

Florida



LAKEWATCH

Dedicated to Sharing Information About Water Management and the Florida LAKEWATCH Program Volume XXVII 2004



Lisa Modola checks out lake monitoring data at the 2003 Annual Putnam County LAKEWATCH volunteer appreciation meeting.

Trend Analysis Coming Soon to a LAKEWATCH Meeting Near You!

In 1991, Florida LAKEWATCH (FLW) was mandated by the Florida legislature to provide citizens with a means to collect water quality data from lakes and waterbodies throughout the state. As part of this mandate, FLW was also given the task of using the data to establish trends and provide general background information.

Since that time, hundreds of volunteers have collected long-term data (i.e., for 24 months or longer) for 622 lakes. Now we are in the process of developing trend analysis for each of these waterbodies. The

results are being formatted into a new set of graphs, which will be made available to all of our active volunteers in their annual data packets. As usual, they can be obtained at annual regional meetings or mailed.

The new graphs are quite different from the bar graphs we've been using (which we will continue to provide) and interpretation may, at first, seem a little daunting. But have no fear. The same four water chemistry parameters are used for the new trend analysis (i.e., total nitrogen, total phosphorus, chlorophyll, and water clarity), so the only thing you'll really need to learn is

how to "read" the graphs. Our regional coordinators will be glad to help you take the next step in determining whether or not there have been any changes in lake trophic state.¹ In a nutshell, the graphs will help assess whether or not any significant long-term changes or trends are developing within the waterbody over time.

A cautionary note: This new analysis should be considered only a preliminary step in determining if there is a trend in a lake. There are many factors that must be taken into account before any strong conclusions can be drawn. For example, what at first may appear to be a significant change in water chemistry may turn out to be simply a natural fluctuation within a long-term cycle and, depending on climate patterns, some cycles can last for years.

We'll look forward to seeing you at your local annual regional meeting, so we can tell you more about this exciting lake management tool.

Note: Meetings are scheduled by county and are held throughout the year.

¹ *Trophic state* refers to a classification system that is used to describe the biological productivity of a lake (i.e., the ability of a lake to support life). For more on this, see the FLW pamphlet entitled *Trophic State: A Waterbody's Ability to Support Plants, Fish and Wildlife*, available on-line: <http://lakewatch.ifas.ufl.edu/LWcirc.html>



UNIVERSITY OF
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Institute of Food and Agricultural Sciences

Cruising to Palatka

by John de Sousa

Veteran LAKEWATCH volunteer Bob Forbes sent us this story, written a few years back by a fellow antique boating enthusiast and friend, the late John de Sousa. We thought you might enjoy taking a few minutes from your hectic schedule to travel with these merry adventurers as they cruise to Palatka through a maze of waterways. Enjoy!

Dawn came slowly. Light had not yet broken when we started through the Dora Canal connecting Lake Dora to Lake Eustis. We were all anxious to get going so the creeping rate of “no wake” gave extra length to the canal. By the time we reached Lake Eustis, the four of us — Bob Forbes, Lowell Ford, Dick Roick and I — had settled in for our much anticipated cruise of the waterways to Palatka, principally the Oklawaha River.

Bob Forbes put the cruise together. Two boats were used, both were his: *Reflections* was a 1966 Century Resorter and *Serendipity* was a 1963 Thompson, powered with a 75-horsepower Suzuki outboard. Bob and Lowell ran the Century, Dick and I ran the Thompson. They led the way hurriedly north on Lake Eustis right past Haines Creek.

Tom, the lockmaster, worked us through a four and one-half foot change in water level at Burrell Lock. Soon, we were through the lock and running well toward Lake Griffin. Few fishermen were out at that hour, but the birds were everywhere and flew along with us. Lake Griffin came up dead ahead.

Running due north for about seven minutes, we entered the Oklawaha River. Twenty minutes later, we were at Nelson’s Fish Camp (Route 42) where we topped off the tanks and took off again. The river runs fairly straight north through lowlands. The eastern bank appears to have a water control dike most of the way to Moss Bluff Lock. After a brief wait, we entered the lock. It took about 25 minutes to leave the lock, after having changed the water level by 23 feet! Jim Black, the lockmaster, greeted us with a bit of subtle humor. When he learned our



Boaters (identities unknown) on an Oklawaha River cruise, approaching Lake Griffin in 1963.

