Florida LAKEWATCH

Dedicated to Sharing Information About Water Management and the Florida LAKEWATCH Program Volume 53 (2011)



Highlands County LAKEWATCH volunteers recognized for 15+ years of volunteer service with their "Outstanding Volunteer" paddles.

The Future of LAKEWATCH

LAKEWATCHERS -

You are all now aware that many individuals, families, charities, businesses, local governments, state governments, and national governments are experiencing financial distress. When such a situation occurs, budgets must be trimmed and priorities established. History has shown that water quality monitoring programs are typically not identified as a governmental priority and the programs are either eliminated or their funding is substantially reduced. Such discussions are now taking place in Florida. In some cases, funding cuts have been or will be implemented shortly.





A LAKEWATCH volunteer in Broward County measures Secchi disk visibility.

During the last two years, Florida LAKEWATCH sustained a 48% reduction in funding causing changes in the water sampling protocol, the water types being sampled, and infrastructure changes to help continue serving the volunteers. In 2011, LAKEWATCH is again experiencing funding reductions, but the Florida Legislature maintained the program's current base funding of \$275,000.

Why did the Florida Legislature not cut all funding to LAKEWATCH? The cut did not occur, in part, because of the great work LAKEWATCH volunteers have done since 1986. It was the tremendous bank of limnological information assembled on the lakes and coastal waters over the years that flaws in helped identify the USEPA's numeric nutrient criteria. The State of Florida and USEPA are now working to establish water quality criteria that will not only protect the waters of Florida, but prevent the needless expenditure of hundreds of millions of taxpayer dollars to fix non-problems. Volunteers, you have done your job and provided a great service to the State of Florida!

Moving forward, it is now time to consider a new way of doing the water quality monitoring business for Florida LAKEWATCH and your help is once again needed –

First, volunteers who live on

freshwater lakes, springs and rivers are requested to resume their regular monthly sampling. We had to go to sampling every other month last year due to budget shortfalls, but LAKEWATCH's water quality laboratory is now in a position to handle more freshwater samples. Volunteers along the coast are not being asked to resume monthly sampling yet, because of the extra time and personnel required to analyze marine waters. Presently, the LAKEWATCH staff and select volunteers are initiating a joint water quality sampling project with Florida Department Environmental Protection of (FDEP) to test LAKEWATCH's contention that information collected by volunteers is as good as that collected by professionals. Florida LAKEWATCH has alreadv tested this using LAKEWATCH staff and found that volunteer data are indeed comparable to that collected by professionals. However, FDEP requires additional confirmation using their staff. When the compatibility of volunteer data and the FDEP professional data are confirmed, FDEP staff will feel better about supporting LAKEWATCH funding requests.



Second - LAKEWATCH is initiating a program to provide inservice water quality training to staff of the UF/IFAS Cooperative Extension Service. Many of our successfully volunteers have worked with Extension agents and found they received important information on many subjects. Extension has a long history of helping the agricultural community solve problems and is now moving to work with LAKEWATCH volunteers to help solve water problems, and help them continue water quality monitoring that is essential if workable cost-effective and solutions are to be developed.

Every Florida County has a Cooperative Extension office that works directly with local government on a variety of issues. Some receive matching funding

from the counties. Please pay attention to the upcoming actions of your county commissions. If decisions are to be made eliminating and/or reducing water quality monitoring, advance the idea that for much less money the monitoring could be accomplished by the Cooperative Extension Service and Florida LAKEWATCH volunteers. This will save the County money while still providing the information needed to meet water quality standards and that can be used correcting fixable problems.

Also, do not focus just on your county. Ask your commissioners to request the assistance of the water management districts. By pooling resources of the existing local and state agencies, water quality monitoring programs do not need to be eliminated. Our waters can be monitored, wisely managed AND more can be done for less taxpayer dollars!

Tough economic times often bring doom and gloom, but there are also golden opportunities. Volunteers, you of all people, understand the value of water quality monitoring for your waters and the value of the LAKEWATCH program. Let's provide the State of Florida great service another by establishing a new business plan for water quality monitoring by expanding the volunteer network for our freshwater and coastal water resources, pooling financial resources so more can be done for less, and leveraging the available dollars with the Cooperative Extension Service to support teaching, research, and education.



