

## A Day In The Life Of A Water Sample



Photo by Andrea Billups Courtesy UF/IFAS Media Graphics

*You've finished collecting water samples on your lake for another month. Your boat is secure at the dock. Labels have been carefully filled out on the sample bottles; the water's been filtered, data sheets completed, and samples delivered to the collection center. Now it's time to relax and enjoy another peaceful evening on your lake. And you should. You deserve it.*

*While you're relaxing and enjoying that beautiful sunset, did you ever wonder what happens to those precious samples after you've done your part? Read on to discover a day in the life of a LAKEWATCH water sample...*

Photos by Amy Richard



*Eric Schulz gathers yet another load of water samples from the walk-in freezer. The samples will be defrosted overnight (right) and analyzed in a water chemistry laboratory at the University of Florida's Department of Fisheries and Aquatic Sciences.*



*Water sample bottles cover the countertops as they defrost in the water chemistry laboratory. Each month, the laboratory conducts over 5400 separate analyses for LAKEWATCH: 600 lakes X 3 samples per lake X 3 parameters (nitrogen, phosphorus, chlorophyll).*

### 1 Pick-ups

You've probably guessed the next step in the life of your water sample; after being delivered to the nearest collection center, one of 42 throughout the state, your sample is stored in the freezer until one of the LAKEWATCH staff arrives to collect them. Great care is taken to keep the samples frozen during transport, to maintain the integrity of the water.

### 2 Storage

After transport, your samples are then placed in a large walk-in freezer at UF's Department of Fisheries and Aquatic Sciences, where they will remain, along with hundreds of other samples, until it's their turn to be analyzed.

Algae samples that you've stored in the larger plastic bottles with desiccant (drying agent) are placed in a separate freezer.

Data sheets are removed from the sample bags at this time and hand-delivered to Mary Stonecipher, the supervising chemist, so that Secchi disk readings and other pertinent information can be logged into the computer.

### 3 Sample Preparation

When it's time for your samples to be analyzed, they are defrosted overnight, along with about 130 to 150 other sample bottles.

Once defrosted, a portion (50 ml) of your lake water is "poured out" of the bottles into large test tubes. The bottles are then stored in a cooler, until both phosphorus and nitrogen analyses are complete, just in case any of the samples produce unusual results and need to be redone. After the chemist is satisfied with the results, the remaining water is discarded.

*(continued on pages 4 & 5)*



UNIVERSITY OF  
FLORIDA

Institute of Food and Agricultural Sciences  
Department of Fisheries and Aquatic Sciences



# Happy Anniversary To a Precocious Ten-Year-Old



Florida LAKEWATCH was officially created by the Florida legislature in 1991, although we had been working with volunteers unofficially since 1986. I guess you could say this past year was our unofficial tenth anniversary. Do we have anything to celebrate? You bet!

Because most of you don't have the opportunity to see the overall picture, let me give you my perspective, and brag on the volunteers a bit along the way.

LAKEWATCH has become an exemplary program. We have trained and equipped volunteers on over 750 water bodies in more than 40 counties, making us one of the top three volunteer monitoring programs (out of over 500) in the country. In a short time we have developed active statewide partnerships with about 70 government agencies (including managers of six state parks and three national forests), a variety of business and professional groups, over a dozen schools, and more than 60 citizen organizations. Programs in many states, and even other countries (British Columbia, Jamaica, and New Zealand) are being modeled after LAKEWATCH.

Our volunteers show impressive dedication.

Thirty percent of the lakes monitored since LAKEWATCH began have more than five years of samples collected, and about 80% of lakes ever enrolled in the program are still active. A growing number of LAKEWATCHers have reached the "century mark," having sampled their lake over 100 times!

Our data have been tested by experts and have earned a reputation for being reliable and high-quality. As a result, they are widely used by professional water managers, planners, schools, researchers and citizens. The LAKEWATCH office responded to over 1000 requests for data and information last year. The Florida Department of Environmental Protection used LAKEWATCH data in its assessment of Florida's water quality, which was submitted to the U.S. Congress.

LAKEWATCH enhances education and research at the University of Florida; graduate students have access to a wealth of information and data for use in their research that enables them to deal with timely, relevant issues. University students have the opportunity to work alongside LAKEWATCH volunteers on special projects such as making bathymetric maps (countour maps of the lake bottom), and surveys of aquatic plant communities. By participating in "real world" field

work, students are provided with experience that will be invaluable in their future careers in aquatics. In this way, LAKEWATCH is playing a major role in in the recently-created Department of Fisheries and Aquatic Sciences.