Florida Memory Project: Florida Photographic Collection

destination was Palatka, he quipped, “Why would anyone go there? That town is so dead, the doctor cuts hair on Wednesday afternoons!”

About two miles beyond the lock, take heed: a small spring-fed stream enters forming a sand bar near the east bank. It is on a slight western turn, which normally would make the best water towards the east bank. Not so. That is where the sand from the spring piles up. Stand clear and proceed with caution.

For miles after the lock, the river runs between beautifully arched trees of multiple varieties, dressed in their finest Spring brilliance. It is nature at its best — wild, untamed, uninhabited, and pristine — and an impressive change from what is generally seen of Florida. Silver River, crystal clear, unlike the dark Oklawaha, joined us about two hours past Nelson’s (close to Route 40). Speed was reduced for a spell, due to twists, turns and switchbacks.

Before long, Bob was leading at a pretty fair clip when — BANG! — a large submersed log brought the boat to an abrupt halt. We were hot on his heels when Lowell signaled us down, but before we could stop, our Suzuki motor struck the same log. At the time, it seemed as if the Century’s motor was able to bump over the log, doing no apparent damage. However, once the engine was re-started and underway, we became aware of a distinct vibration, which meant that we

had a bent prop. Lowell and Bob elected to continue on, limited to 1,000 RPMs. It happened close to 10 a.m. so if you calculate running time, from the beginning to our current location, we were doing very well, timewise.

From there on, however, things got slow. Passing Gore’s Landing at 11:30, we encountered a canoe party appearing to be from Outward Bound. Occasionally there were campers on the eastern bank. The current was running stronger and running with us, affecting our steerage. Suddenly, a fallen tree blocked our course. Bob got hung up briefly and the current took me into the bushes! We poled through, proceeding until a larger tree appeared to be completely blocking the river. Again, both boats were pulled and poled through until we were on our way again. At noon, we passed Sunday Bluff en route to Eureka Landing, arriving there at 12:30. (Route 316 passes over the river here.)

From the look of things, Eureka Landing had seen better days as there is an inoperative lock and dam structure standing idle. Where the river backed up, there are pilings heavy enough to tie up large barges. Before Eureka Landing, the eastern bank changed from heavily wooded low elevation to a series of interesting sand bluffs, each commanding the river to turn westward — a stark contrast to the woods.

Continued on page 8.

Countless Ways to Use LAKEWATCH Data

Lake History Revealed in Sediments

Lakes age, just like people do. But instead of accumulating wrinkles, lakes accumulate sediments. Stormwater runoff is one factor that influences sediment accumulation, especially if the runoff is piped directly into a waterbody. (Residents living near Lake Wales, in Polk County are currently dealing with this problem.) However, rapid short-term build-up of lake mud is not as common as one might think. While lakes do accumulate sediments, the rate tends to be slow, generally on the order of one to ten millimeters (mm) per year. Also, some natural processes actually slow the rate of sediment accumulation. For instance, periodic droughts, like those experienced a few years ago in Florida, are one way Mother Nature keeps lakes from filling with sediment too quickly. During that time, as water levels fell, bottom sediments were exposed to air and blew away or dried and hardened before Florida's normal rain patterns returned and water levels rose once again.

Paleolimnologists (scientists who examine the history of a lake by studying lake sediment cores) have begun to explore the aging process in several Florida lakes. One recent study was conducted by UF researchers Mark Brenner and Jason Curtis on Lake Davis, a 150 acre "pool" located within the Tsala Apopka Chain-of-Lakes, in the city of Inverness (Citrus County). The project was initiated by local citizens who were concerned about the development of floating mats of vegetation (tussocks) within the lake. Both lakeside residents and scientists suspected that the sudden appearance of tussocks might also be accompanied by a rapid accumulation of sediments throughout the waterbody. Because the Davis pool is rather shallow, with many areas less than two meters deep (i.e., about six feet), there was concern that the lake might be filling in too quickly.

Funded by Citrus County Aquatic Services and the Southwest Florida Water Management District, Brenner and Curtis set out to answer two basic questions:

1) How thick are sediments at sites throughout the lake? 2) How long have the sediments been accumulating in the basin?



Matthew Beck / Citrus County Chronicle

UF researchers Mark Brenner (right) and Jason Curtis (far left) sample organic sediment cores from Davis Lake in Citrus County.