Florida LAKEWATCH Assistant Director Mark Hoyer (seated in the front of the room) leads an in-service training of UF/IFAS Extension Agents in the Florida Panhandle.

Choctawhatchee Basin Alliance of Northwest Florida State College

History

In early 1996, concerned citizens, elected officials, representatives from Florida Department of Environmental Protection (FDEP), Eglin Air Force Base, other state, federal and local government environmental agencies, organizations, and members of the business community gathered at Northwest Florida State College Walton (formally Okaloosa Community College) in the panhandle of Florida to discuss environmental quality and economic development around the Choctawhatchee Bay. During the local panel discussions, individuals expressed concern over the perceived decline of water quality of Choctawhatchee Bay while addressing the need to promote development. sustainable The sharing of concerns from participants along with discussion on philosophies of ecosystem management sparked to life the partnership for sustainable development, called what is now know as the Choctawhatchee Basin Alliance. On June 25, 1996, the organization agreed to be affiliated under Northwest Florida State College.

Mission

The Choctawhatchee Basin Alliance of Northwest Florida State College (CBA) is an organization committed to sustaining and providing optimum utilization of the Choctawhatchee Basin watershed. CBA provides opportunities for citizens, educators, and technical experts to promote the health of the watershed.

Vision

CBA recognizes that the economy of our region is strongly dependent on the utilization of Choctawhatchee Bay as well as many other important



Pictured above is one of a dozen research projects that CBA has assisted with. Florida State University researchers, under the guidance of Dr. Joseph Donoghue, modify CBA boats to facilitate needed research equipment to sample the sediment on the Coastal Dune Lakes in Walton County.

activities in the basin. CBA is primarily a conservation organization, but recognizes the importance of development for the economic viability of the area. Consequently, CBA is dedicated to promoting "optimum utilization" of water resources and to preserving the environmental quality, the quality of public life, and ultimately sustaining the future utilization of those resources.

Public support is the cornerstone of CBA, and will enable CBA to be a permanent organization bridging promoting communication and change in public policies. CBA desires to utilize public support and citizen involvement to initiate technical projects and coordinate efforts between citizens, business environmental owners. organizations, and government agencies to solve specific problems. Community support will also aid CBA in acquiring funding that will make a positive change in our environment for the long term.

Public awareness, public involvement, and collaboration are

three key methodologies employed by CBA. CBA continues to be a collaboration of citizen, government, and scientific interests. This Alliance allows cooperation among technical and governmental agencies to promote public values, solve specific problems and coordinate technical projects for the health of watershed resources.

Programs

To fulfill its mission and vision, CBA coordinates four program areas throughout the Choctawhatchee watershed: Restoration, Monitoring, Research, and Education.

Restoration Program

CBA has coordinated multiple stormwater enhancements projects,



created hundreds of feet of "Living Shoreline", and removed acres of exotic/invasive plants throughout Santa Rosa Beach, Destin, Niceville, and Fort Walton Beach—all cities located on Choctawhatchee Bay.

Besides the ecological benefits of these restoration projects, CBA restoration projects also provide significant economic benefit to the local economy—as these projects have provided over a million dollars to local contractors, engineers, and construction companies.

Monitoring Program

CBA coordinates monthly water quality monitoring at over 100 sampling stations located within the Choctawhatchee Bay, the coastal dune lakes, the Choctawhatchee River and offshore in the Gulf of Mexico.

CBA's monthly water quality monitoring program is conducted almost wholly by a large group of dedicated volunteers. They collect real-time data using CBA provided hydrolabs and they collect water samples that are analyzed by the Florida LAKEWATCH program for eutrophication parameters.

Volunteers and students from local universities and colleges work with CBA staff to also conduct annual sea grass surveys and periodic evaluation of created oyster reefs.

Research Program

works CBA with various universities and water resource managers to aid and assist with research project that further the understanding of aquatic resources in the Choctawhatchee watershed. CBA has assisted with almost a dozen research projects ranging from Gulf Sturgeon monitoring and habitat utilization (Delaware State University) to a hydrology study on the Coastal Dune Lakes (University of Florida).



