could assist with the measurement of nutrients (total phosphorus and total nitrogen) and algal biomass (measured as chlorophyll concentrations). However, for the information to be most meaningful, water samples needed to be collected on a monthly basis by the homeowners and delivered to the laboratory. I also commented that they should measure water clarity with a Secchi disk. I cannot fully describe the excitement shown by these visitors, even to this day.

Continued on pages 4 & 5.



High and Dry

Garrett Hoyer enjoys a different kind of lake experience — hiking on the dry lakebed at Newnan's Lake in Gainesville.

Finding it difficult to sample your lake this summer due to low water levels? You're not alone. Many volunteers have been calling to let us know about their difficulty collecting samples. (Note: If you can't sample, we would like to hear from you so we can make a note of it in our records.)

While the drought may be keeping some folks from their usual summer lake activities, there is a bright side. The 100-year drought condition we're currently experiencing is a natural phenomenon and LAKEWATCH volunteers have a rare opportunity to document changes that might be occur-

ring in lakes. We'd like to encourage those of you that can access your lake to take advantage of this.

Another silver lining to the drought "cloud" is that some lakes with muck problems are getting a little help from the sun. For example, Newnan's Lake in Gainesville has received a lot of press in recent years for its low water levels and deep gooey muck.

This summer, the lake surface area has been reduced by more than a thousand acres, with much of the lake now high and dry. As seen here (photo above), the drought has "cooked" much of the lake bottom into a hard-packed surface again.

Now all we need is rain...

UNIVERSITY OF FLORIDA logo and Institute of Food and Agricultural Sciences text.

Managing Greedy Grass Carp

LAKEWATCH Regional Coordinator Dan Willis knows his grass carp—and he should; he's spent the better part of three years working with these exotic fish, famous for their appetite for aquatic vegetation. His master's degree thesis *Training Grass Carp to Respond to Sound as a Fish Removal Technique* paves the way toward solving a major dilemma affiliated with the use of grass carp for controlling aquatic weeds.

The problem? Too many carp in a pond or lake can consume ALL the vegetation—even grasses growing along the bank. And once these fish are stocked they are extremely difficult, if not impossible, to remove. (Ever tried to hook a herbivorous fish with a worm?) Several removal methods have been investigated such as herding, angling, netting, electrofishing, and the use of toxic fish baits. All have met with only limited success.

Is there another way? Data from Dan's study suggest that it is possible to train grass carp to respond to low frequency sound.



Dan Willis with one of the grass carp used in his study.

So what does this mean for lake residents plagued with aquatic weeds?

If grass carp continue to return to a designated area when low frequency sounds

are presented (without reinforcements such as food), it may be possible to place them in lakes to consume the desired amount of plants, and then attract them to a location from which they can be removed.

This new technique may make it possible to move the fish from one waterbody to another without having to resort to the more drastic measures used in the past such as poison bait or electrofishing.

Using Willis' hard-earned data, graduate student Mike Duncan, also working under the direction of Dr. Canfield, is taking the idea one step further and testing grass carp in ponds to see if the theory holds true in larger bodies of water. (Dan's research was based on how the fish responded in large tanks.)

Interested in learning more about the use of grass carp for controlling aquatic vegetation? Call:

Dave Eggeman 850/488-4068
Florida Fish and Wildlife Conservation
Commission

Dear LAKEWATCH,

On May 27th, the Lake Waunatta Lakefront Homeowner's Association had its first annual Lake Cleanup, Plant Giveaway and Pancake Breakfast. The primary purpose of this function was to promote awareness of the value of lakeshore vegetation and the feasibility of lakeshore restoration at Lake Waunatta. It was also hoped that lakefront owners, both members and non-members would get to know each other better by meeting in a casual setting and that increased Association participation could be the result.

A free pancake breakfast was served by Board Members, including our President, Rocco English, from 8 am to 10 am in a lakefront setting where two adjacent lakefronts have been restored using native plants. Appropriate plants in 3- and 1-gallon size containers were obtained from Biosphere, a local native plant nursery. These and other plants, potted from the restored sites were given to each attendee with everyone receiving at least one of each size. Approximately 12 varieties of plants were included and they were labeled so they could be viewed in their natural setting along the shoreline.

