

# Florida



# LAKEWATCH

Dedicated to Sharing Information About Water Management and the Florida LAKEWATCH Program Volume XXVI 2003

## If You Build It, Will They Come?

*About this time each year, we're asked if there are any advantages to placing Christmas trees or other types of brush piles in lakes for habitat enhancement. To answer that question, we've provided excerpts from an article written by Dr. Mike Allen, Associate Professor here at UF's Dept. of Fisheries and Aquatic Sciences.<sup>1</sup> Dr. Allen specializes in fisheries ecology and has produced numerous studies and articles concerning the use of habitat structure to enhance fisheries in lakes.*

### Important

**Anyone wishing to place habitat structures in public waters will need to contact the Florida Department of Environmental Protection (DEP) / Environmental Resource Permitting Division and/or the local Water Management District, as permits may be required. You may also want to contact your local Florida Fish and Wildlife Conservation Commission (FWC), as they sometimes maintain permits for existing fish attracting sites and occasionally bass clubs and/or interested anglers can assist in refurbishing these areas with new brush or other structures.**

<sup>1</sup> *Habitat Structures in Lakes and Reservoirs: If You Build it, Will They Come? Lakeline. North American Lake Management Society. Fall 2001. Pages 23 - 25.*



Amy Richard

Not all lakes will benefit from placement of habitat structures. Lakes containing abundant aquatic plants or young reservoirs with standing timber likely do not need habitat enhancement. However, habitat structures placed in lakes containing bare shorelines and large open-water areas are those most likely to concentrate fish and improve angler catch rates.

In Florida, many lakes often contain a margin of emergent vegetation (i.e., aquatic plants rooted in bottom sediments) in littoral areas but large open-water areas offshore are often devoid of vegetation. In such lakes, the Florida Fish and Wildlife Conservation Commission has found that offshore brush piles will concentrate fish and improve angler catch rates for largemouth bass, crappie, and sunfish.

The type of material and structure used for habitat enhancement varies widely by agency, region, and water body. Cost and availability appear to be the primary factors. Christmas trees are commonly used not only due to availability but also for public relations reasons. Volunteer tree recycling programs allow the public to donate Christmas trees to a set location and help with placement of the trees in area lakes. Many other tree species are commonly used and vary by region depending on the species range.

**Continued on page 2.**



## UNIVERSITY OF FLORIDA

Institute of Food and Agricultural Sciences

Although several states have historically used tire reefs as fish attracting devices, recent environmental concerns make them an increasingly less attractive option. Agencies now use a wide variety of materials, usually available at low cost including buckets, barrels, old wire spools, old cars, old boats, and concrete rubble. There are also several commercially produced habitat structures such as the Fish N Tree® and Berkley FISH HAB®.

The effectiveness of structures depend on a variety of factors, including the amount of material, depth and location of placement, orientation of structure, amount of space available in the structure, and durability of materials. Tire and brush assemblages can also have different configurations with associated advantages and disadvantages. Depending on the fish species of interest, specific spacing may be needed. However, areas with no habitat will likely benefit from placement of structures regardless of the configuration.

The type of materials used to build habitat structures will determine their longevity. Ideally, fisheries managers would like to use materials that are both durable and inexpensive. Although brush is often the least expensive option for habitat structures, it may be short-lived and decrease in effectiveness through time due to decomposition of the smaller branches. Wood types such as cedar or green hardwoods have much longer life spans in the water (e.g., 5-20 years) than pine or Christmas trees (1-10 years). Due

to decomposition of woody structures, many agencies choose other structures made of more durable materials, such as plastic, that may be more expensive to construct or purchase, but will last longer.

### Safety First

Although effectiveness is important, habitat structures should not produce a navigation hazard, reduce the aesthetics of the area, or interfere with the recreational use of the water body. For example, if placed in too shallow of water, they may become damaged by waves or boats and wash ashore. Likewise, anglers may entangle boat propellers in them, or they could pose a hazard to swimmers and water skiers. That's why all constructions should be secured strongly and placed in water depths that are safe to boaters and swimmers. Additionally, many lakes experience large annual or inter-annual water level fluctuations, and this should also be considered. We reiterate that lake managers and homeowners should consult local regulations prior to placing habitat structures in lakes.