CBA water quality monitoring program is conducted almost wholly by a large group of dedicated volunteers. Mr. Chuck Faulkner, pictured above, often helps sample stations located in Santa Rosa Sound and Fort Walton Beach in Okaloosa County. The inset is of Andrew Fliehman, a CBA/AmeriCorps volunteer, collecting water from Choctawhatchee Bay.

Education Program

CBA currently works within local schools assisting teachers with environmental education curriculum and coordinating field trips. CBA's school curriculum involves the following topics: Grasses-In-Classes, Dune-In-Schools, Water Conservation, Water Supply, Water Quality, Composting, Exotic / Invasive Plants, and Rain Gardens.

CBA also hosts community-based educational workshops, attends various community events, and works with local municipalities to encourages scientifically based management decisions, promote stewardship, and helps to ensure overall economic viability for the Choctawhatchee watershed.

For more information about CBA or its programs, please visit <u>www.basinalliance.org</u> or contact CBA by email <u>CBA@nwfsc.edu</u>.





Choctawhatchee Basin Alliance

CBA's Education Program often brings "hands-on" environmental science curriculum to local Okaloosa and Walton County schools. Pictured above is Alison McDowell, one of CBA's Coordinators, with touch tanks. Students get an opportunity to see, touch and learn about local organisms living in the bay.

Amoebas in Lakes

Every summer, questions surface about an aquatic amoeba (*Naegleria fowleri*) with a bad reputation. Over the past 30 years, there have been over 34 deaths recorded in the United States due to exposure to this nasty little organism. More than fifteen of the deaths occurred in Florida.

Fortunately, the chances of coming in contact with *Naegleria*, or contracting the resulting illness (Primary Amoebic Meningoencephalitis— PAM, for short) are quite slim.

In Florida, health officials estimate that there is only one case for every 2.5 million hours that people spend in freshwater. Drowning and boating accidents pose a much greater threat to our state's water enthusiasts. With that said, there are a few precautions swimmers can take to decrease their chances of exposure even more.

The first thing you should know is that, with the exception of Antarctica, this amoeba is believed to exist in virtually every lake and river around the world. It is also found in spas, hot tubs, thermally enriched waters and poorly chlorinated swimming pools. So, if you're thinking of simply avoiding these aquatic environments, you might get a little lonely.

So, How Does One Avoid the Amoeba?

The best way to prevent exposure to *Naegleria* is to avoid stirring up bottom sediments, as this is where the amoeba lives and feeds on bottom sediments composed of fallen leaves and dead plants. Once sediments are mixed into the water column, the amoeba



could be forced up the nose of a swimmer who jumps or falls into the water. This increases the chance for it to enter into an ear or nasal passage where it can follow the olfactory nerve and gain entry into the brain, where it has been known to cause problems.

It is important to note that swimmers who have contracted PAM usually got it after rooting around the lake bottom, in heavy silt where the amoeba lives. Therefore, keeping one's face away from the bottom of a lake, river, canal, etc. and keeping swimmers from jumping off a dock into shallow water-or any other scenario that would result in the disruption of bottom sediments-will significantly reduce the risk of exposure to Naegleria. Young children are at the highest risk of exposure as they tend to engage in such activities.

Everyone can be further protected by wearing ear plugs and a nose clip (or a dive mask that covers the nose) when swimming. Remember, exposure to bottom sediments is the single MOST important factor that increases chances for infection. During most of the year, concentrations of *Naegleria* are rarely high enough to cause public health problems. However, as water temperatures rise during the summer (82-86 degrees Farenheit), it provides a more accommodating environment for the amoeba to feed and multiply. So, if possible, avoid swimming in warm shallow waters during this time.

Diagnosis

Early diagnosis is the best bet for survival. In the two known cases where patients survived infection from Naegleria, the family doctor recognized the symptoms immediately and was quick to react with appropriate antibiotics. Persons who complain of severe headaches, rigidity of the neck, impaired sense of smell and taste, nausea, vomiting and/or a high fever, and who have been swimming in a lake should be taken to a doctor. If the

should be taken to a doctor. If the treatment is going to be effective, it needs to be administered quickly.