Attendance was encouraging with an estimated 35 lots represented. People arrived on foot, by cars and in all types of boats. Comments were great and people attended that have not been previously active in the Association. Based on the questions asked and the favorable comments about the restored lake fronts, it was obvious that sincere interest was created, along with the realization that it could be done and it looked good when in place.

...Lake Waunatta is a 68-acre lake with good water quality but of course, subject to the same negative impacts as other developed lakes. The present concern is a vegetative coverage of less than 3% because of a decline not fully understood. On the positive side, as the result of a request by the board, a basin study was funded for \$25,000 by the Orange County Stormwater Management Department of Orange County Public Works and is well underway. This study will identify and model stormwater input and flooding potential and result in the identification and prioritization of projects such as retrofitting of stormwater facilities, which will help insure the future health of Lake Waunatta. We are convinced that this was an excellent way to put dues directly and indirectly to work in a positive way, bringing more people and strength to the Association for future challenges.

— David Scharr

P.S. As a result of the event, three homeowners are already proceeding with shoreline restoration.

What were Florida lakes like before LAKEWATCH ?

A new research project is under way to answer this question and several more. While LAKEWATCH has made great strides toward establishing baseline data on hundreds of lakes during the past 14 years, the data are considered to be “recent” in the larger scheme of things.

There is little information about Florida lakes before the population surge and development of the past 30 years. So how does one go about finding historical water quality conditions of a lake?

According to Tom Whitmore, **paleolimnology** offers one way. Whitmore is a paleolimnologist with the UF/IFAS Department of Fisheries and Aquatic Sciences and is overseeing a new LAKEWATCH lake history pilot project.

Paleolimnology is the study of a lake’s history as revealed by sediments under the lake bottom. These sediments and microscopic fossils preserve records of past environmental conditions and can be studied to determine what the chemistry was like years ago. These same lake sediments can also be dated by the presence of naturally occurring radioactive elements; so if changes in water quality took place, they can be compared with the timing of land-use changes in the watershed.

For the next year, he and his crew are traveling to a limited number of lakes in the panhandle and along the central ridge of the state to collect their samples. Using transparent six-foot long tubes called sediment corers, they will withdraw samples from each lake. The process is similar to taking a clear straw, inserting it into a milkshake, placing a finger over the top of the straw and then pulling it out to see what’s inside the straw. In the case of core sampling from lakes, multiple layers of sediments show how the lake bottom has changed through time. A few feet of sediment can reveal several hundred years of lake history.

The most sensitive indicators of past water quality are diatoms — algae that form



distinctive glass shells and can be preserved for many years in the sediments. Extensive worldwide research with diatoms has been used to show effects of acid

Pediatrum diatom



Tom Whitmore, a paleolimnologist, is shown here with a sediment corer. Tom uses lake sediments to determine what types of algal communities were present in Florida lakes in pre-LAKEWATCH days.

rain, as well as past nutrient concentrations in lakes. However, diatoms can tell us much more.

Using statistical methods (also known as **models**) scientists have been able to establish relationships between recent diatom communities and recent water quality for a large set of Florida lakes.

Using these models, scientists can apply what we know about today’s diatom/water quality relationships and compare them with historical diatom assemblages—allowing us to estimate what water quality conditions were like in the past.

The approach being used is a core “top and bottom” comparison similar to the one used in Environmental Monitoring and Assessment Program (EMAP) studies to evaluate water quality history in other parts of the country. Sediment samples for diatom analyses are collected from the top of sediment cores and

also from a depth in the cores that represents water-quality conditions of approximately 100 years ago.

The 100-year-old samples pre-date development around most Florida lakes, and it’s anticipated this survey will provide a broad snapshot of water quality history throughout Florida.

The study is receiving scientific support from other investigators who have experience in paleolimnological research; Dr. Melanie Riedinger (Northeastern Illinois University) and Dr. Allen Moore (Western Carolina University) are paleolimnologists with experience in diatom analyses and are lending support to the LAKEWATCH project.

Moore is providing statistical expertise for data analysis, and Dr. Riedinger has been assisting with field coring operations. Riedinger is also conducting studies on the history of algal populations in Florida lakes using sediment cores that have been collected during the survey.