Results of the project were somewhat surprising: Sediment thickness was measured at 33 stations throughout the open-water portion of the lake, revealing organic deposits (also known as mud) that ranged from 180 to 641 centimeters thick (6 to 21 feet)! Most stations had thick accumulations of mud, with 28 of them showing more than 400 cm (13.1 feet) of sediment.

The next step was to determine how long it took for the mud to accumulate. Long sediment cores were collected at three places within the lake and organic material near the base of each core was dated using radiocarbon techniques. The cores showed that the original onset of sediment accumulation in the lake was nearly identical at each of the three locations. However, it wasn't a recent event; the basal sediments dated back about 5,000 years! Also, the radiocarbon dates throughout the cores show that sediment accumulated at a relatively constant rate of about one meter per millennium (i.e. a little over three feet every 1,000 years). So, while it's true that lakes do eventually fill in as part of the aging process, Lake Davis has been experiencing progressive in-filling for thousands of years and is not suffering from a recent rapid sedimentation.

With this information available, researchers now theorize that the recent

tussock development on the lake was caused by low water levels during the drought from 1999-2001. The low water allowed plants to grow on the exposed bottom for the first time in a long time. In addition, plants could grow in shallow-water areas that had previously been too deep (i.e., light was now able to penetrate to the bottom, allowing photosynthesis to occur there). When rains returned and water levels rose to "normal," the plants were uprooted, creating large floating islands of vegetation.

This study underscores the importance of using multiple lines of evidence to address environmental issues. When combined with information on contemporary water chemistry, the sediment data provides us with a much clearer picture of what is happening in Florida lakes over time and it also helps us predict what may happen in the future.

Florida LAKEWATCH

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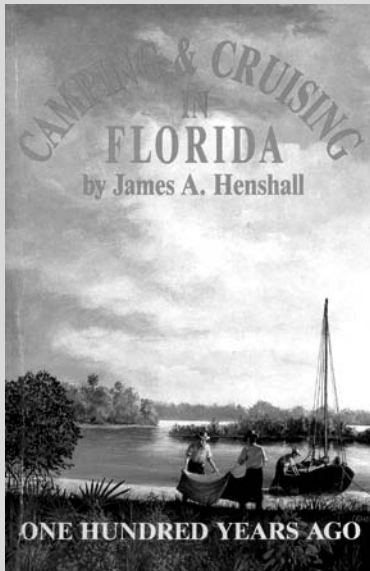
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Camping and Cruising in Florida

(One Hundred Years Ago)

If the "Cruise to Palatka" story (page 2) whet your appetite for more boating and cruising stories, we recommend this book by James A. Henshall, MD. It's a very enjoyable piece of Florida history. Reprinted in 1991 (ISBN 0-912451-12-2).

Contact: Florida Classics Library
PO Box 1657
Port Salerno, FL 34992
Phone: 772.546.9380

Lake County Water Authority Looking to Install Water Level Gauges on 20 Lakes

Volunteers who are willing to take readings from a water gauge on their lake, on a regular basis, should contact the Lake County Water Authority as soon as possible. Funding is now available for the placement of gauges on 20 lakes. Lake County Water Authority staff will install the gauges and provide instruction.

For more information, contact:
Ron Hart / Water Resources Program Mgr
Phone: 352.343.3777

Potential Watershed Protection Funding Sources

The US EPA recently updated the "Catalog of Federal Funding Sources for Watershed Protection." The catalog is now online as a user-friendly, searchable Web site. The site provides information that may be available to help fund various watershed-related projects. The EPA plans to update the site on a regular basis:

<http://www.cfpub.epa.gov/fedfund/>

Five-Year Freshwater Fishing License Promotion

The Florida Fish and Wildlife Conservation Commission (FWC) is extending its promotional 5-Year Freshwater Fishing License campaign through the end of April. According to Bob Watten-dorf, with the FWC, more than 20 fishing manufacturers and publishers made the extension possible by providing a plethora of free samples and coupons. License purchasers will receive the samples and coupons as free bonuses if they purchase a license during this promotional period.

The 5-year licenses are available from county tax collector offices for \$61.50 or by phone at **1-888-FISH-FLORIDA (1-888-347-4356)**. To use the phone system, available 24 hours a day, callers must have a major credit card and will be billed an additional \$3.95 handling fee. Anglers who purchase five-year licenses by phone will be able to start fishing immediately and will receive their credit-card style license by mail, along with a package of free samples and special offers, including a fanny-pack, various lures, hooks, weights, and fishing-related magazines worth more than \$40, in addition to numerous coupons and special offers.