Note: You cannot get PAM by eating fish from a lake.

Volunteer Bulletin Board

New Collection Centers

Columbia County Columbia County IFAS Extension 164 SW Mary Ethel Lane Lake City, FL 32025 Contact: Derek Barber 386-752-5384

Duval County Duval County IFAS Extension 1010 McDuff Ave. Jacksonville, FL 32254 Contact: Brad Burbaugh 904-387-8550

Washington County (New Contact Information) Washington County IFAS Extension 1424 Jackson Ave (Hwy 90) Suite A Chipley, FL 32428-1615 Contact: Mathew Orwat 850-638-6265

Monthly Sampling Is Back!

LAKEWATCHer's, we are requesting that all samplers who sample fresh water lakes, springs, rivers, etc. begin to sample your water body on a monthly basis again. Because LAKEWATCH's water lab in now in position to handle more freshwater samples we are able to process freshwater samples on a monthly basis once again. Sorry all of you salt-water LAKEWATCHer's, due to the extra time and personnel involved with salt-water analysis, we are not able to resume monthly sampling for you at this time so you should continue to sample every other month.

Keep those samples flowing!

Do you have several months worth of samples taking up valuable freezer space at your house? Now that we are resuming monthly sampling for all of our freshwater sites, why not take the opportunity to deliver all frozen water and chlorophyll samples to your collection center as soon as possible. This will help keep our data as up to date as possible.

We'd also like to take this opportunity to thank you for your hard work and dedication!

Sincerely,

The Florida LAKEWATCH Crew.

New Invasive Plant Species Invades Florida

By Florida Wildlife Conservation Commission



Red Root floater

(Phyllanthus fluitans)

Phyllanthus fluitans is a freshwater species native to South America and is the sole free-floating aquatic species of the large genus *Phyllanthus*. Common names of *P. fluitans* include red root floater and floating spurge. In 2010, red root floater was found growing in a canal and tributaries in, and near, the Peace River, Desoto County, Florida.

Because red root floater is a popular aquarium plant, it may have been introduced via the aquarium-plant trade. Red root floater can produce a closed canopy over water; and in backwater areas, small isolated populations can be difficult to find. Scientists fear if this species expands its range, it may become as problematical in Florida as have the South American water lettuce and water hyacinth, also canopy-producers.



Red root floater mat



Close up of red root floater



Red root floater growth form – shoots and flowers

Guide to identification:

Foliage leaves – These are distichously arranged, range from 9 to 17 mm long and are separated by internodes 5 to 20 mm long. Each leaf exhibits a lamina, a petiole less than 1 mm long, and two brown-transparent stipules. The lamina (the distal expanded portion of the leaf) is more or less orbicular (circular), entire and unlobed marginally, cordate basally, and with a shallow notch distally. It exhibits two deep pockets – one on each side of the midrib. The leaves exhibit a light bluegreen color.

Shoots and stems – Shoots of *P. fluitans* either float on the water surface or, where plants bunch together, they may also extend a short distance into the air. The stems are brittle, are approximately 1 to 1.5 mm in diameter, and range up to 130 mm long.

Cymules and flowers – Most cymules are three-flowered, but two or four flowers may occur. Each cymule exhibits at least one staminate flower and one pistillate flower. Flowers are short-pedicellate, radially symmetrical, and normally exhibit three sepals and three petals. Because sepals and petals are comparable in color, size and shape, they are called tepals. The tepals are white or greenish-white and are not fused together. The flowers vary from 2 to 3.5 mm in diameter.

Fruits – The fruit, a capsule, is subtended by persistent tepals. It is depressed-globose and 3 mm wide. The capsule is trilocular and six-seeded, with two seeds filling each locule. The seeds, which outwardly resemble orange segments, exhibit numerous minute, dark-brown, superficial processes over a light brown background.



Florida Fish and Wildlife Conservation Commission

Division of Habitat and Species Conservation Invasive Plant Management Section 620 South Meridian St. Tallahassee, FL 32399-1600 850-487-3796

An Unwelcome Summer Visitor: Swimmer's itch (Schistosome cercarial dermatitis)

Summer is here once again in all its hot , humid, buggy glory and chances are dedicated lake goers are smack dab in the middle of it as they enjoy any number of aquatic activities.