In response to the needs of the public, we have undertaken several pilot projects including monitoring a variety of aquatic systems including coastal lakes, rivers, springs, and even golf course ponds.

These are noteworthy achievements for a ten-year-old!

There is no doubt that LAKEWATCH research is in demand, especially in a state with a mushrooming population and an acute need to manage waters in an informed, cost-effective, efficient manner.

The LAKEWATCH Program began as wishful thinking. The public, researchers, businesses, politicians, and managers had to work together to make it a reality. By continuing our united efforts, we can assure LAKEWATCH will continue into the future. Keep watching your lakes and being inspired by them — I am.

Happy anniversary! — Sandy Fisher

## New IFAS Program Helps Non-farm Suburban and Rural Residents Protect Their Drinking-Water Wells

Lake residents concerned about their well water now have access to information about how they can protect it from pollution. Better yet, it's free! Available through Florida Cooperative Extension Service county offices, the new Florida Home-A-Syst program is designed for non-farm rural and suburban residents who have private drinking water wells and/or septic systems.

The easy-to-use self-assessment program will help residents identify environmental risks, learn about better home and property management, and take preventative action.

At the heart of the program is a 190-page book that covers such topics as assessment of home site soil and geological conditions, wells, septic systems, liquid fuels, yard and garden care, trash, hazardous products, storm water management, lead, energy conservation and safety, and indoor air quality. Readers can quiz themselves, using the self-assessment test in the book, to determine whether their well ranks as a low, medium, or high risk system. Once the level of risk is determined, resources (phone numbers, videos, publications, etc.) are provided for folks who want more information.

"Florida Home-A-Syst is important because the state has over 1.5 million wells and almost one million septic systems," says Susan Williams, UF/IFAS Florida Home-A-Syst coordinator. "Individually, home products and activities may not pose much of a threat to ground water. Together, however, people may contribute significantly to ground water pollution.

"Casual disposal of household wastes like used motor oil, cleaning products and pesticides can pollute drinking-water supplies and nearby streams, lakes, and canals."

For more information or to receive a free copy of the book, contact your local county extension office (look under the county government listing in your phone directory).

*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  
Chemist  
Editor

Sandy Fisher  
Mary Stonecipher  
Amy Richard

# Results Complete for Highlands County Mercury Project

Last fall we reported that LAKEWATCH volunteers have been involved in a pilot project for mercury testing of fish in twelve Highlands County lakes—along with promises of an update on the project:

We are happy to announce that the analysis was completed earlier this year, by the Florida Game and Fresh Water Fish Commission (GFC). Shortly thereafter, Julie Terrell, LAKEWATCH regional coordinator for Highlands County, provided participating volunteers with a report about the study, along with a listing of mercury concentrations for fish caught in the twelve lakes. We've listed the lakes here (see end of article).

LAKEWATCH volunteer participation in this project is significant as it demonstrates the willingness of citizens to assist in the overwhelming burden scientists face in determining the toxicity of fish from thousands of Florida lakes. Although health advisories are available to the public concerning mercury levels in fish in the more heavily-used lakes, there are still many gaps to fill.

The good news is that efforts are being made to try and "fill in" the blanks. Florida's GFC Fisheries Research Lab and Department of Environmental Protection (DEP) are working cooperatively to develop a method of "predicting" mercury levels in fish by considering physical and chemical characteristics of the body of water they live in.

Research conducted on 53 lakes has shown that there does seem to be an inverse relationship between chlorophyll levels and alkalinity of lake water, and mercury levels in largemouth bass. (Fish in lakes with high chlorophyll levels tend to have lower mercury levels than fish in lakes with low chlorophyll levels.)

According to Ted Lange, with GFC's Fisheries Research Lab, "It looks as though relationships between physical and chemical lake characteristics and mercury in large mouth bass might be able to give us some predictive capability.

"Data collected by LAKEWATCH volunteers will be useful in the modeling (predicting) process, because now we have water quality data and mercury data to compare," explained Ted.

"It's expensive to do mercury analysis on fish, and much less expensive to gather information about a lake's physical characteristics (location, watershed size, lake type) and chemical characteristics (chlorophyll, alkalinity, organic carbon compounds, etc.). If we can make predictions based on the less expensive and time consuming methods, then we'll be ahead of the game."



Photo courtesy of Eagle Eye, Inc.