Mark Your Calendar Free Fishing Weekend

On April 3 - 4, residents and nonresident anglers can fish Florida's fresh waters without a license, provided all other fishing and boating regulations are followed. FWC is hoping large numbers of people will take advantage of the opportunity to go fishing with their families and friends on this free fishing weekend, and maybe even introduce somebody new to fishing. For more information, visit FWC's Web site:

<http://www.state.fl.us/FWC/fishing>

Welcome Aboard!

LAKEWATCH would like to welcome Christina Verlinde and Scott Jackson, with the University of Florida Cooperative Extension Service, who will be working with our staff to better serve volunteers in the Florida Panhandle. Both will be training volunteers and providing technical support to citizens with concerns or questions about lakes and/or waterbodies in the area. Please don't hesitate to call these folks or our regional coordinators if you should have any questions.

Santa Rosa County

Christina Verlinde 850.623.3868
E-mail: christinav@co.santa-rosa.fl.us

Okaloosa and Walton Counties

Scott Jackson 850.865.0023
E-mail: lsjackson@mail.ifas.ufl.edu



Bulletin Board

New Collection Center

Polk County

Veterinary Hospital
520 Mountain Lake Cutoff Road
Lake Wales, FL 33859
Contact person: Thomas Schotman
Phone: 863.676.1451

Note: We would like to thank the agencies, groups, individuals, and organizations that provide collection centers for our water samples. Without use of these facilities, we would not be able to store and process thousands of samples across the state each month. A list of LAKEWATCH collection centers is now viewable on the web:

<http://lakewatch.ifas.ufl.edu/CollectCenters.htm>

June 7 - 10 Florida Lake Management Society 15th Annual Conference and Meeting

Theme: A Tale of Many Waters — Florida's Limnic Resources

This year's meeting will be held at the Saddlebrook Resort, located north of Tampa in Pasco County on a 480-acre natural Florida wetland and uplands site. The conference will include a full day of workshops on June 7th. The conference itself begins on June 8th and runs through the morning of June 10th. Topics will include: managing urban lakes; sediment removal; recreational issues; springs; toxic algae; restoration of the Harris Chain-of-Lakes; volunteers in lake management; lake restoration techniques; vegetation control, etc.

For more information, contact:

Dr. Jim Griffin / Conference Chair
Phone: 352.796.7211
800.423.1476 ext 4286
E-mail: jim.griffin@swfwmd.state.fl.us

June 4 - 5 Lake and Property Owner Training Weekend

Organized by a number of chapters within the Florida Lake Management Society, this two-day event will precede the 15th Annual Lake Management Conference (see below). John Brennehan, with the UF/IFAS Cooperative Extension Service, will lead the training at the new Starkey Education Center in Pasco County.

Activities are designed for lake and pond property owners who want to better understand Florida's aquatic systems and also allows for folks to meet others with similar interests or concerns. Field activities are included.

Scholarships of \$25 are available for the first 30 participants to sign up, thanks to an education grant from the Pinellas-Anclote Basin Board of the Southwest Florida Water Management District. Overall attendance is limited to 60 people, so be sure to call and make a reservation as soon as possible (preferably before May 1).

Schedule:

Friday June 4 4 PM – 10 PM
Saturday June 5 9 AM – 4 PM

Cost:

\$ 50 per person for the weekend. This includes BBQ Friday night and breakfast and lunch on Saturday.

Accommodations:

Starkey Preserve has adjoining campsites and cabins (not air-conditioned) for those who want to stay the night.

For more information, contact:

Jim Griffin
14937 Lake Forest Dr
Lutz, FL 33559
E-mail: griffinjc1@aol.com
Phone: 813.977.5691

Note: Make checks payable to Florida Lake Management Society.



FWC Florida Bass Center Begins Construction

Construction on the Florida Bass Conservation Center began this February at the Florida Fish and Wildlife Conservation Commission's (FWC) Richloam Fish Hatchery in Sumter County. The \$8 million facility will serve a variety of management and conservation needs, with special attention on the Florida largemouth bass. Promising research into artificial feed development for bass fingerlings will continue, along with largemouth bass virus and other fish health issues. In conjunction with other FWC genetics laboratories, the bass center will produce certified Florida subspecies for stocking in public waters.