However, there is one summer occurrence that folks should be aware of as it can certainly take the fun out of playing in your favorite lake.

It's known as swimmer's itch and similar to poison ivy, anyone who has ever had an outbreak usually doesn't forget it.

Swimmer's itch is the result of a parasitic flatworm that makes its presence known to lake-goers on rare occasions. It is most often experienced in the warmer summer months when greater numbers of people are out swimming in and enjoying their lake.

Initial symptoms are usually experienced soon after swimming or submersing oneself in a lake and they include a tingling sensation soon after drying off the exposed parts of the body. Later, the development of small red spots occurs, then the tingling ceases and the red spots become itchier. The degree of discomfort among individuals. varies depending on the severity of infestation and prior exposure. The more often one is exposed to swimmer's itch. the more sensitive they could be to future outbreaks.

So where does this aquatic pest come from?

This tiny parasitic flatworm that is capable of causing so much discomfort among humans originates in the bloodstream of some aquatic bird species. Adult worms live in the bird's digestive



tract and their eggs are transferred to the lake via the excrement of the bird.

Once in the water the eggs hatch and the larvae search for a certain species of snail, which they will invade and use as the secondary host. Larvae live in the snail and eventually emerge as a secondary microscopic larval stage that is known as *cercaria*. At this point, the cercaria normally will seek out aquatic birds such as ducks to complete the life cycle but sometimes mistakenly invade human skin instead. Since humans are not the correct host species, the cercaria soon dies and leaves the swimmer with an itchy but harmless welt.

If welts develop, try over-thecounter anti itch medications such as lotions and antihistamines. Your pharmacist can recommend something suitable for you.

One way of reducing your chances of contracting swimmer's itch and still enjoy your lake is to avoid swimming for long periods in the shallow water. It is believed that cercatias are more concentrated there.

Also, if an area has a history of producing swimmer's itch, avoid swimming there.

Drying off immediately after getting out of the water may help as some species of cercaria only enetr the skin as the water dries on the body.

A few more words of wisdom:

Don't feed aquatic bird species, as this can encourage them to defecate in areas where people swim and it also makes the birds dependent on humans for food.

This article is a reprint from an earlier LAKEWATCH newsletter article written by Amy Richard and Debi Mosely.

Volunteer Feedback

The following was an e-mail in response to our "quarterly check-in" with our primary volunteers that we thought we would share with all of our LAKEWATCHers.

Hi David

I am still doing fine, thank you. Last weekend I measured the flow from Bugg Spring for the umpteenth time. Next weekend I hope to take the 255 LAKEWATCH sample and attend the picnic at Hickory Point. Although retirement is inevitable the thought is repugnant to me. Being a LAKEWATCH volunteer is, and has been a wonderful experience and has helped keep me both physically and mentally active. It has been twenty-two years of pleasure and satisfaction.

It was a pivotal day in my life when Dan Canfield accepted me as a volunteer and recognized the importance of Bugg Spring. It was a year after I retired as a teacher at Leesburg High School. Dan saw the importance of the Spring as " an eye to the aquifer". Sandy Fisher showed me how to collect the samples in January 1990, and Dan encouraged me to determine the flow of the Spring when I took samples later on. I figured out a way to do that and went to the SJRWMD for their approval of my method. They advised me how to calculate the Spring's discharge, Q, but also objected to my making the measurements. The SJRWMD also was opposing LAKEWATCH for its collection of data at that time. They have since changed their mind.

I have made my data available to SJRWMD, USGS, and other agencies over the decades and am pleased to say that SJRWMD has come to appreciate my flow data and granted me the Bob Owen Award last year for supplying it to them. The LAKEWATCH data has shown a steady decline in the amount of nitrogen in the water. The data also documents a 10% increase in flow since 1990. Surprisingly the flow increased at low water from the droughts of 2000 and 2006! It seems that Bugg Spring has 'improved' over the last two decades.