This is a pilot project and only a limited number of lakes will be surveyed.

Stay tuned!

Florida

LAKEWATCH

newsletter is generated by the *Florida LAKEWATCH* program, within the Department of Fisheries and Aquatic Sciences of the Institute of Food and Agricultural Sciences (IFAS) at the University of Florida (UF). Support for the LAKEWATCH program is provided by the Florida Legislature, grants and donations.

For more information about LAKEWATCH, to inquire about volunteer training sessions, or to submit materials for inclusion in this publication, write to:

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<http://www.ifas.ufl.edu/~lakewatch/index.htm>

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Why LAKEWATCH Can't Be An Advocate Commen

Continued from page 1.

Using volunteers for lake studies was not an idea fully accepted by professionals (including myself) in the mid-1980s. However, the lack of acceptance of volunteer assistance was based as much on professional ego as on fact. The folks from Lake Broward and Lake Santa Fe soon dispelled any doubts. Their dedication, attention to detail, and powers of observation were equal to that exhibited by many professionals!

I was duly impressed. As word spread to other lake groups in north Florida, I received additional requests for assistance. These requests were honored because volunteers offered a way of collecting data on Florida lakes that was not available to professionals due to financial constraints. In return, volunteers got the information they needed. Thus we had a win-win situation. However, the requests did not stop, so Sandy Fisher was hired as an assistant to work with the volunteers. Sandy, as many of you know from personal experience, is an extremely dedicated and enthusiastic individual. Her tireless efforts resulted in an increased demand in north and central Florida.

We decided to call the effort Florida LAKEWATCH. We also discussed how values and experiences of individuals living along or using a lake influenced their view of a "problem." We, therefore, decided that Florida LAKEWATCH could best serve citizens by providing all available information upon request and having Florida LAKEWATCH maintain a policy of strict neutrality when decisions needed to be made on how to manage a specific lake. We felt citizens needed to make such choices for themselves — after collecting, reviewing, and considering the best data available.

By the late 1980s, our small group of volunteers captured the attention of (then) Representative Bob Sindler (D-Apopka). Bob asked if a volunteer program could be developed for the entire state of Florida. After considerable discussion, we decided it was possible, but only with financial

support. In 1990 he decided to sponsor a legislative bill creating Florida LAKEWATCH.

Although many legislators thought the legislative bill was a great idea, strong opposition soon developed. Some professionals suggested that a volunteer water quality program could not work because it would be difficult to train volunteers and provide the proper quality assurance and quality control. Members of the business community were concerned that volunteers would act like vigilantes and collect contaminated water samples for the purpose of more regulation and litigation. Members of the environmental community opposed it because they felt the data would be used to let "polluters" off the hook and avoid their responsibilities for clean water. Regardless of who thought what, the bill originally failed in the House of Representatives.

Rep. Sindler must have concluded that any bill opposed by such divergent views must be good because he resubmitted the legislation in the 1991 Legislative Session. During that Session, his efforts were again supported by many of our elected officials. Two gentlemen in particular helped Bob establish Florida LAKEWATCH. With the guidance and leadership of Representative Burt Harris Jr. (D-Lake Placid) and Senator George D. Kirkpatrick (D-Gainesville, now R-Gainesville), Florida LAKEWATCH was established officially by an act of the 1991 Florida Legislature (F.S. 240.5329, Chapter 240).

2 What is Florida LAKEWATCH?

Perhaps the best explanation can be found in the actual Florida statute:

F.S. 240.5329

Florida LAKEWATCH Program.

The Florida LAKEWATCH Program is hereby created within the Department of Fisheries and Aquaculture (currently known as Fisheries and Aquatic Sciences) of the Institute of Food and Agricultural Sciences at the University of Florida. The purpose of the program is to provide public education and training with respect to the water quality of Florida's lakes. The Department of Fisheries and Aquaculture may, in implementing the LAKEWATCH program:

- ◆ Train, supervise, and coordinate volunteers to collect water quality samples from Florida's lakes;
- ◆ Compile data collected by volunteers;
- ◆ Disseminate information to the public about the LAKEWATCH program;
- ◆ Provide or loan equipment to volunteers in the program;
- ◆ Perform other functions as may be necessary or beneficial in coordinating the LAKEWATCH program.