### How to Build A Fish Habitat

Configurations of habitat structures vary as much as the types of material used. Keep in mind that wood branches are extremely buoyant and require substantial weight to secure them to the bottom. Rope materials used to anchor brush should be either nylon or steel cable, which will last much longer than

cotton-based ropes that will quickly rot and dislodge from the anchor. One common method of anchoring is to fill a five-gallon bucket with concrete or Quikrete®, then secure a cable loop into the concrete before it dries. The cable loop in the dried concrete can then be tied to cable or nylon cord secured to the brush. Cables are best secured to trees or brush by drilling a hole through the base of the tree and feeding the cable through the drilled hole in the tree. (See figures below.)

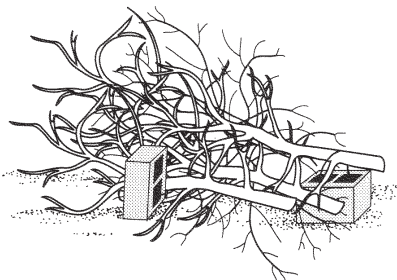
Other common weights used for anchoring are concrete blocks tied securely through the limbs at the base of the tree. Regardless of the method used, tree material should be secured firmly because wind and wave action can cause brush to dislodge from the anchor.

Plastic structures such as PVC pipes have also been secured into concrete-filled buckets, and these will sink rapidly and stay on the bottom. **Structures on the bottom should be marked with a float on the surface to make them easy for boaters, swimmers, and most importantly, anglers to spot them!**

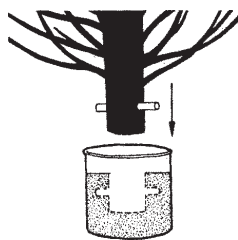
For more information about specific habitat structures and tips on building them, refer to the Southern Division American Fisheries Society Reservoir Committee web page, which includes an online habitat manual for lakes and reservoirs:

[www.sdafs.org/reservoir/manuals/habitat/Main.htm](http://www.sdafs.org/reservoir/manuals/habitat/Main.htm)

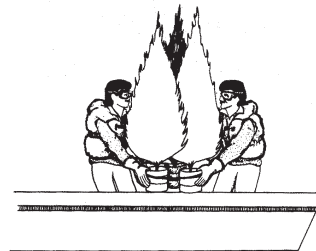
**Editor's Note: Anglers and homeowners wishing to place their own habitat structures should refer to local regulatory agencies, as many lakes have strict restrictions on the type of structures that can be used and their placement.**



*Commonly used configuration for brush pile habitats.*



*Christmas trees can be ballasted by drilling a 3/8-inch horizontal hole in the trunk and placing a length of 1/4-inch steel re-bar or cable into the hole. The tree is then placed into a 5-gallon bucket, filled to 3/4 capacity with concrete.*



*Trees tied together in groups of three or more are more stable than single trees. Dark-colored polypropylene rope or steel cable should be used to tie the trees together.*

# Countless Ways to Use LAKEWATCH Data

## A Turtle Hero

Congratulations are certainly in order for Matt Aresco, FSU doctoral student and wildlife biologist, who has taken it upon himself to research and write the only dissertation (that we know of) about turtle population dynamics and habitat distribution in the state of Florida.<sup>1</sup> For his Ph.D. research, Matt spent the last four years collecting data from a total of 17 lakes in the Leon County area, six of which are LAKEWATCH lakes (e.g., Iamonia, Meginnis Arm, Moore, Piney Z, Tom John and Trout Pond).

Matt says the water chemistry data played an important role in determining the trophic state of each lake and learning how various types of lakes support turtle populations. While his main focus is on Florida cooters (*Pseudemys floridana*) and yellow-bellied sliders (*Trachemys scripta*), he also collected data on a number of turtle species and on alligators, to learn more about aquatic resources and predation. (Kudos to the Florida Fish and Wildlife Conservation Commission for funding part of this research!) As a result of his efforts, Matt documented some rather interesting relationships:

- There seems to be a strong correlation between lake trophic state and turtle abundance. In other words, the more productive a lake is (i.e., the more plants and algae it has), the more it is likely to support large numbers of turtles.

He did note a few exceptions. Lakes with large alligator populations seemed to have smaller numbers of turtles, especially sliders, even in lakes that are considered to be extremely productive. Also, he found that yellow-bellied sliders were more abundant in eutrophic lakes, whereas Florida cooters were more abundant in oligotrophic lakes, especially those located in the northern part of Leon County.