**Where does mercury come from? We'll take an in-depth look at mercury sources in Florida lakes in an upcoming issue....**

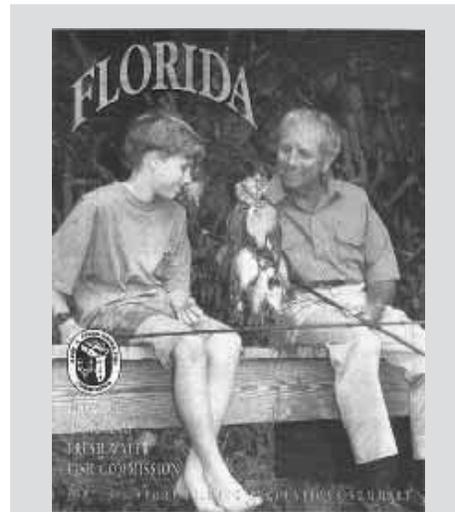


Photo by Phil Chapman. Courtesy of Florida Game and Fresh Water Fish Commission.

**GFC's 1997-98 Sport Fishing Regulations Summary booklet now includes mercury health advisories (issued by the Florida Department of Health\*) and can be found throughout the state at:**

- ◆ tackle stores,
- ◆ bait camps
- ◆ county clerk's office or
- ◆ any of the Florida Game and Fresh Water Fish Commission regional offices (for phone number/address of regional offices, contact GFC's state office in Tallahassee, at 850-488-4676).

\*Formerly known as Florida Health and Rehabilitative Services

The Florida Department of Health (formerly the Department of Health and Rehabilitative Services) categorizes fish toxicity into three consumptive use levels, depending on the average mercury concentrations of all the fish sampled in each lake. Listed below are the three consumptive use levels and definitions.

**No Advisory** is issued if the mercury concentration of fish sampled is below **0.5 ppm** (parts per million). When no advisory is issued, there is no limit set to the amount of fish that you should eat in a given amount of time from the lake sampled.

**Limited Consumption Advisory** is issued if the average mercury concentration is **0.5 ppm - 1.5 ppm**. The advisory suggests that "fish should not be eaten more than once a week by adults. If you are pregnant, a nursing mother, a woman who intends to have children, or a child under 15 years of age, you should not eat those fish more than once a month. (One portion equals 8 ounces or one-half pound of fish.)"

**No Consumption Advisory** is issued if the average mercury concentration is above **1.5 ppm**. "No consumption" means that no fish should be eaten from the lake sampled.

The following Highlands County lakes could potentially be categorized as "No Advisory" lakes.\*  
Lillian                      Olivia                      Rachard

The following Highlands County lakes could potentially be categorized as "Limited Consumption" Lakes.\*  
Adelaide                      Francis                      Henry  
August                      Grassy                      Huntley  
Chilton                      June                      Red Beach

\* Advisories have not been issued on these lakes by the Department of Health as yet—data from the project are currently under review and will be considered for inclusion in future health advisories.

For more information concerning mercury levels in Florida lakes, contact:

Mr. Ted Lange - GFC  
Fisheries Research Lab  
PO Box 1903  
Eustis, FL 32703  
(352) 357-6631  
or

Mr. Andrew Reich  
Florida Department of Health  
Bureau of Environmental Toxicology  
(850) 488-3385

# A Day in the Life of a Water Sample

Continued from page 1

## 4 Digestion

We're all familiar with the term "digestion" when it comes to food, but did you ever hear about water being *digested*?

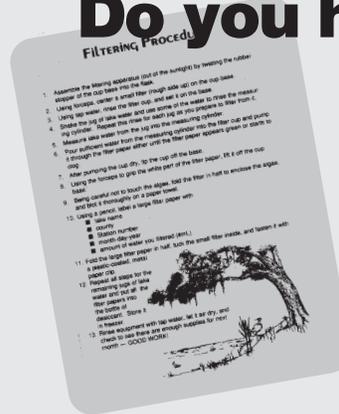
When it comes to analyzing lake water, *digestion* is one way to "free up" the phosphorus and nitrogen so that it can be measured—similar to the way in which stomach acids help to digest foods to "free up" nutrients for our bodies.

To digest the water samples, a solution of potassium persulfate is added to each prepared test tube. After the potassium persulfate has been added, the samples are heated in an autoclave (a glorified pressure cooker) under a pressure of 15 psi (pounds per square inch) for 30 minutes. Now the samples are ready for analysis:



Left: Kelly Schulz adds a solution of potassium persulfate to test tubes containing lake sample water. The potassium persulfate helps to digest or "free up" nutrients (phosphorus and nitrogen) in the water so they can be measured.