Data collected and compiled shall be used to establish trends and provide general background information and shall in no instance be used in a regulatory proceeding.



From the beginning, Florida LAKEWATCH staff have endeavored, to the best of their abilities, to remain true to this legislative intent. In guiding their actions, I've always emphasized the importance of remaining neutral on all issues, and at the same time providing the best available information needed for management of the waterbody.

3 What LAKEWATCH Can Do

◆ We can explain what these data mean and help you identify the unique and not-so-unique ("normal") characteristics of your lake.

◆ For the lake user, LAKEWATCH volunteers have established individual lake databases that can be used to detect changes resulting from natural causes such as droughts, or human activities, such as development. More importantly, volunteers now have a database for their lake that can be taken to any professional for an expert opinion on a problem. Knowledge is power, and the staff of Florida LAKEWATCH is dedicated to providing citizens with knowledge.

◆ The hard work of many dedicated LAKEWATCH volunteers has provided the State of Florida a tremendous information base for its lakes and some coastal waters — currently over 1000 water bodies. The assembled information has contributed directly to our scientific knowledge and has provided the basis for advancing the science of lake management, even on an international basis.

◆ While LAKEWATCH data are not designed for use in legal regulatory proceedings, they are used routinely by water management districts, county commissions, citizens, and others involved in lake management.

◆ We can provide additional information that will assist you in interacting with various governmental agencies and individuals within the lake management arena.

◆ Florida LAKEWATCH is dedicated to helping citizens develop their own comprehensive long-term lake management plans by identifying as many management options as possible. I personally believe this



Dr. Daniel E. Canfield, Jr

is the only approach that can help resolve many of the conflicts that arise concerning lakes — and help protect the resources we all cherish. The development of a comprehensive management plan however, will not be an easy task. It is a "people" process and people have different values!

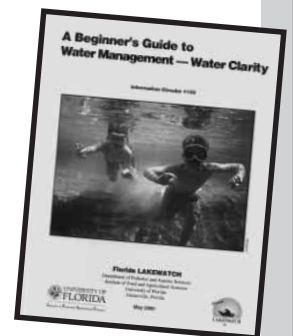
The TEAM approach is one way of dealing with this challenge. TEAM is a three-step process that we developed a few years ago. It involves stakeholders, such as lay citizens, scientists, governmental agency personnel, local businesses, etc., in the process of managing lakes. Using this approach, people work together to identify, define, and prioritize concerns and potential courses of action. TEAM was used recently by a group of citizens who developed an on-going comprehensive management plan for the Tsala Apopka Chain-of-Lakes in Citrus County. We have information about other formats being used, as well.

With all this said, I hope you understand why Florida LAKEWATCH cannot advocate a particular policy or solution to a lake problem. The staff of LAKEWATCH will continue to train, supervise, and coordinate volunteers to collect water quality samples. They will compile the data and disseminate information to the public. They will also analyze the data to help establish trends and provide general background information for your lake.

However, it will be your ultimate responsibility (as well as members of your community, and the appropriate governmental organizations) to develop a workable lake management plan!

Just for you...

Three new publications are finding their way into your data packets these days:



- ◆ **Circular 101 A Beginner's Guide To Water Management – the ABCs**
- ◆ **Circular 102 A Beginner's Guide To Water Management – Nutrients**
- ◆ **Circular 103 A Beginner's Guide To Water Management – Water Clarity**

These publications provide a basic introduction to the terminology and concepts used in the water management arena. Copies are available on the web at:

www.ifas.ufl.edu/~lakewatch/index.htm

or call :

1-800-LAKEWATCH (525-3928)

Countless Ways to Use LAKEWATCH Data

Students Excel in Science with a Little Help From LAKEWATCH



6th Grader Compares Tannins with Algae

As if collecting water chemistry data isn't enough, one LAKEWATCH volunteer recently helped a student win first place in the Lake County science fair. Earlier this Spring, Walt Gunkel of Trout Lake shared his monitoring expertise with Chelsea Ladd, a sixth grader at Windy Hill Middle School in Clermont.

