Calendar of Events

March 10 - 12

Florida Chapter American Fisheries Society 18th Annual Meeting

Theme: *Freshwater and Marine Fisheries Enhancement: A Realistic Examination*

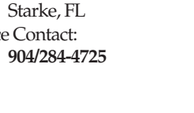
The symposium will examine the success and failure of fisheries stock enhancement activities in both coastal marine and freshwater ecosystems.

In addition to attending the technical sessions (a series of 20 minute presentations given by fisheries scientists) the conference offers the opportunity to meet and network with the speakers.

Withlacoochee Training Ctr./Brooksville, FL

Contacts:

R. Grant Gilmore 561/465-2400 ext 203
Laurence Connor 352/257-6631



March 26 - 29

League of Environmental Educators in Florida 18th Annual State Conference

LEEF is a professional organization comprised of individuals, institutions and agencies committed to environmental education and provides a network for communication, personal and professional growth, and awareness of Florida's natural environment and educational resources.

The conference offers full and half-day workshops, field trips and technical sessions that emphasize hands-on activities and participant involvement.

Topics include: Environmental Education and Technology, Environmental Education Across the Disciplines, Professional Assistance, Uniquely Florida, Innovative Programs, Environmental Issues and Concerns.

Exhibitor space is also available; any group or organization that serves as a resource to environmental educators — both profit and nonprofit, private and public sector — is invited to exhibit.

On Sunday, an all-new Eco-Arts Festival will be held featuring environmental and natural crafts, nature photography, drama, and folk arts.

Camp Blanding Starke, FL

General Conference Contact:

Vicki Crisp 904/284-4725

April 15 - 17

7th Annual Southeastern Lakes Management Conference ~ Hosted by Florida Lake Management Society (FLMS)

This conference combines the annual meeting and conference of the FLMS with the annual Southeastern Lakes Management Conference in Orlando.

LAKEWATCH staff and researchers will be presenting eleven out of the 90 talks that will be given concurrently (over a four day period). The talks will deal with a wide variety of topics related to water resources and lake management including aquatic plant management, fisheries and boating issues, Lake Okeechobee, managing urban lakes, lake restoration projects, and the Rodman reservoir, to name a few.

Full conference registration fee is $85 (lodging is NOT included).

However, LAKEWATCH director Sandy Fisher will be moderating an evening session entitled *Bridging the Gap Between Professionals and Citizens* that will be free and open to the public on Wednesday, April 15 from 7:30 to 9:00 p.m.

Also an informative "beginning limnology" workshop will be held on Saturday morning Arpil 18 (*for a fee of $25*).

For more information call:

Carey Cordell / Conference Chairman
407/880-6334 (phone) 407/880-6324 (fax)

*Registration forms and information are available on the internet at:

http://www.nalms.org/flms/index.htm

May 11 - 14

Aquatic Weed Control, Aquatic Plant Culture and Revegetation Short Course

This short course offers aquatic plant managers and technicians new information on aquatic weed and plant identification and biology, as well as control techniques including biological control, herbicide characteristics, herbicide application and regulatory information. Continuing education units are available to participants.

Contact: Beth Miller-Tipton
352/392-5930 (phone) 352/392-9734 (fax)
E-mail: bamt@gnv.ifas.ufl.edu

~ Tip of the Iceberg ~

READERS please note that the items listed here are simply the "tip of the iceberg." Due to limited space, we are not able to give full details about these activities. Please call the contact persons provided for more information.

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 to study such a large number and a wide variety of Florida's lakes. However, without the help of volunteers, it would not be possible.

Participants in the Florida LAKEWATCH program receive:

* a newsletter subscription
* use of sampling equipment
* training in monitoring procedures
* periodic reports on your monthly data, and an annual report
* access to lake experts (limnologists)
* invitations to LAKEWATCH seminars

For more information about how you can become a LAKEWATCH volunter, contact:

***Florida* LAKEWATCH**
7922 NW 71st Street
Gainesville, FL 32653
1-800-LAKEWATCH (1-800-525-3928)
or (352) 392-9617 ext. 228
email:
lakewat@nervm.nerdc.ufl.edu

LAKEWATCH WEB SITE:
http://www.ifas.ufl.edu/~lakewatch/index.htm

Florida
LAKEWATCH

A Publication Dedicated to Sharing Information About Water Management and the Florida LAKEWATCH Program Volume X I 1998

It's All About Data

LAKEWATCH volunteers collect water samples every month and deliver them to strategically placed freezers at collection centers around the state. In the last issue of the newsletter (Fall 1997, Volume X), we provided a brief narrative of *a day in the life of a water sample* — to shed a little light on what happens to LAKEWATCH "water-sicles" after they've left the volunteers' hands.