## Do you have you



It's blue, it's wa  
little details involv  
it our "cheat sheet  
offers step-by-step  
bottles, as well as  
We encourage  
time they sample, e  
sampling dates, an  
If you don't ha  
toll-free citizen hot  
Note: Please leave  
if we're not availab  
Thanks again fo

## 5 Are we done yet?

### Phosphorus Analysis

Samples being analyzed for phosphorus receive a color reagent, a mix of chemicals that will react with phosphorus in the water and turn blue.

Samples containing small amounts of phosphorus develop very little color, while samples containing large amounts may turn very blue indeed.

The color is allowed to develop for 15 minutes and the samples are spun in a **centrifuge**, a device that spins the tubes at high speed, forcing sediments to the bottom.

Then the amount of color in each sample is measured on a **spectrophotometer**, an instrument that measures the absorbance of light at different wavelengths. The values are then calculated by comparing them to **standards** — solutions containing known amounts of phosphorus.

## 6 "Play it again, Sam"

### Nitrogen Analysis

Samples being analyzed for nitrogen are done separately and handled a bit differently. Instead of receiving color reagent, they are made acidic by the addition of a small amount of concentrated sulfuric acid. The sample is then scanned over a range of ultraviolet wavelengths, and a peak, similar to absorbance, is identified. The amount of nitrogen in the samples is, like phosphorus, calculated by comparing the samples to nitrogen **standards**.



Above: After the water samples are 'digested,' (see step 4) a color reagent is added that will react with the phosphorus in the water, turning the water blue. The blue color is allowed to develop fully and is then "read" in a spectrophotometer. (See Step 5 for more indepth information).

### Chlorophyll Analysis

Chlorophyll samples are analyzed somewhat differently, and independently, of the water samples. When the algae samples arrive at the lab, they are taken out of their bottles and sorted.

The replicate samples for each lake are paper-clipped together and put into desiccant-filled bags that are labeled by county. These are kept frozen until their scheduled analysis date.

When it's time to analyze chlorophyll, samples are removed from bags, and the small glass fiber filters containing the algae are rolled up and inserted into small plastic test tubes. (The labeled wrappers are saved and used to prepare a working sample analysis list, a record of the volume of water filtered to prepare the samples — extremely important information).

Eight milliliters (ml) of 90% ethanol is added to each tube and the tubes are capped and heated in a water bath for five minutes at 172 ° F, the boiling point for ethanol. The rack of tubes is then wrapped tightly in a black plastic bag to protect the samples from light and is



Left: Kelly Schulz places test tubes containing phosphorus samples into the centrifuge, a device that will spin the test tubes at high speeds, forcing sediments to the bottom. Once the samples have been 'centrifuged,' they are ready to be analyzed for phosphorus values on the spectrophotometer.

allowed to stand for 24 hours. During this time, the chlorophyll pigments are extracted from the algae, and into the ethanol.

The next day, the chlorophyll tubes are centrifuged and the ethanol extract is read on the **spectrophotometer**. Similar to the phosphorus "readings," samples containing more chlorophyll are more intensely green. The chlorophyll concentrations are then calculated using a formula that includes the absorbances given by the spectrophotometer, the volume of ethanol used, and the volume of water you filtered for the sample.

Once all four parameters (nitrogen, phosphorus, chlorophyll and Secchi depth) have been measured and documented it's time to do it all over again.

Next!

Left: Onc  
are obtain  
along with  
in the wa  
the main  
Dan Willi  
regional c  
samples fo

# ur cheat sheet?

ter proof, and it's a great way to remember all the  
ved in water monitoring for LAKEWATCH. We call  
et." This little blue plastic card (5 1/2" X 8 1/2")  
instructions on how to collect water in the nutrient  
filtering procedures.

our volunteers to use their "cheat sheet" every  
even our veteran samplers as it is a month between  
and easy to forget procedural details without it.

ve one of these handy little cards, please call our  
line (1-800-525-3928) and we'll send one right out.

your name and address on the answering machine  
ole.

or your hard work and dedication!

ce nitrogen, phosphorus and chlorophyll levels  
ed for your lake sample, the results are entered,  
h Secchi depth measurements, into the computer  
er chemistry lab. The data is later transferred to  
LAKEWATCH data bank for future reference.  
s (shown here) is one of three LAKEWATCH  
coordinators responsible for picking up water  
from collection centers around the state.