Linda Bystrak from LCWA thought that Bugg Spring might be unique in that, so I contacted SJRWMD and they finally sent me their water quality data from Bugg Spring Run. It confirmed the trend that we discovered through LAKEWATCH. They have recently installed a recording rain gauge and a pressure sensitive gage that reports the stage of the spring to Palatka continuously. That has awakened a new curiosity and revitalized this old man.

I plan to enjoy LAKEWATCH as long as I can but switching over to just watching the 'lake' and the sunset is inevitable. It would be nice to have an apprentice to take over. The project has shown results and is very satisfying, but is just beginning. We need to continue keeping an "eye on the aquifer at Bugg Spring". Sincerely;

Joe Branham Bugg Spring Okahumpka FL

Have a story you would like to share with the LAKEWATCH family? Send it in to David Watson, 7922 NW 71st Street, Gainesville, FL 32653-3071 or <u>dlwatson@ufl.edu</u> and we will get it in a future volume.

Pythiosis in Dogs (Phycomyosis or Swamp Fever)

Late in the summer of 2010 the LAKEWATCH volunteer on Deerback lake in Marion County reported to Florida LAKEWATCH that her dog had been infected with a disease that the dog got from her lake. The disease was called pythiosis (also called Phycomyosis or swamp fever.)

Pythiosis is an uncommon but often fatal infectious disease that occurs in dogs, cats and horses. In dogs this disease affects the gastrointestinal tract or the skin. Dogs with open soars usually contract the disease when they drink, stand or swim in water inhabited by the aquatic mold *Pythium insidiosum* which is found throughout the southern United States, especially the Gulf Coast states.

Large breed dogs, particularly hunting dogs working near water are at higher risk however any dogs exposed to warm freshwater lakes, swamps and ponds may be risk Worldwide at the gastrointestinal form is the most common form however, in the Southeastern United States the cutaneous (skin) form is most common. Most infections occur in the summer months, particularly after periods of heavy rainfall.

Symptoms

Infected spores enter the system through open soars or wounds in the animal. Once in the animals system Pythium organisms grow



A dog infected with Pythium insidioum showing lesion.

causing sever tissue damage that may include wounds that won't heal and drain continuously. These lesions are most commonly found on the legs, head and base of the tail. These frequently may itch and are often confused with other (less lethal) skin infections. In the gastrointestinal form, thickening of digestive tract tissue may be severe and cause complete obstruction. Some signs to watch for may include: chronic weight loss. intermittent vomiting, diarrhea with or without blood, lethargy, chronic open and bloody skin lesions that will not heal and skin masses.

Diagnosis

This disease can be difficult to diagnose. Baseline tests can include a complete blood count, a biochemical profile, and urinalysis. Swabs or biopsies of the infected tissue studied under a microscope can sometimes yield an organism identification. Culterd swabs may also lead to postive identification however most other diseases are ruled out before a postitve diagnosis for Pythiosis.

Treatment

The most common treatment is the surgical removal of the affected area, however this must occur early in its course for this or any treatment to be affective. Some antifungal agents may be used several months following successful surgery.

Prognosis

Unless the affected area is successfully removed early in its course prognosis is very poor. Only one out of every five patients recover if surgery is not successful. If the infected area is successfully removed prognosis is fair.



Florida LAKEWATCH Fisheries and Aquatic Sciences School of Forest Resources and Conservation 7922 NW 71st Street Gainesville, FL 32653



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Florida LAKEWATCH Fisheries and Aquatic Sciences School of Forest Resources and Conservation 7922 NW71stStreet Gainesville, FL 32653 orcall 1-800-LAKEWATCH (800-525-3928) (522) 392-4817 E-mail: f1-lakewatch@uf1.edu http://lakewatch.ifas.uf1.edu/

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



Pythium insidiosum hyphe drawn by Jan Witkamp, a Dutch investigator in 1924.

While this disease is quite series and often fatal it should be noted that it is rare and that many animals enjoy waterbodies in Florida without contracting the disease.

For more information on pythious visit these web sites: <u>www.vet.uga.edu</u>, <u>www.pavlab.com</u> and http://bld.msu.edu/mendoza.html