In this issue, we continue the theme by discussing the end result of thousands of hours of volunteer water collection and professional laboratory analysis — the *data*.

Remember your data packets* — those pages of tables, graphs, and numbers you receive once a year in the mail (or at annual regional LAKEWATCH meetings)? In an effort to help you maximize your understanding of and ability to use LAKEWATCH data, we've put together the following *data odyssey*. Happy trails!

** If you haven't received a data packet, you can obtain one by calling the LAKEWATCH office at 1-800-525-3928.*

Why learn about data?

Along with displaying tremendous dedication for collecting monthly water samples, Florida LAKEWATCH (FLW) volunteers are also showing a keen interest in learning how to interpret their regular lake data reports.

With so many lakes in the state* and limited professional personnel (biologists, limnologists, lake managers, etc.), volunteer lake monitors are finding they can make an added contribution to the future of Florida lakes by becoming familiar with a few basic limnology ** concepts and terms — including studying their regular LAKEWATCH data reports for patterns or trends.

Such knowledge not only helps volunteers communicate more effectively with lake management professionals but also provides a tremendous service to the professionals. How?

We all know what it's like to try to be "in ten places at once." With thousands of lakes to consider, Florida lake management professionals certainly have their work cut out for them. A volunteer capable of spotting a potential problem in his/her own lake data can be an asset indeed.

That's why one of our goals for this year is to spend more time discussing LAKEWATCH data with you in this newsletter, at volunteer regional meetings held around the state (to which you will be invited), and at our new web site location. ***

LAKEWATCH data are not just for scientists. Everyone can learn to interpret their data and use the information in a variety of everyday applications.

We'll begin our *data odyssey* here in this issue with the basics including:

Of course, this is only the beginning. In the next LAKEWATCH newsletter we'll explore how LAKEWATCH data are being used by both professionals and citizens, as well as an in-depth look at how to spot trends in your data.

No matter how you choose to use LAKEWATCH data, our goal is to answer any questions you might have. Please don't hesitate to call our toll-free citizen message line (1-800-525-3928) for more information. — Editor

** Florida has more than 7,800 lakes that are 10 acres or greater in size.*

*** Limnology - the science that deals with the physical, chemical, and biological properties and features of fresh waters, especially lakes and ponds.*

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

UNIVERSITY OF FLORIDA
Institute of Food and Agricultural Sciences
Department of Fisheries and Aquatic Sciences

From the director...

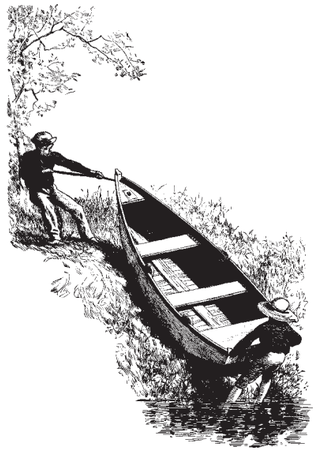
What You Can Do For Your Lake

It's the time of year for making a second wave of resolutions. Many of you have been wanting to do something special for your lake. Of course I always suggest you collect water samples for LAKEWATCH, but sometimes you want to do something different. Here is a menu of possibilities that researchers and lake managers have come up with.

1 Keep a fish diary in which you, and perhaps other anglers you recruit, record information about your catches. Besides the length, weight, and type of fish caught, it is useful to note the time you start fishing and the time you end so that the amount of time it takes to catch a fish can be calculated.* Contact us or check our website for a suggested data sheet.

2 Measure the rainfall on your lake by putting up a rain gauge. The gauges cost only a couple of bucks at most hardware stores and are very easy to use. The information is invaluable. Be sure to put your gauge in the open, not underneath structures or trees. Read and empty it every day it rains, and record your findings.

3 Locate all inflows (creeks, springs, pipes) and outflows to your lake. It is surprising, but often this elementary information is not documented. Your county property appraiser's office can give you a "blue line" map (for about $2) on which you can mark locations. If you really have a detective streak in your nature, you can try to find out where the inflows come from.



4 Talk with long-time residents to compile a history of the land use of your lake's watershed. What was on the lake shore 50 years ago? You may learn surprising things. Old photographs can be collected and made into a lake scrapbook.

5 Are you a bird watcher? There are many questions about bird populations and their movements in Florida. You can help by keeping records of your observations.