Her project goal was to see what affects water clarity in lakes: tannins or algae. Chelsea decided to investigate this phenomenon after relatives visiting Florida believed area lakes to be "polluted" because of their color. She knew that wasn't the case, so she set out to find out why some lakes are dark and others are not.

Gunkel showed the young scientist how LAKEWATCH volunteers collect water samples and filter water for algae. They also took Secchi depth measurements from each of the five lakes in her project. After much work, Chelsea concluded that tannins affect water clarity more than algae. Chelsea's mother, Chris, says Gunkel was a big help adding, "I can't sing the praises of Mr. Gunkel enough. He was extremely knowledgeable and very willing to help."

Chris says Chelsea may expand on the project for next year's science fair.

8th Grader Studies Effects of Motorboats On Water Clarity

Claire Sunquist from Melrose in Alachua County wanted to see if motorboats affect water clarity so she called the LAKEWATCH office for a little assistance and information. Regional coordinator Julie Terrell was glad to oblige and showed

Claire how to use a Secchi disk to take both vertical and horizontal readings to measure water clarity. Claire performed her study on Lake Rosa in Alachua County. Her findings showed that motorboats do affect water clarity.

She says the horizontal measurements were the most useful for testing her hypothesis because gas and oil from the motors stay near the lake's surface. Claire won third place in this year's Lincoln Middle School science fair. In the fall she will attend the International Baccalaureate program at Eastside High School in Gainesville. Claire says she would like to do more research involving lakes.

Highlands County Leads the Way In Managing Lakes

Setting an example for others around the state, the Highlands County Lakes Association continues to forge ahead in their efforts to preserve Florida lakes.

Their latest project was a comprehensive lake management symposium held in Sebring this June, with more than 170 people in attendance. Participants included representatives from the South and Southwest Florida Water Management Districts, Florida Departments of Fish and Wildlife Conservation (FWC) and Environmental Protection (DEP), county commissioners and administrators, state representatives, and lake residents. Representatives from 14 individual lake associations were on hand to voice their concerns and ask questions of agency and local government personnel.

Mary Carter, a tireless LAKEWATCH volunteer, was instrumental in putting this event together. Carter is the executive director of the Highlands County Lakes Association (and one of Florida's unsung heroes). She says it all began with Joe Agnoli and several other fishermen concerned about Lake Istokpoga. They formed the association in 1991 and Mary became active in 1992 and took over soon



after, expanding the concerns of the association to include all the lakes of the county. "There's no way that I or the Highlands County Lakes Association can take care of 82 lakes — we just can't do it," Carter explains. "However, individual people on individual lakes are forming their own organizations and it's very exciting."

LAKEWATCH's Mark Hoyer and Dan Willis were also on hand to answer questions and offer encouragement to the newly formed lake associations. Hoyer noted that all of the 14 associations attending the symposium are monitoring for LAKEWATCH. He emphasized that data from their sampling efforts will be instrumental in developing management plans.

Clell Ford, Highlands County Lake Manager, echoed this sentiment recently when he wrote to LAKEWATCH saying that he relies heavily on LAKEWATCH data, and without it he "would be severely hampered in accurately assessing Highlands County lakes."



Representatives from the Lake June Association brought their lake litter problem to the table, so to speak, by displaying all the trash collected at just one storm drain that empties into Lake June.

Mary Carter

VOLUNTEER BULLETIN BOARD



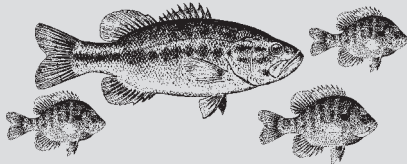
Hot off the press!

Fourteen years of LAKEWATCH data are now available in a three-volume data report.

Florida LAKEWATCH Data 1986-1999 contains long-term averages for every lake that's ever been monitored in the program — over 1000 lakes! The report also includes an assortment of other useful information compiled on a limited number of lakes including bathymetric (lake contour) maps, aquatic plant surveys, fish surveys, lake region information, latitude/longitude coordinates, and supplemental water chemistry.