The initial facility consists of a 14,000 square foot, two-story research and production building that includes six 80-foot raceways, fourteen 30-foot fiberglass tanks and a number of 6-foot hatching troughs.

For more information contact:

Scott Hardin
850.488.4068

Featured Fish: Lake Chubsucker

Granted, it's hard for most anglers to muster up much excitement upon seeing a lake chubsucker in their favorite fishing hole. However, instead of being disappointed, one may want to sit up and take notice, as it could mean that a largemouth bass is lurking nearby. Apparently, these fish are a favorite food item for bass – particularly bass that are 500 millimeters long or longer (approximately 19.5 inches). We know this thanks to several food habit studies and observant biologists who have made note of the stomach contents of largemouth bass caught from lakes around the state.

In Florida, lake chubsuckers can be found in a variety of habitats including bayous, borrow pits, canals, creeks, lakes, floodplains, impoundments, ponds, oxbows, sloughs, roadside ditches, springs, swamps, rivers, and wet prairies. Within these environments, they tend to be found in areas where the water is fairly still or flowing just slightly. They are most abundant where the bottom is soft and full of organic debris (dead plants, leaves, etc.) or in areas with dense live aquatic vegetation.

The lake chubsucker is a “heavy-bodied” fish, similar in appearance to members of the carp family. In fact, chubsuckers are sometimes confused with grass carp, as both types of fish have the tell-tale sucker mouth located slightly beneath their snout. The body color of a lake chubsucker can vary from dark bronze, brown or olive on the upper surfaces and lighter bronze over the sides, with whitish undersides. At times, these fish can appear to be somewhat gold in color.

In Florida, lake chubsuckers are sometimes confused with a close relative, the sharpfin chubsucker, found mostly in the panhandle. The easiest way to distinguish them from one another is to observe the profile of their dorsal fins; as its name suggests, the sharpfin has a pointed dorsal fin whereas the lake chubsucker has a somewhat rounded dorsal fin. The remaining species of sucker fish found in Florida (i.e., the spotted sucker,



Chuck Cichra

lake chubsucker (*Erimyzon sucetta*)

river redhorse, blacktail redhorse and grayfin redhorse) have much more streamlined body shapes than the chubsuckers. Another difference: the mouths of the spotted sucker and redhorse suckers are positioned directly beneath the head in a down-turned fashion.

Lake chubsuckers are distributed throughout Florida and along the Gulf of Mexico to eastern Texas and along the Atlantic coast to southeastern Virginia. A second distribution pattern also exists within the Mississippi River system from Louisiana to Wisconsin, Michigan, and extreme southeastern Canada.

Because they feed on both plants and animals, lake chubsuckers are considered to be omnivores. Feeding along the bottom with their sucker-shaped mouths, they take in aquatic insects, fish eggs, crustaceans, algae, and other plants.

In most areas, including Florida, the peak spawning season is in the spring and early summer. In Florida, reproduction may take place over a long period of time; depending upon the geographic area, spawning may occur from December through October. About 2,000 to 20,000 eggs are produced by each female. Lake chubsuckers may attain an age of eight years and a maximum size of about 18 inches in length. In Lake Panasoffkee, located in Sumter County (north central Florida), a number of these fish have

reached a length of 15.5 inches and a weight of 2.2 pounds.

In some parts of the country lake chubsuckers are taken with nets, or by snagging or gigging during spring spawning runs, and they may sometimes be caught on small flies or live bait. They are generally considered to be good table fare, but caution is advised as they are quite bony. They can be fried, broiled or baked.

Reference

<http://myfwc.com/fishing/fishes/suckers.html>

You may have noticed that fish and bird names used in this newsletter appear by their common name first and are followed by the scientific name. Because the common name of an animal may vary from place to place, it is easier to rely on the scientific name for identification. Scientific names generally consist of two Latin-based words, both are italicized. For example, the scientific name for the lake chubsucker is *Erimyzon sucetta*. The first word, *Erimyzon*, refers to the genus group that the fish belongs to. It will always be capitalized. The second word, *sucetta*, refers to the smaller, more specific group within the genus *Erimyzon*, and it is not capitalized. At times, you may see a three-part scientific name. This is used for animals that are considered to be a subspecies.