6 Often the clarity of the lake water is important to residents. You can make a simple device called a Secchi disk (we can show you how) that can be used to document changes in clarity and possibly lead you to determine what causes them. For example, is your lake's water clarity affected by heavy rainfall? drought? high temperatures? amount of boat traffic? seasons? You can do your own testing.

7 One of the most powerful ways to help your lake is to form an association of lake residents. Waiting until a crisis occurs is often too late. An association can focus on developing networks for communication and education among the members so that when you need to communicate in a hurry and act in concert, you can. It can also facilitate the development of relationships with government and regulatory people which may come in handy. In addition, an association can provide social contact, a sense of community, and (in my experience) the best covered dish buffets in Florida.

I hope one or more of these suggestions tickles your fancy. At the very least it may inspire you to think of other ideas. Let me know if we can help. By sharing our ideas, we can make 1998's trip around the sun the most interesting one yet. Stay in touch, okay?

Sandy Fisher

**Biologists call this "catch per unit of effort."*

Letters to LAKEWATCH

Dear LAKEWATCH,

Once again our Lake Hickory Nut Country Fair was a huge success. We were able to raise $357 for our gift to Florida LAKEWATCH. One of our members made a beautiful gingerbread house and we had a raffle that raised $100 toward our gift this year.

The remainder of the proceeds came from selling hamburgers, hot dogs, and meatball subs. It seems like every year we are able to double the amount of our proceeds. Let's hope it continues!... *Linda Temple, the Lake Hickory Nut Homeowners Association and all the Lake Hickory Nut LAKEWATCHers*

Dear LAKEWATCH (Ms. Fisher),

I would like to personally thank you for giving me so much important information about my science fair project, "What Factors in Lake Weir Effect the Edibility of Fresh Water Mussels?" You helped me so much that I am now on my way to the state science fair.

With Sincere Appreciation, Chris Van Eldik

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:

Editor / *Florida* LAKEWATCH
7922 NW 71st Street
Gainesville, FL 32653-3071
or call 1-800-LAKEWATCH (525-3928)
352-392-9617 ext. 228

All unsolicited articles, photographs, artwork or other written material must include contributor's name, address and phone number. All submissions shall remain the property of *Florida* LAKEWATCH and cannot be returned. Opinions expressed are solely those of the individual contributor and do not necessarily reflect the opinion or policy of the *Florida* LAKEWATCH program.

Inclusion does not constitute endorsement, nor does exclusion represent censure of any item, organization, individual, or institution by the University of Florida or the Florida LAKEWATCH program.

Director	Sandy Fisher
Chemist	Mary Stonecipher
Editor	Amy Richard

VOLUNTEER BULLETIN BOARD

Florida LAKEWATCH Has New (& evolving) Web Site!

Tap into the new LAKEWATCH web site and let us know what you think. Many areas still "under construction" but we are thrilled to be up and running — a major accomplishment for our busy staff.

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

Florida Lake Management Society (FLMS) is now online!

You can access FLMS from the LAKEWATCH web site under the section called "Links for Lake People" or you can tap in direct at:

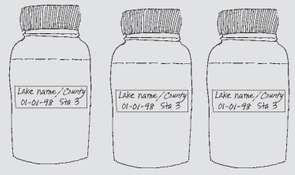
http://www.nalms.org/flms/index.htm

Attention Nye Park Collection Center Users

Replacement water sampling supplies (empty bottle packets) will be located on the BOTTOM two shelves of the stand-up freezer each month.

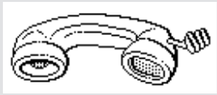
Please remember to place your frozen samples on the TOP two shelves until the shelves are full. Once those shelves are full, please place your frozen samples on the BOTTOM two shelves BEHIND the replacement supplies so other volunteers can easily find the replacement supplies.

Note: Desiccant will be stored on the freezer door shelves, along with the new filter packets.



Changes at Keystone

As of early December, the Keystone Community Center in Hillsborough County was closed for renovation. The LAKEWATCH drop-off point has been moved to the Austin Davis Library next door. Keystone area LAKEWATCHers should deliver samples to the library and ask the librarian for directions to the storage area. (Samples can also be taken to Nye Park in Lutz, FL.)

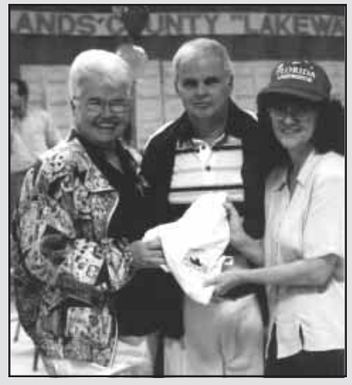


DON'T HANG UP!