The new books are available:

- ◆ in the reference section at Florida's ten state university libraries, as well as Water Management District offices and County Cooperative Extension offices;
- ◆ by calling the LAKEWATCH to request copies of individual lake pages. We can mail these to you or fax them;
- ◆ on the LAKEWATCH web site and can be viewed one lake at a time or downloaded in sections as PDF (portable document format) files. Both the data book and software for reading the report can be downloaded from the web site:
<http://www.ifas.ufl.edu/~lakewatch/index.htm>



Long-term Fish Population Trends: 1999 Data Report Complete

A major concern for many LAKEWATCH volunteers is the health of fish populations in their lake. With this in mind, LAKEWATCH launched several fish-related projects beginning last year. The first is a collaborative project between LAKEWATCH and the Florida Fish and

Wildlife Conservation Commission (FWC) to collect long-term fish data on 26 lakes. The Fish Diary project was next (see **Attention Anglers** on this same page).

Interesting comparisons have been made as a result of this on going 10-year study. The 1999 report, completed earlier this year, noted a positive correlation between chlorophyll and electrofishing catch per unit — meaning more fish are caught on lakes with higher chlorophyll concentrations. For a copy of the report or for more information call:

1-800-LAKEWATCH (1-800-525-3928).

Boating Safety Laws

It's that time of year to brush up on our boating safety and navigation laws.

Did you know that in Florida —

- ◆ It is unlawful for ANYONE under the age of 14 to operate a personal watercraft (PWC - also known as a jetski). There is no age limit to operate a jonboat, ski boat, etc. Also, as of October 1, 2000 you must be 18 years of age to rent a PWC. Currently the age is 16.
- ◆ Anyone born after September 30, 1980 is required to obtain a Boating Education ID card to operate a vessel with 10 or more HP. You can obtain a card from the US Coast Guard Auxiliary, U.S. Power Squadron, Boat US Foundation, or the Fish and Wildlife Commission. [Call 1-800-336-BOAT.]
- ◆ New dive flag law: Starting October 1, 2000, dive flags must be 20" X 24" and require a stiffener to keep the flag unfurled. Dive flags must be displayed so that they can be seen for 360 degrees.*

For more information on boating safety and laws, contact your area law enforcement agency or call:

Florida Fish and Wildlife Conservation Commission (FWC) at 850/488-5600.

* *Other changes have been made as well.*

Attention: South Walton County Volunteers

Please take your samples to Grayton Beach State Park. The previous collection center at the Tourist Center is no longer able to take your samples, due to limited space. For more information or directions, call:

Dale Schingler 850/231-4210

Attention Anglers

LAKEWATCH is launching a new project and we need your help! We're now gathering data on fish populations and angling activities on Florida lakes. Our goal is to use the data for a long-term database, similar to the way we use water chemistry data.

To do this we've designed a Freshwater Angler Diary that's big enough to write in, yet small enough to fit in a tackle box or dry storage compartment. Florida LAKEWATCH Program Leader Mark Hoyer is spearheading the effort and asks that every time you head to the lake for fishing, remember to take along a diary. At the end of (or during) each fishing "event" take a few moments to fill out the diary.

Once you've completed 10 fishing events, the diary is full and can be sent to LAKEWATCH for a replacement copy. Hoyer also points out that all information in the diary is confidential. It's simple, quick, and will help us gain a better understanding of your lake.

For more information or to request a Freshwater Angler Diary and measuring tape sticker, call the LAKEWATCH office:

1-800-525-3928

July 1 - July 16 Great North American Secchi Dip-In 2000

All primary Florida LAKEWATCH volunteers should have received forms to record July's Secchi depth for this annual event. If you haven't received one, you can fill out a form online. To be included in next year's mail list or to fill out a data form for this year, contact:

Dave Waller at Kent State University
Phone: (330) 672-3849

E-mail: dipin@kent.edu

Web Address: <http://www.dip-in.kent.edu>

Editor's Note: You can still submit this information after July 16th.



Mystery Algae ~ *Botryococcus*

Every summer the LAKEWATCH office receives numerous calls from lakefront residents regarding algal blooms and there seems to be a pattern:

- ◆ the substance has an orange color to it (one volunteer said that his lake had turned from its normal greenish tinge to the color of orange juice virtually overnight);
- ◆ it tends to collect on the windward side of the lake (this is known as a windrow);
- ◆ it leaves an oily residue on the water;
- ◆ lake residents are concerned, as many of them don't remember seeing this before.