Featured Birds: Turkey Vulture & Black Vulture

The sight of a turkey vulture or a black vulture soaring effortlessly in the sky or skulking near a small dead animal (aka carrion) on the side of the road is a common occurrence in Florida, and it's a good thing. These birds serve as feathered trash collectors along our roads and waterways, providing an important cleaning service to the local landscape. Often, they can be seen "cleaning" an occasional dead fish from the shorelines of lakes, ponds, and rivers.

The two birds can be distinguished from one another fairly easily, as the turkey vulture has a red featherless head and black vultures have black or dark gray head. Both have a white bill, though at times, it may not be easily visible. A few other distinguishing characteristics: the turkey vulture's feathers are dark silver gray with black lining, whereas the black vulture has white patches at the base of its primary feathers (i.e., the underside of the wing).

In flight, turkey vultures are seldom seen flapping their wings, but instead rock gently from side to side — a technique they use to ride rising columns of warm air, also known as thermals. By extending their primary feathers during flight, vultures are able to create small gaps between the feathers, reducing wingtip turbulence and lowering their stalling speed. This allows the bird to remain aloft at a slow speed for long periods of time.

Distribution of these birds overlaps somewhat. A permanent Florida resident, the black vulture also resides and breeds in the desert southwest, as well as locations east and north to New Jersey, and south all the way to Chile and Argentina. The turkey vulture resides and breeds from British Columbia east to New York, Vermont, and New Hampshire, south to Cuba and Jamaica, and through-out Central and South America. Unlike the black vulture, the turkey vulture has become a permanent resident of the Florida Keys.

Throughout Florida, both the black and the turkey vulture lay their eggs mostly in dense stands of saw palmetto in or near open pine woods, fallen hollow logs, and, occasionally, caves,



turkey vulture (*Cathartes aura*)



black vulture (*Coragyps atratus*)

photos by Dan Sudia

rock ledges, and abandoned buildings. No nests are constructed; instead, these birds lay one to three (most often two) whitish eggs, often marked or stained with brown, on a bare surface. Incubation takes approximately 38 to 41 days; young turkey buzzards fledge at about two months of age and black vultures fledge within about 80 to 94 days of hatching (Ehrlich et al. 1988).

Turkey vultures feed on carrion found on highways, pastures, lakes and waterways, and at dumps. The black vulture's diet is similar. In fact, black vultures commonly rely on the turkey vulture to find food, since they have stronger vision and olfactory abilities. The black vulture is perhaps a bit less popular as it's been known to eat vinyl materials such as roof coverings, pipe insulation, and boat seat cushions. It also eats live young mammals and birds, which may explain why the black vulture has such strong talons.

References

Florida Fish and Wildlife Conservation Commission. Florida's breeding bird atlas: A collaborative study of Florida's bird life. Herbert W. Kale II, January 6, 2003. <http://www.wildflorida.org/bba/>

Field Guide to the Birds of North America. National Geographic Society. Washington, D.C. 1983.

Unwanted Visitors?

Vultures may provide an important mechanism for cleaning the outdoor environment of unwanted carrion, but they can also make quite a mess with their own bird droppings. Just ask the folks here at the Department of Fisheries and Aquatic Sciences in Gainesville where, for months, a group of vultures roosted in a stand of trees near the research ponds. Within a short time, the area became a problem for those who had to work nearby or even walk past. After numerous attempts to scare the vultures away with sound devices, the birds finally relocated after a savvy wildlife biologist, Dr. Mike Avery, hung a plastic effigy of a dead vulture in a tree nearby. Amazingly, the birds have stayed away, only returning for an occasional day visit. For more information on vulture management check out the USDA website:

<http://www.aphis.usda.gov/ws/nwrc/research/vultures/index.html>

or contact **Eric Tillman** at the USDA office (352.377.5556).

Youth Education

Our LAKEWATCH hats are off to Danny Lewis for his 1st place award in Osceola County's Regional Science and Engineering Fair. He will compete state-wide in April.

Danny compared concentrations of *cyanobacteria*, a blue-green algae, in two types of lakes (eutrophic vs. oligotrophic). As Danny learned, this type of algae is found all over the world, though at times, it has been known to produce harmful toxins. As a result, it has gained some notoriety in the media recently.¹

He hypothesized that West Lake Toho, a eutrophic lake, would have higher concentrations of cyanobacteria than Lake Gentry, an oligotrophic lake. To test this, he collected a number of water samples at each lake and then

later counted and classified the algae content at a laboratory at the Department of Fisheries and Aquatic Sciences in Gainesville (UF/IFAS). Regional Coordinator Dan Willis taught Danny how to use the FLW data-base and Mary Cichra, Sr. Biological Scientist at the Department, spent several weekends teaching Danny how to identify algae.