LAKEWATCH regional coordinators will be making their annual verification calls in the coming weeks, so please don't hang up!

The calls are our way of "touching base" to be sure you have everything you need, to answer any questions you might have, and to verify your correct mailing address, phone number, and any other pertinent information for our volunteer data base.

Volunteers that do have questions for us are encouraged to write down their questions ahead of time so they'll be ready when we call. Your patience is appreciated!



Director Sandy Fisher presented special LAKEWATCH t-shirts (with our new FLW logo) to Herb and Sue Sauls recently for their dedicated lake monitoring efforts. They have sampled lakes Francis and Redwater in Highlands County since July of 1991 !

Eagle Eye, Inc. is at it again!

Eagle Eye, Inc. (EEI) students helped raise awareness about lakes in Highlands County by constructing placards for every lake in the county and carrying them in Avon Park's holiday parade—while wearing LAKEWATCH hats and EEI shirts. The students walked alongside a float representing colonial holiday traditions and lifestyles. The float was led by two members holding the EEI banner.
Good job!

LAKEWATCH data helped make it happen ~ Florida Lake Region Maps Now Available

Folks that attended the '97 LAKEWATCH regional meetings enjoyed a sneak preview of the Florida Lake Regions Project results and accompanying maps. Now, two-sided posters complete with color photos, maps, and lake region descriptions are complete and ready for distribution.

Initiated by the Florida Department of Environmental Protection and working in cooperation with the University of Florida/Department of Fisheries and Aquatic Sciences and the U.S. Environmental Protection Agency, both the Lake Regions report and posters are the culmination of a three-year project to document regional differences in the water chemistry of Florida lakes.

As a result of the project, 47 lake regions were identified and mapped out based on similarities in soil type, vegetation, climate, land use, land cover, physical features of the area and last but not least, water chemistry.

The map posters are 36 by 48 inches in size and contain graphs, maps and technical data (they are not for decoration). They are intended for use by water management professionals, extension agents, researchers and interested citizens. Due to the size and expense associated with mailing the posters, they are only available for hand delivery or pickup.

A limited supply will be available at LAKEWATCH regional meetings this year. They will also be available for pickup at DEP district offices, water management district offices and some extension offices. In addition, quantities will be available at the upcoming 7th Annual Southeastern Lakes Management conference in April and the League of Environmental Educators conference in March. (See calendar of events.)

Though obtaining a copy of the poster may be a bit of a challenge, your efforts will be rewarded by the wealth of information they provide.

LAKEWATCH data were an integral part of the project and volunteers should be proud. For more information, call the LAKEWATCH citizen message line at 1-800-LAKEWATCH (1-800-525-3928).

The Secchi Disk

What is it and how is it used?

Spelled with a capital "S" the term *Secchi* refers to the name of an Italian astrophysicist who is credited for devising disks made of white clay, and (also) by stretching canvas over a circular iron frame, and then using them at the end of a rope to measure water clarity.*

Pietro Angelo *Secchi*, a scientific advisor to the Pope, used his newly invented devices to measure water clarity in the Mediterranean Sea from a papal steam yacht *The Immaculate Conception* on April 20, 1865. On that day, he began a series of experiments that would last six weeks. Over a century later (133 years to be exact) limnologists and volunteer monitors around the world use the Secchi disk as an inexpensive and indispensable tool for measuring water clarity.

Limnologist Bob Carlson from Kent State University in Ohio points out in his article about Secchi disks,** that Secchi disk measurements can prove invaluable for a variety of reasons.

Says Carlson, "if you really want to know more about your lake and the factors affecting water quality, you can take samples at different locations around the lake, because transparency may vary from location to location.

"The water may be more turbid in areas near inflows of water or in nearshore regions where wind resuspends the sediments. If there is a prevailing wind, then the algae may pile up on the lee end of the lake. If you take daily readings, you might see the effect of rain storms, or windy days or recreational traffic. Do you think that boating is making the lake more turbid? Measure transparency before and after peak use periods. The use of the disk is probably more limited by imagination and curiosity than by the limitations of the disk itself."

In addition, Carlson writes that "seasonal changes in Secchi depth can give clues about how a lake works. Transparency also reveals long-term trends. Agencies in Vermont and Minnesota have found that Secchi depth was better able to detect long-term trends than either phosphorus or chlorophyll concentrations."***

How is a Secchi disk used?