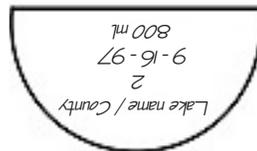
## Pop Quiz:

Here's a pop quiz for all you veteran LAKEWATCH samplers.(You may use your cheat sheet).

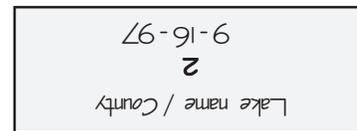
- To write on the sample bottle tape, use:
  - black pen
  - blue pen
  - pencil
  - waterproof marker
  - any of these
- To label your sample bottle, write:
  - your name, date, time
  - your lake's name, station number, time
  - your lake's name, county, station number, date
  - your lake's name, your name, date, time
  - none of the above
- To write on the algae filter label, use:
  - black pen
  - blue pen
  - pencil
  - waterproof marker
  - any of these
- To label your algae filter wrapper, write:
  - your name, date, time
  - your lake's name, station number, time
  - your lake's name, county, date, station number
  - your lake's name, your name, date, time
  - none of the above

### Answers

**4. (e) none of the above.** Choice "C" would have been correct had it included volume of water filtered. See correct example below.



**3. (c) Pencil.** Ink can bleed into the algae sample and ruin it.



**2. (c) Your lake's name, county, station number, date.**

**1. (d) waterproof marker**

## Do you know your LAKEWATCH regional coordinator?

LAKEWATCH recently assigned regional coordinators to three multi-county regions throughout the state in an effort to provide consistent individual attention for our volunteers. We thought you'd like to know who your regional coordinator is so we've listed their names below, along with counties they are responsible for. You'll have an opportunity to meet these individuals in the coming year, if you haven't already, at your annual regional meeting. They'll also be contacting you (via telephone) in the future as we continue our efforts to update the LAKEWATCH volunteer mail list.

Of course, any one of the LAKEWATCH staff are ready and willing to answer questions concerning your data, or lake ecology in general. Please don't hesitate to call the toll-free citizen hotline (1-800-525-3928) with questions or comments.



**Julie Terrell**

Bay	Gulf	Liberty
Calhoun	Hardee	Manatee
Charlotte	Hendry	Okaloosa
Collier	Highlands	Polk
DeSoto	Holmes	Sarasota
Escambia	Jackson	Santa Rosa
Franklin	Jefferson	Wakulla
Gadsden	Lee	Walton
Glades	Leon	Washington



**David Watson**

Alachua	Hamilton	Pinellas
Baker	Hernando	Putnam
Bradford	Hillsborough	Seminole
Citrus	Lafayette	St. Johns
Clay	Lake	Sumter
Columbia	Levy	Suwannee
Dixie	Madison	Taylor
Duval	Marion	Union
Flagler	Nassau	Volusia
Gilchrist	Pasco	



**Dan Willis**

Brevard	Martin	Osceola
Broward	Monroe	Palm Beach
Dade	Okeechobee	St. Lucie
Indian River	Orange	

**LAB NOTES:** Having difficulty writing on the sample bottle tape? Even though we use the same kind of labeling tape on every bottle, the quality of the tape does vary and can be difficult to write on. See 'Pop Quiz' above for the solution.

# LAKEWATCH Goes Coastal

With ten years of successful lake monitoring under its belt, LAKEWATCH is finding itself elbow deep in some rather saline waters these days. And the trend is perfectly natural when you consider that Florida's freshwater world (12,000 miles of rivers and 4700 square miles of lakes) is also accompanied by more than 9800 square miles of saltwater habitat.

It was only a matter of time before LAKEWATCH encountered citizens wanting to monitor coastal lakes lakes occasionally considered saline due to saltwater intrusion from coastal tidal flows or seepage from shallow water tables.

How do these infrequent saltwater intrusions affect freshwater lakes? What happens to fish and wildlife inhabiting these areas? How do rivers and lakes affect coastal waters?

No one knows yet. However, collecting baseline data on these systems will bring us closer to understanding "normal" fluctuations in nutrients and stormwater impacts on coastal waters (both fresh and salt).