<sup>1</sup> "Ecological relationships, abundance, and competitive interactions of the Florida cooter (*Pseudemys floridana*) and the yellow-bellied slider (*Trachemys scripta*) and their role in aquatic food webs in lakes of northern Florida."



*Matt Aresco releases one of 8,100 turtles that he and volunteers saved since February 2000.*

In some of the more productive large lakes such as Lake Jackson — a lake with abundant macrophytes and relatively low numbers of large alligators — there is an equal abundance of sliders and cooters.

- After studying the digestive tracts of over 200 turtles, he was amazed to learn just how much algae is consumed by yellow-bellied sliders and Florida cooters. (They are especially fond of green filamentous algae.) In fact, he says the digestive system of these herbivorous turtles seems to be specially designed for such a diet, especially Florida cooters which have longer intestines for digesting plants — similar to a cow.

- In his lake food web studies, Matt found that these turtle species provide an important function in lake ecosystems by consuming large amounts of algae and aquatic plants, including invasive species such as Hydrilla. They are also important scavengers of dead or dying fish. And, contrary to popular belief, these turtles cannot capture healthy live fish; they simply aren't fast enough.

### Saving Turtles

If that isn't enough of a contribution, Matt Aresco has sealed his fate as the "turtle guy" by taking the lead on saving more than 8,100 freshwater turtles in the Tallahassee area since February 2000.

It all started with the drought of 1999 and the resulting drop in water level that occurred on Lake Jackson, a 4000-acre lake just north of Tallahassee. In February of 2000, a pre-existing sinkhole within the lake

(aka Porter Sink) opened up and drained the lake like a bathtub. Needless to say, this caused a few problems for wildlife. Desperately in need of water, a mass exodus of turtles and other creatures began to head west for nearby Little Lake Jackson.

There was only one problem: US Hwy 27 happened to be in their direct path. (Little Lake Jackson was, in fact, created when the four-lane highway was constructed right through the middle of the northwest portion of Lake Jackson.) With a daily average of 21,500 vehicles traveling along that highway stretch, it constitutes an impassable barrier to turtles and other wildlife. During one particularly bad 40-day period in the Spring of 2000, an estimated 439 turtles were killed.

In order to prevent further mortality, Matt and a group of volunteers constructed a temporary fence that directs turtles into a small culvert under the road. Ever since then, Matt and friends have monitored the area at least twice a day to identify and measure the turtles, transport them across the highway and release them back into the water. For the time being, a 3,000-foot fence has been erected along the north side of Hwy 27 along with a 2,000-foot fence on the south side (i.e., to intercept turtles attempting to migrate back across the road now that Lake Jackson is full).

According to Matt and other wildlife advocates in the area, the fence is only a temporary solution; the fencing material is degrading rapidly and daily patrols of the area are becoming increasingly difficult for volunteers to maintain. Their goal is to work with Leon County, the Florida Department of Transportation, and other agencies to construct a permanent eco-passage — a concrete guide wall and culvert system — to prevent future mortality of turtles and other wildlife. The Florida Department of Transportation and other agencies are in full support of this project.

**To find out more about the project or to volunteer, contact:**

Matt Aresco / FSU

Phone: (850) 562-3093

E-mail: aresco@bio.fsu.edu

Web: <http://www.lakejacksonturtles.org>



# Volunteer Bulletin Board

## Lake User Survey Results Destined for Publication

FLW staff have yet one more thing to celebrate this autumn. The lake user surveys that many of you filled out last year were included in a scientific paper that has recently been accepted for publication in *Lake and Reservoir Management*, an international peer-reviewed journal of the North American Lake Management Society. The article, entitled *Relations between water chemistry and water quality as defined by lake users in Florida*, is due to be published some time next year. (Editor's Note: See page 3 of FLW Volume XXV for results of last year's Lake User Survey.)

Authors of the paper, Mark Hoyer, Claude Brown and Dan Canfield, Jr., were pleased with the news. According to Mark Hoyer (FLW program leader), the survey was an excellent first step in learning more about how people perceive the quality of their lake versus what the actual water chemistry happens to be. He added that FLW hopes to conduct several surveys in the next few years to learn more about what people's expectations are regarding the quality and/or abundance of wildlife in lakes versus the water chemistry (e.g., nutrients, algae concentrations, etc.).

Why is this important?