LAKEWATCH instructs its volunteers to use the following technique:

Without wearing sunglasses, an individual lowers the disk into the water at the end of a non-stretching rope — on the shady side of a boat. The rope has been premarked in one-foot increments.

At the point at which the disk disappears from view, the rope is "marked" at the waterline. (LAKEWATCH volunteers attach a clothespin to mark the rope.)

The amount of cloud cover at the time of dipping is then observed and the disk and rope are pulled into the boat. The rope markings, in one-foot increments, are counted and recorded along with information about cloud cover.

While there may be some variation in technique used by monitoring groups, Bob Carlson stresses in his article that no matter which technique is used, "once a procedure is agreed upon, it is important that everyone follow the procedures exactly, otherwise the consistency and therefore, the reliability of the procedure will be lost."

** FYI - Scientists sometimes describe water clarity as "transparency."*
*** LAKELINE magazine, April 1995; published by the North American Lake Management Society.*
**** See the next issue of LAKEWATCH newsletter for more about seasonal changes and long-term trends.*

Why We Monitor the Things We Do

(Continued from page 3)

#4 Why measure total nitrogen (abbreviated as "TN")?

Nitrogen is another **nutrient** found in lake water that is also essential to plant growth.* Similar to phosphorus, scientists measure **total nitrogen** in lake water to gain an idea of the potential for plant life and/or algae in that water body; lakes containing low levels of total nitrogen tend to have low amounts of plants and/or algae and lakes containing high levels tend to have more plants and/or algae.

With this simple bit of knowledge under your belt you're now ready for the next step — looking at your LAKEWATCH data and learning to spot trends and patterns. Look for a continuation of our data odyssey in the next LAKEWATCH newsletter. FLW

Q & A

LAKEWATCH volunteers are asking some great questions these days so we decided to include them in our newsletters when possible. Send us your question(s) and receive a Secchi disk key chain for sharing your curiosity. (See the LAKEWATCH address on page 8 in "Dear Friend of Your Lake.")

Question — We have enormous tadpoles (6 to 8 inches in length from nose to tail tip) in the shallows of our lake. What kind of frog do they transform into?

Answer — Such large tadpoles could be either bullfrog or pig frog tadpoles. (See an amphibian identification book to be sure.*)

Bullfrogs are the largest frogs in Florida. Their bodies are up to 8 inches long, dark green to black in color. Their heads may be the same color as the back or dark/bright green.

"While the bullfrog is one of the best known frogs, it is actually rather uncommon in most of Florida, where it is replaced to some extent by the pig and river frogs.

"The tadpoles are quite large and are greenish brown, flecked with black...tadpoles may not metamorphose until after their second year."*

Pig frogs are large with a body length of 6 inches. Their back is brownish to gray in adults. Younger pig frogs may have bronze or coppery sides with faint dark spots.

Tadpoles are large (usually over 3.9 inches—not including the tail portion). "The back is dark green, the belly is yellowish with a reticulated pattern of black. The muscular part of the tail is light green with dark spots, and the lower fin has dark spots while the upper does not. The tadpole probably overwinters and transforms the following spring."*

** from the Handbook of Reptiles and Amphibians of Florida, Part III, Windward Publishing, Inc., 1988.*

Why We Monitor The Things We Do

LAKEWATCH monitors four components of lake water (for space reasons, we'll refer to them as the *big four* throughout this article):

> water clarity
> chlorophyll
> total nitrogen
> total phosphorus.

The short answer to *why* we monitor the *big four* is because lake specialists tell us to; they say these four measurements provide the basic core of information they need to manage lakes.

To understand the long answer, we need a short course in how lakes work — starting with a definition of *limnology*:

Limnology - the science that deals with the physical, chemical, and biological properties and features of fresh waters, especially lakes and ponds.

In a perfect world, limnologists* would have both time and funding to gather information about all three of these basic scientific lake *properties* (see below):

Physical properties include the physical shape of the lake (depth, shoreline, and location).
Chemical properties include nutrients (such as phosphorus and nitrogen), oxygen levels, temperature, alkalinity, etc.
Biological properties include all living and dead organisms in a lake — algae, plants, invertebrates, fish and mammals.

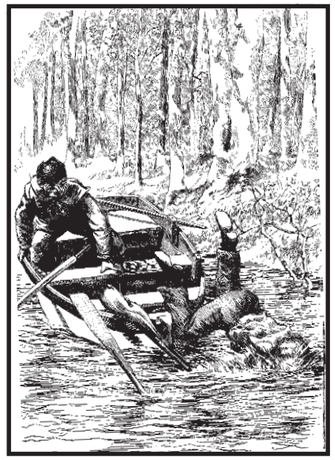
In reality, gathering baseline data for every one of these properties is both prohibitively expensive and time consuming for professionals. In response to this dilemma, Florida LAKEWATCH constituted a few simple and inexpensive measurements that can provide an overall "picture" of how a lake system functions, giving limnologists* what they need.