With this in mind, Florida LAKEWATCH has broadened its scope to several coastal monitoring projects including about a dozen semi-saline lakes around the state, the Crystal River-Kings Bay project in Citrus County, LAKE/BAYWATCH in the Florida panhandle, Project COAST in Florida's Big Bend region, and the Sanibel-Captiva Conservation Foundation's lake and river monitoring project on Sanibel Island.

The Crystal River-Kings Bay project was initiated in 1992, in a cooperative effort with the Coastal River Basin Board of the Southwest Florida Water Management District, to examine the effects of the removal of wastewater treatment effluent (nutrients) from the Crystal River - Kings Bay system. The project provided an excellent example of how water monitoring data can provide valuable, and often surprising, information to water managers.

Although certain areas of the bay were subject to decreased nutrient concentrations, the desired reduction in aquatic plants in the entire bay didn't meet with the public's expectations. In fact, the final report to the district resulted in more questions and included recommendations for further studies, which are currently underway; nearly 30 sites are now being monitored in an effort to determine sources contributing to declining water clarity in the bay.

Researchers are also monitoring aquatic plant biomass in some areas to learn more about what factors influence aquatic plant growth in the Kings Bay system.

LAKE/BAYWATCH was initiated in 1990, by the St. Andrew Bay Resource Management Association, with a stated goal to "maintain and if possible, improve the quality of Bay County's surface waters,"\* as a



Pam Murfey, Dale Shingler and John Toolun team-up on some water filtering for LAKEWATCH. All three are park rangers at Grayton State Park and facilitate volunteer monitoring of lakes in the park, in south Walton county. Photo by Julie Terrell.

result of concerns about point and non-point source pollution to water systems in the area.

Lake Powell, one of the unique water systems involved in the project, is a textbook example of a lake periodically inundated with saltwater. With exceptional water quality (designated as an Outstanding Florida Water in 1991), it's also "the largest lake on the Florida Gulf coast with an intermittent connection to the sea."\*

However, the project doesn't stop at monitoring inland semi-saline lakes. It encompasses stations in all four area bays (North Bay, West Bay, St. Andrew Bay, and East Bay), one Gulf location, every bayou, one lagoon and two lakes (Lake Powell and Deer Point Lake)

According to project coordinator, Doug Peck, "in addition to doing the regular LAKEWATCH water sampling and filtering, we've also decided to collect supplemental data on pH, dissolved oxygen, temperature, turbidity, water depth, and salinity, while making note of tide conditions.

"It takes 65 people, organized into 16 different crews, to do the work; all of them are volunteers."

\*Report No. 5 1995-1996, published this year

Project COAST was initiated as a result of interest in collecting water quality data for a relatively undeveloped section of the Florida coast. Overshadowed by the more heavily impacted, and researched, aquatic systems in south Florida (Florida Bay, for instance) little is known about water quality along the state's north-central Gulf coast, making it a perfect candidate for a water monitoring project.

The project is sponsored by the Suwannee River Water Management District as a one-year water quality monitoring program, and is facilitated by the University of Florida's Department of Fisheries and Aquatic Sciences.

Dr. Tom Frazer is coordinator for the project and has his hands full as he is now in the midst of recruiting volunteers for monitoring sections of coastline from Withlacoochee Bay to Steinhatchee.

Volunteers are required to have GPS (Global Positioning System) capabilities on their boat and are asked to monitor temperature, salinity, water clarity (Secchi depth), chlorophyll (algae) concentrations, as well as nitrogen and phosphorus.

Further south, there are coastal monitoring efforts underway on Sanibel Island—one of Southwest Florida's subtropical treasures.

The island's unique topography, including a series of upland ridges and wetland swales, has resulted in a unique freshwater system.

The ridges and swales are, in fact, relic beach dunes that are now located toward the interior of the island. After years of rainfall runoff, the dunes have helped to create a river and a series of oxbow ponds and wetlands that are at times susceptible to saltwater intrusion.

Lake monitoring efforts have been carried out on these unique systems by LAKEWATCH volunteers since 1991. However, the Sanibel-Captiva Island Conservation Foundation (SCCF) has recently adopted the lakes and river into their program and will be monitoring them in a cooperative management effort with the City of Sanibel.

Currently, the SCCF is monitoring five stations on the Sanibel River and actively seeking volunteers to assist in monitoring the lakes (Dunes, East Rocks a.k.a. Sea Oats, Gulf Pines, Gulf Shores, Gulf Shores West, Gumbo Limbo, Little Murex, Murex, Roseate, St. Kilda, West Rocks and Venus Lake).