As Editor James LaBounty explains in the Journal's acceptance letter, "Lake user survey data are being considered by some states as a basis for developing lake nutrient criteria as part of a national EPA initiative... so evaluation of user survey data is timely and relevant to lake management."



**A belated thanks to Robert Brinker, who made this handsome wood carving for Claude Brown, FLW Regional Coordinator for North Central and Northeast Florida. The carving was presented to Claude in appreciation of his efforts in working with Putnam County volunteers.**

## Simply for Clarity

Many thanks to Bob Forbes, a long-time LAKEWATCH volunteer, who sent us this clever little memory "crutch" as an aid for remembering the order of the four trophic state categories. First he thinks of HOME... and then moves the H to the end to create the acronym **OMEH**:

**O**ligotrophic  
**M**esotrophic  
**E**utrophic  
**H**ypereutrophic

## The Guide for Real Florida Gardeners

A compendium of Florida's native plant nurseries is now available for native plant enthusiasts. Published by the Association of Florida Native Nurseries (the largest native nursery association in U.S.), this booklet is produced to help encourage citizens to plant native species in landscaping and protect Florida's natural habitats. Booklets are free but donations are accepted for shipping.

**Cameron Donaldson / Just Cause Media**  
2112 Helen Street  
Melbourne, FL 32901  
Phone: (321) 951.2210  
E-mail: [cammiedonaldson@earthlink.net](mailto:cammiedonaldson@earthlink.net)

## New Collection Centers

### Orange County

The City of Orlando's Stormwater Utility Bureau is now located in the Lake Enhancement Building  
1030 South Woods Avenue  
Orlando, FL 32801

Contact: Maurice Gioseffi  
Phone: (407) 246-2234 ext 27

### Lake County

A new collection center is located at the Lake County Department of Public Works\*  
609 Disston Avenue  
Minneola, FL 34755

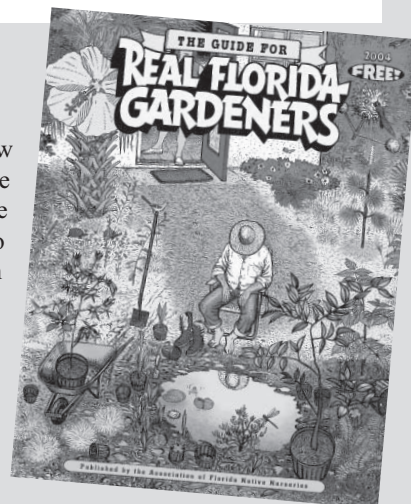
Contact: Dawn Stalmaker  
Don Crandall  
Phone: (352) 394-2559  
Hours: 7:30 - 5:00 M-F

\* The old collection center was located at the Lake County Growth Management Department (formerly known as the Lake County Building Department.)

## To our active volunteers:

Thanks for taking the time to record the GPS coordinates for each of your sampling stations. Keep them coming...

(For more information on this, call 1-800-LAKEWATCH.)



# Volunteer Bulletin Board



A lively group of Florida LAKEWATCH volunteers at a recent Alachua-Bradford-Columbia County volunteer appreciation meeting. The meeting was held at the UF/IFAS Department of Fisheries and Aquatic Sciences in Gainesville. Front row (left to right): Ed Paddice, Joe and Clarice Wood, Milad Meftah, Margie Stone, Phyllis Brumfield, Bill Brumfield. Back row (left to right): Bill Crass, Marty Tod, John Vance, Roger Hunziker, Pat Stone, Claude Brown, Larry Korhnak.

## WANTED:

If you or someone you know would be interested in joining the LAKEWATCH team to monitor water chemistry on any of the following lakes, please contact our office. Call toll free: 1-800-LAKEWATCH (1-800-525-3928) or 352/392-4817. E-mail: lakewat@ufl.edu

### Duval County Lakes

Effie  
Hanna  
Holly Oaks  
Lucina  
Mandarin  
Neptune  
Pleasant Point  
Round Pond  
Tresca  
Turner Pond

### Clay County Lakes

Allen  
Deer Springs  
Gator Bone  
Hartman  
Hillcrest  
Hutchinson  
Oldfield Pond  
Silver Sands  
Spring  
Stevens  
Whitmore

## REWARD:

- ◆ Access to lake experts around the state.
- ◆ Quarterly and annual water chemistry reports on the lake(s) of your choice.
- ◆ Free quarterly newsletters and educational publications about lake ecology.
- ◆ The knowledge that you are contributing to the future of Florida's lakes.