Yes, there are many other lake issues *(mercury concentrations, oxygen levels, bacteria counts)* that need to be addressed in Florida.** Obtaining the basic core *(the big four)* of information on a lake can help both citizens and professionals zero in on the specific issues they're concerned with, and provide clues toward answering their questions.

** a specialist in the study of freshwater lakes — especially their biological, chemical and physical properties.*
*** In addition to working with volunteers around the state to monitor their lakes (for the big four), FLW also facilitates communication between citizens and agencies that do monitor for other aquatic concerns such as mercury, bacteria, oxygen, etc.*
**** See more about the Secchi disk on pg 6.*

#1 Why measure water clarity?

Along with collecting water samples, volunteers have been using a device called a Secchi disk*** to measure water clarity. Several things can affect water clarity including:
> algae growth (microscopic plants that float in the water),
> tannins (tea-colored water),
> suspended solids (tiny particles, often sediments stirred up from the bottom),
> LAKEWATCH volunteers falling head over heels into the lake. (Everyone awake?)



We measure water clarity because when compared with your other LAKEWATCH data, Secchi disk measurements can help determine if one or more of the above factors are affecting your lake's water clarity. This is especially important if you are wanting to manage water clarity (for safe swimming or diving, or managing a fishery, etc.).

Secchi disk measurements can be done quickly, easily and cheaply. (In a pinch, a homemade Secchi disk can be fashioned from something as simple as a white Frisbee bolted to a small weight and attached to a cord.)***

#2 Why measure chlorophyll?

Measuring chlorophyll is an indirect way of estimating the amount of algae in a lake. How does one *indirectly* estimate something? The dynamic chlorophyll/algae duo provides a perfect example.

Chlorophyll is a green pigment in algae that allows the algae to make food using sunlight. In fact, most algae are so dependent upon chlorophyll pigments for survival that measuring **chlorophyll** concentrations in lake water is a handy way to estimate the amount of **algae** in your lake.

So *why* do we want to estimate the amount of algae in a lake? For several reasons:

Reason #1 The amount of algae in a lake can help explain why one lake is "greener" than another. Questions concerning lake water *color* are probably asked more than any others and may have inspired the practice of limnology in the first place.

Reason #2 As mentioned earlier, the amount of chlorophyll (algae) in a lake can affect water clarity. Lake residents and/or lake managers can use this information to develop a lake management plan specifically geared toward water clarity issues.

Reason #3 The amount of algae in a lake is referred to by limnologists as **primary production**. The amount of primary production occuring in a lake gives us an idea of a lake's ability to support populations of zooplankton*, fish, birds, and reptiles. Lake residents interested in managing the amount of fish and wildlife in a lake will be particularly interested in this member of the *big four*.

** zooplankton - small aquatic invertebrate animals that live in open water*

#3 Why measure total phosphorus? (abbreviated as "TP")?

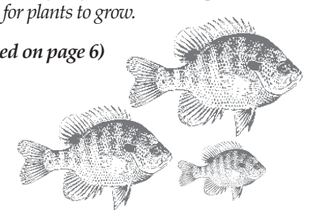
Phosphorus is a **nutrient** found in lake water. We measure **total phosphorus** because phosphorus is one of several essential building blocks* required for plant and/or algae growth in a lake.

The amount of total phosphorus in lake water gives us an idea of the amount of plants and/or algae that can be *expected* in a lake system. (Sooner or later, questions regarding lake systems always seem to return to a lake's ability to support life, starting with plants at the base of the food web.)

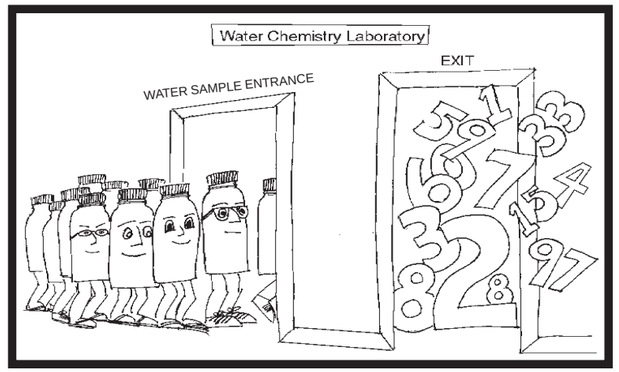
Lakes containing low levels of total phosphorus tend to have low amounts of plants and /or algae. Lakes containing high levels tend to have more plants and/or algae. This is valuable information for a lake resident or lake manager wanting to gain an idea of the potential for fish populations and wildlife abundance in a lake system.