David Ceilley, Restoration Ecologist for the SCCF, had some ideas on how volunteers would be the most help. "What we really need are volunteers that would be willing to provide us with access to these lakes by having a boat launched and ready to go when we arrive to do the monitoring. We've found that we're spending a great deal of time just trying to get on the lakes."

He also had good things to say about the innovative partnerships they've enjoyed with local, federal and state agencies. "The City of Sanibel has been very devoted to working with the SCCF, as well as U.S. Fish and Wildlife Service. It's been extremely helpful to be able to share resources with them."

FLW

## Is There A New Collection Center Near You?

In our continuing quest to make things more convenient for our volunteers, we've established several more collection centers. Please check below to see if there is a new collection center in your area. If so, please be sure to extend our heartfelt thanks to these kind folks for their willingness to dedicate precious freezer space to LAKEWATCH.

### Walton County (Destin, FL)

Half-Hitch Tackle Shop  
621 Hwy 98E  
Destin, FL 32541  
Contact: Cheryl Wyren 850/837-3121

### Washington County (Chipley, FL)

Wendy's Restaurant  
1715 Main Street  
Chipley, FL 32428  
Contact: Chris 850/638-5300

### Palm Beach County

SFWMD (South Florida Water Management District) Water Quality Laboratory  
1480 Skees Road  
West Palm Beach, FL 33411  
Contact: Bruce Sharfstein 561/681-2537

### Leon County

MaClay State Gardens - New delivery location:  
Drop samples at ranger station at park entrance-  
3540 Thomasville Road  
Tallahassee, FL 32308  
Contact: Paul Riggs 850/487-4115

## Bacteria or Fossil Fuel?

Every so often we get a call from a concerned lake resident reporting an oily substance floating on the surface of their lake. And rightfully so; it's a startling sight to see an oily slick on your lake.

However, this oily substance is not always petroleum-based. More often than not, it's a naturally occurring, non-wastewater related bacteria. Go figure.

So how do you tell? The most accurate way is to collect a sample and send it to the LAKEWATCH office for identification. However, there is a little test you can do to provide a clue as to whether it's oil or bacteria:

If you can get near the "slick," poke it with a finger or stick. If the material breaks apart into clumps, there's a good chance it's bacteria.

If the slick repels away from the stick (or finger) and then shrinks right back together, it could be a petroleum-based product.

To mail, collect a sample in a small jar, preferably plastic, and pack tightly in a box. Mail the sample to:

### LAKEWATCH

7922 NW 71st Street  
Gainesville, FL 32653  
or call our citizen hotline: 1-800-525-3928

# VOLUNTEER BULLETIN BOARD

## Turn In All 1997 Samples ASAP

Please deliver your samples to the collection center as soon as possible in October, November, and December (instead of stockpiling them in your freezer at home). This will help our regional coordinators maintain a steady flow of sample deliveries to the lab, so that we can fulfill our 1997 contractual commitments to have all samples analyzed by the end of the year. Thank you!

## October 20 - 22

### Atmospheric Deposition into South Florida: Measuring Net Atmospheric Inputs of Nutrients

Hosted by the SFWMD (South Florida Water Management District), the purpose of the conference is to provide an open forum for the discussion of the role of the atmosphere in transporting nutrients, especially phosphorus (P), into South Florida. The conference will provide:

- > Current information on atmospheric monitoring and research programs in South Florida;
- > Data summaries on atmospheric loading rates for phosphorus and nitrogen;
- > A forum to communicate concepts and deliberate issues on atmospheric P inputs; and
- > A prioritized set of research and development needs to improve atmospheric measurements and data analysis for agencies and research groups.

All interested parties are encouraged to participate. (The meeting is open to the public). For more information, contact:

Garth Redfield at 561-687-6611 or email: [garth.redfield@sfwmd.gov](mailto:garth.redfield@sfwmd.gov)  
Nancy Urban at 561-687-6603 or email: [nancy.urban@sfwmd.gov](mailto:nancy.urban@sfwmd.gov)

## November 8 - 9

### Lake Hickory Nut 3rd Annual Country Fair Yard and Craft Sale

Address: 9017 Lake Hickory Nut Drive Winter Garden, FL  
Refreshment sale proceeds to benefit LAKEWATCH, so come on out for a day of fun and help support LAKEWATCH too! Time: 9 a.m. - 4 p.m.

## It's here!

The good news?

The Florida LAKEWATCH 1986-1996 Data book is here!