As always, we encourage callers to send us a sample so we can positively identify it for them. While we have received other types of algae samples this summer, the majority were identified as *Botryococcus* (pronounced "ba-tree-o-COCK-us"). The good news is that, as far as we know, it doesn't cause any direct detrimental human health effects.

Botryococcus is a free-floating colony of indefinitely shaped algal cells that "produce an oil in quantity and often in such abundance that the cell contents are completely

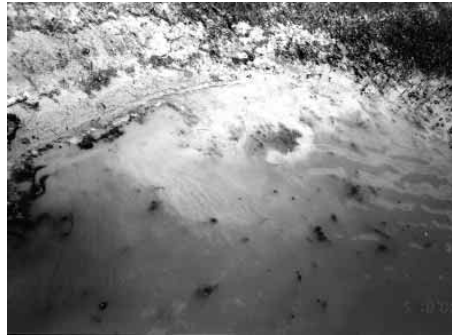


photo courtesy of John White

Botryococcus bloom on Lake Molly in DeLand.

obscured." The oils are released when the algae die. Its oily sheen is often mistaken for spilled oil or gasoline on lakes.

While *Botryococcus* is considered by many scientists to be a green alga, it is often recognized by its brown, reddish, or burnt orange color. But don't let the color fool you — it does contain chlorophyll and appears green at times.

Botryococcus algal blooms occur throughout the United States, including Florida. These blooms are possibly more noticeable on lakes during summer months.

Warmer water temperatures and increased sunlight provide longer growing periods for the algae. "While these blooms are not as frequent during winter months, we have had reports called in all year long," says LAKEWATCH Regional Coordinator David Watson.

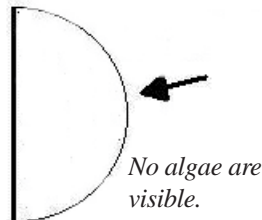
Dr. Ann St. Amand writes in her article *Algae - Nature's Artwork*, "The important thing to remember is that, although some algae have a bad name for fouling up lakes (and lake users), algae fulfill a variety of vital functions in lake ecosystems" (Dr. Ann St. Amand, LAKELINE, September 1995).

Note: Please don't hesitate to call with questions about this or any other mysterious blooms or plants in your lake. Algae samples should be collected in a small plastic container and kept in a dark cool place prior to shipping. (DO NOT FREEZE.) Plant samples can be mailed in a small ziplock bag. Place the stem, with leaves and flower attached, blow a puff of air into the bag, seal, and mail. For more information call 1-800-LAKEWATCH.

Greetings From the Water Chemistry Laboratory

Algae Filter Refresher Course

When folding your algae sample filters, please be sure to fold them exactly in half, with the algae inside. (Pretend you're making an "algae taco.") If any part of the algae sample is uncovered and exposed while putting the filter into its wrapper, some of it can rub off the sample filter and stick to the outside wrapper. That portion of the algae is lost and the sample is somewhat less than accurate. Probably not much is lost, but you work hard to collect these samples and we all want them to be the very best they can be. Thanks for your help and keep up the good work!



Like this!



Not like this!

Dear Friend of Your Lake,

Do you have a concern about your lake and an interest in its future? If you have access to any type of boat, can spend two hours each month on your lake, and are willing to monitor for at least a year, you might be eligible for the Florida LAKEWATCH volunteer program.

Florida LAKEWATCH is currently the only research program gathering monthly data for such a large number and wide variety of Florida's lakes. This would not be possible without the help of volunteers. Participants in the Florida LAKEWATCH program receive:

- * a free newsletter subscription
- * use of sampling materials
- * training in monitoring procedures
- * periodic reports and an annual report
- * access to lake experts (limnologists)
- * invitations to LAKEWATCH activities.

For more information contact:

Florida LAKEWATCH
7922 NW 71st Street
PO Box 110600
Gainesville, FL 32611



1-800-LAKEWATCH (525-3928)
E-mail: lakewat@ufl.edu

<http://www.ifas.ufl.edu/~lakewatch/index.htm>