** Keep in mind that along with other essential nutrients, both phosphorus and nitrogen have to be present for plants to grow.*

(Continued on page 6)



What are "data" anyway?



Datum: *something accepted as a base for inference; a fact on which reasoning is based.*

Data: *plural of datum; facts or numerical figures from which conclusions can be inferred; information.*

"Data."

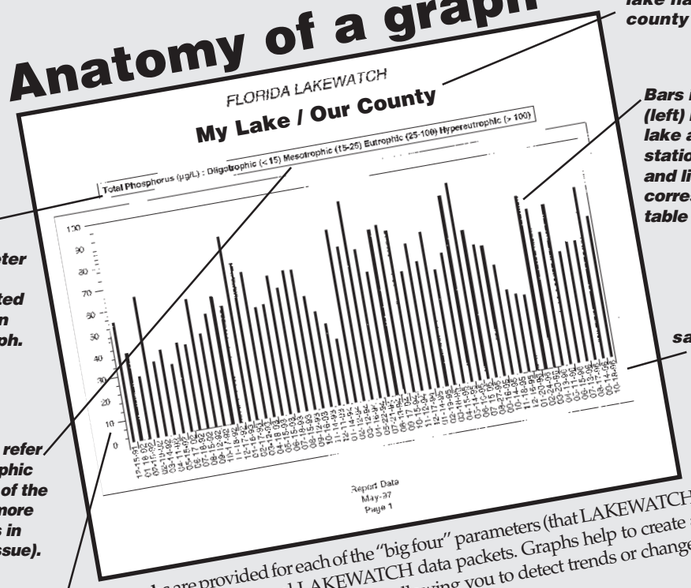
The term itself doesn't exactly conjure up visions of grandeur. However, upon closer inspection, it quickly becomes apparent how powerful data can be. Just ask the folks that depend on it daily — Wall Street investors, sports fans, teachers, politicians, physicians, business managers, biologists, and lake managers — to shape public policy, diagnose diseases, predict weather patterns, set prices on the stock market, and to create lake management plans.

So what are *data*?

As the definition suggests (see above), data are simply numbers — thousands upon thousands of numbers. In the case of LAKEWATCH data, they are recorded and compiled in spreadsheet form in a computer.

These numbers we call data are "worth their weight in gold" to both professionals and citizens needing information for managing lakes, particularly if the numbers have been accumulated at regular intervals for a period of years. This is precisely why monthly LAKEWATCH data, collected sometimes for many years, are so valuable.

Anatomy of a graph



Name of the parameter being illustrated below in the graph.

Terms refer to "trophic state" of the lake (more on this in next issue).

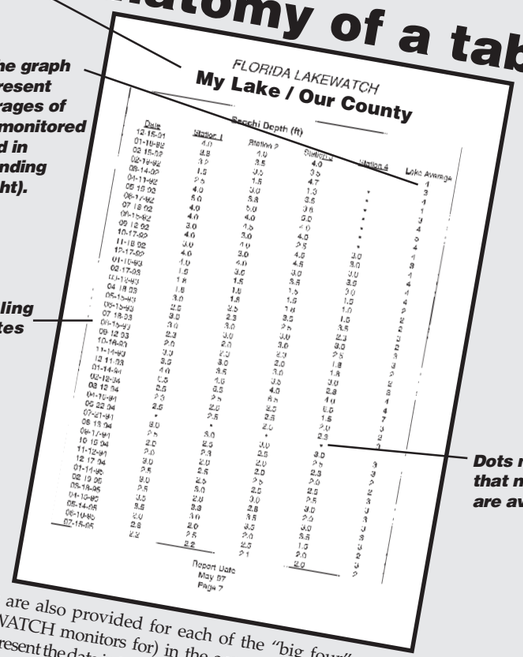
Scale shown here is to be compared to bars at the right for an estimate of the amount of total phosphorus in the lake.

lake name and county name

Bars in the graph (left) represent lake averages of stations monitored and listed in corresponding table (right).

Graphs are provided for each of the "big four" parameters (that LAKEWATCH monitors for) in annual LAKEWATCH data packets. Graphs help to create a visual picture of the data over time, allowing you to detect trends or changes easily.

Anatomy of a table



sampling dates

Dots mean that no data are available.