While his hypothesis was correct (i.e., West Lake Toho had an average of 27.3 cyanobacteria colonies per sample versus 2.4 colonies in the Lake Gentry samples), he also discovered that the overall amount of cyanobacteria in each lake was low.

Danny is an 8th Grader at St. Thomas Aquinas School in St. Cloud. This is his third year working on a water-related project. Keep up the good work, Danny!



Danny Lewis, a budding scientist, works on his science fair project.

¹ For more on cyanobacteria in Florida lakes, see "A Tempered View," in the FLW newsletter Volume XX (2001) or download the article from the web: <http://lakewat.ufl.edu/>

Cruising to Palatka *Continued from page 2.*

Not far beyond Eureka Landing, the Century's strut gave way; the increased vibration stopped the engine.

What to do?

Tow with the Thompson!

We rigged a bridle, set a tow line, and began the slow arduous towing for seven hours. This happened about a third of the way into the approach to Lake Oklawaha, a tiring, winding course requiring careful maneuvering around curves where the lead boat came close to one bank, while the towed boat would cut across to the opposite bank. It was impossible to steer or control the towed Century except by positioning the Thompson — a matter of constant vigilance and careful steering.

By now the canopy of trees had given way to open marshes, a combination of water and grass everywhere. Dead trees, a barren gray against the green grass, dotted the openness. Some thirty buzzards, perched on the dead trees, looked hopefully at us four poor old men. Their hopes dimmed as the towing went well. However, alligators aplenty viewed us suspiciously.

With the sun now high in the sky and no shade within miles, up went the Bimini tops and on went the sunglasses. With grass and water everywhere, a proper course was questionable, when what should appear but new brightly painted markers! We soon learned to stringently abide by them. Just north of Orange Spring landing, the waterway takes an

easterly course. Here begins the openness of Lake Oklawaha. It gradually widens, becoming shallow with the stumps showing everywhere, except for the marked channels. Far in the distance, the high level bridge of Route 19 appeared, and just barely visible were the big trailer trucks crossing the bridge.

The Buckman Lock shuts down at 4:30 and we still had two miles to go. We arrived one hour late. Now, what to do? Fortunately, Bob Forbes had contacted the lockmaster days before we left. He told Bob where he lived so when we tied up to the wall of the lock, Bob scrambled up a ladder and dropped in on Charlie at supper time. Charlie, being one of the nicest of all guys came down, putting us through the lock, a water level change of 18 feet!

But that's not all. Despite our slow pace from towing, another element put us dead in the water. Weeds! Yes, weeds, the likes of which I have never seen. Long, stringy, filament-like and tough — tough enough to stop the outboard. Fortunately, the outboard engine lifted clear of the water, making it possible to clean. No regular prop boat could have made it without someone getting in the water to clear the weeds.

In the lock, it was another story; the weeds were so thick the engine could not run at all. We poled our way *over* the weeds. While Dick and I pushed and shoved, the smarter of the four, Bob and

Lowell, watched. It was just past six o'clock when we headed for the St. Johns River, about three miles east.

The Barge Canal enters the St. Johns at Marker 31. We were there at 6:30, just in time to watch the sun, a great ball of fire, gradually disappear behind a rise of wooded shore. Just to be sure, and before darkness set in, the Thompson was refueled from the Century. The St. Johns is well marked, the navigation lights clear, and soon Palatka towers showed in the distance. From Buckman Lock to Palatka is approximately 15 miles. It was well after dark (9:00) when we arrived at the Holiday Inn and secured the boats.

Would I do it again? You bet! In spite of the trouble, it was truly great, a must adventure. Next time, I would launch at Rodman Lock and come back to Lake Dora. From Rodman to St. Johns is not that interesting and the St. Johns is familiar, besides it would cut 15 miles off the nearly 100 mile cruise.

A few words of caution: Gas is available at Nelson's Fish Camp but not beyond, so have plenty to spare. A bow saw or chain saw is good insurance, along with a block and tackle, plus water and non-perishable food. Check the lock times and weed growth situation. There is a chart available from the Lake County Water Authority in Tavares.

We had fun and you can too!