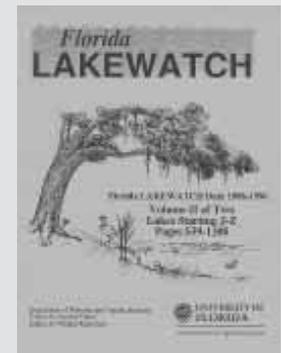
In celebration of ten years of water monitoring, this year's book, a two-volume set, includes data from every lake that has ever been monitored by LAKEWATCH.

Along with the 1996 averages and one long-term lake average for each parameter measured (nitrogen, phosphorus, chlorophyll, and Secchi depth), the book also includes a plethora of useful information including: latitude and longitude of each lake, acreage, and lake region information (brief descriptions of each lake's geology and hydrology.)

Plant survey information, bathymetric maps, and supplemental water chemistry data are included for some of the lakes, but not all.

The bad news? There were only 100 of them printed, due to limited funding. But don't despair. These books are available for your perusal at most of your county extension offices, all water management district offices, and all nine state university libraries.

And don't forget, if there is a lake(s) that you specifically want to look up in the book, you can always call our toll-free citizen hotline (1-800-525-3928) and request photocopies. We can fax or mail the information to you.





*Different sampling vessels for different folks. We thought we'd heard it all, until Bill Goddard informed us that he collects samples for LAKEWATCH from his Lake Amphibian airplane. Bill samples Lake Reedy in Frostproof, Florida and has been doing so from his airplane for a year now.*

## Innovative Partnerships

**Highlands county** recently printed and distributed a Guide to Area Lakes, in an effort to educate as many people as possible about area lakes. Nineteen thousand copies were printed and distributed to the community (as an insert in the local paper) and also to local boat dealerships. The project was sponsored by the Peace River Basin Board of the Southwest Florida Water Management District (SFWMD) and is an excellent example of what lake residents and communities can do to promote lakes in their area. **For more information, contact Mary Carter at: 941-465-6411**

**Lake County** recently initiated its own Keep Lake County Beautiful program, as a "broad-based beautification plan designed to deal with the root causes of littering and to change negative habit and attitudes that result in littering."\*

With this in mind, an Adopt-A-Shore effort has also been put in place to help with litter and pollution in county lakes—just one facet of the county's effort to "improve the quality of life... by fostering protection of the environment."\*

The new program is seeking volunteers willing to adopt a piece of shoreline. Volunteers are assigned a certain segment of lakefront property and are expected to keep it clean, collecting trash about four times a year.

**For more information, contact:**  
**Joe Norman - Keep Lake County Beautiful**  
 PO Box 187  
 Tavares, FL 32778-0187  
 or call (352) 589-5522.

\* Keep Lake County Beautiful brochure

**Golf courses are 'joining the club'** and initiating unprecedented fairway lake and pond monitoring projects in an effort to collect base-line data for their waterbodies:

**The City of Gainesville's Ironwood Golf Course**, under the management of Golf Pro Bill Iwinski, recently began monitoring its eight ponds in an effort to collect a year's worth of base-line data, as a first step toward creating and implementing a golf course water quality management plan.

Jan Weinbrecht, with UF's Environmental Horticulture Department, has volunteered his time to share monitoring duties with Steve Antal, golf course superintendent for ISS Golf Services.

**The Burnt Store Isles Golf & Country Club** in Charlotte county is partnering with members of the Burnt Store Isle Boating Club to monitor lakes as part of a study concerning the effects of golf course maintenance practices on local watersheds.

Volunteer Guy Williams is shepherding the project and coordinates other volunteers who monitor lakes on both the "front-nine" and "back-nine" of the course.

Baseline data have been established over the past year. In the next year, the golf course management has agreed to change maintenance practices, in accordance with UF horticulturists' recommendations, for one set of lakes so that they can be compared with the second set of lakes located in a separate watershed. An unprecedented study, this work may help answer many questions about the effects of golf course irrigation and fertilization practices on water quality.

## Dear Friend of Your Lake,

Do you have a concern about your lake and an interest in its future? You deserve help in your efforts to learn about and manage your lake's precious ecosystem. 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. We need you!

In return for your participation in the Florida LAKEWATCH program, you will receive:

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

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

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

email:

lakewat@nervm.nerdc.ufl.edu



*Volunteer Max Kelley is so proud of the program that he's put our name on his boat. Max has been monitoring Lake Hernando, in Citrus county for about two years now. Glad to have you aboard, Max!*