Tables are also provided for each of the "big four" parameters (that LAKEWATCH monitors for) in the annual LAKEWATCH data packets. Tables present the data in its most basic form—rows and columns of numbers. Tables can be quite useful in that they make it possible to compare measurements from each station at one glance—making it easy to see if one station has consistently higher or lower numbers than the others.

LAKEWATCH Data

LAKEWATCH is always open to your suggestions for customizing data formats to better fit your needs. Call us with your ideas(1-800-525-3928).

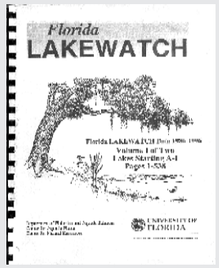
What Does It Look Like?

While it's true that data are generally collected and intended for use by professionals, citizens willing to invest a little time learning how to interpret the numbers can use lake monitoring data for myriad of everyday applications including making decisions about purchasing lakefront property, determining what to do about aquatic plants in a lake, deciding the fishing potential for a lake, or even designing a child's science project.

Florida LAKEWATCH data are available to anyone who requests it, regardless of their scientific background. Different formats are offered according to how it will be used:

Raw data or numbers, can be provided on computer disk (most lake management professionals request their data in this format), as an email attachment, or as a printout on paper (hard copy). In the future, we hope to make the data available from our LAKEWATCH website.

LAKEWATCH Data Books contain data on every lake monitored for the year. For space reasons, only monthly averages from the different monitoring station locations are provided for each of the "big four" parameters* measured, instead of listing numbers for every single station sampled that year.



The book also includes an assortment of useful information compiled from a variety of other sources including latitude/longitude of each lake and lake region information which consists of brief descriptions of each lake's geology and hydrology.

Lake acreage, plant survey information, bathymetric maps*** and supplemental water chemistry data are included for some, but not all, of the lakes. (*Are you lake anglers paying attention? This is useful information for finding the big ones!)*

The data book's only drawback is that there are limited quantities printed each year.

The good news? These books are available for your use at many county extension offices, all water management district headquarters and all nine state university libraries. (See the reference librarian for assistance.) Please let us know of any location where you think it would be used, and we will try to place the books there.

You may not need to see the entire book (the 1996 Data book contained 784 lakes), but may only be interested in one or two lakes. In that case, you can always call our toll-free message line (1-800-525-3928) and request photocopies. We can fax or mail the information to you.

Periodic summaries from the water chemistry laboratory are provided by the University of Florida/Department of Fisheries and Aquatic Sciences to the primary samplers on each lake. These reports usually consist of only a few months worth of data and are primarily a courtesy to inform volunteers that their samples are being processed.

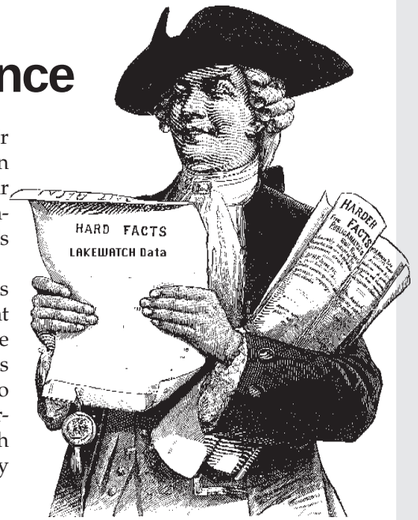
Data packets containing all the lake monitoring data for each individual lake are assembled once a year. The packets are made available to LAKEWATCH volunteers or anyone who requests the information. The packets include three sections:

- a report including one table and one graph for each of the four parameters measured,*
- a handout explaining how to "read" the Florida LAKEWATCH data,
- a letter of explanation from your regional coordinator which summarizes your lake's biological productivity and compares your lake to other lakes in its region.**

How Can I Get The Data?

Call us!**** Requests will be handled by our LAKEWATCH regional coordinators who can explain your data as well as help you decide which format is best for you.

Free Lake Insurance



Many volunteers regard their data packet as a valuable collection of "hard numbers" concerning their lake, and file it away as a sort of insurance policy for the professionals to use if the need should arise.

Having actual data guarantees that you can legitimately document the current conditions in your lake for comparison with lake conditions in the future. (You will not have to rely on memory or anecdotal observations, which are often viewed with a skeptical eye by regulatory agency personnel and government.)

** See "Why We Monitor The Things We Do" p. 3 ** See "LAKEWATCH Data At Work", Volume VII, Fall 1996) *** Contour maps of the lake bottom.*

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