## A Quick Reminder

Volunteers who are actively sampling their lake will be receiving semi-annual "reminder" postcards soon. It's just our friendly way of asking everyone to deliver their water samples to the nearest collection center as soon as possible and/or before the end of the year. We want to ensure that the samples are ready and waiting when our courier makes the rounds one last time in 2003. With over 30 collection centers, things can get pretty hectic during those last few weeks of the year. Your help is greatly appreciated and so is your dedication to lake monitoring. We'd also like to take this opportunity to wish you and your family a safe and happy holiday season!

Sincerely,

*The Florida LAKEWATCH Crew*

## Welcome Back!

After nearly three years of extremely low water levels, every one of the 17 lakes in the **Tsala Apopka Chain-of-Lakes**, in Citrus County, is now being monitored again. This is good news indeed, as most of these lakes had become inaccessible during the severe drought that plagued much of the state from 1999 through part of 2002. FLW Regional Coordinator Julie Terrell is quite pleased to have everyone collecting samples again. As she is quick to point out, now that these lakes are being monitored, we will have first-hand knowledge of how water chemistry "behaves" after such a prolonged drought.





## Featured Fish

# Warmouth



Mike Allen

### Warmouth (*Lepomis gulosus*)

#### Common names:

warmouth bass, warmouth perch, goggle-eye, redeye and goggle-eyed perch, stump knocker

The warmouth (*Lepomis gulosus*) is a type of “panfish” that almost every freshwater angler has caught at some point. Its body shape is similar to that of a bluegill or redear sunfish. However, red eyes and an unusually large bass-like mouth are the most conspicuous clues that it is indeed a warmouth. Their coloration varies from a brassy hue to dark-olive green and often have a purple tint overall. Broad, irregular dark bars give it a mottled appearance. The soft-rayed portions of the dorsal and anal fins are marked with rows of dark spots. Also, three or four discernible dark stripes can also be seen radiating back from the eye across to the cheek and gill cover.

Warmouth inhabit swamps, marshes, shallow lakes, slow-moving streams and canals with soft, muddy bottoms. They prefer to stay around aquatic vegetation, stumps, and snags or under the banks of streams and ponds. They also seem to have more tolerance for muddy water than most species.

An interesting sidenote: Florida LAKEWATCH (FLW) researchers have found that, in Florida, as plants become more abundant in lakes, warmouth populations seem to expand accordingly. In some areas, where plants were particularly thick, warmouth constituted 40% of a lake’s total fish biomass.

The reverse was also true: as plants become less abundant in a lake, so do warmouth. Additionally, long-term data collected by LAKEWATCH since 1999 show that these fish are quite prevalent throughout Florida: In 1999 and 2000, FLW biologists collected warmouth on 81% of the lakes sampled (21 of 26); in 2001 and 2002, they were collected on 56% of the lakes (18 of 32); and in 2003, warmouth were found in 75% of the lakes sampled (21 of 28).

These fish are solitary nesters that prefer to build their nest adjacent to some type of submerged object. However, nests are found over a wide range of water depths. They often spawn more than once a year usually between April and August. Females may produce 3,000 to 23,000 eggs. There are no recognized subspecies however, they do regularly hybridize with other members of the sunfish family.

Crayfish, shrimp, insects and small fish make up the bulk of a warmouth’s diet. Anglers wanting to target these fish, should fish early in the day, as that’s when they do most of their feeding. (Like many of us, they seem to reserve their night hours for sleeping.)

One of the more popular species of panfish, warmouth will strike a bait aggressively and frequently break the surface of the water during the heat of battle. They can be caught using cane poles and natural baits or on spinning tackle, with small top-water lures and shallow-running spinners. Look for warmouths in shallow water around trees, stumps, or vegetation.

Florida’s general statewide bag limit allows anglers to keep 50 panfish individually or in total, including bluegill, redear sunfish, flier, longear sunfish, mud sunfish, shadow bass, spotted sunfish, warmouth and redbreast sunfish. However, specific bag and size limit regulations may apply in certain lakes, rivers, or Fish Management Areas so be sure to check it out beforehand.

Similar to other panfish, warmouth are relatively small and bony, but tasty. They are usually deep-fried after being rolled in seasoned cornmeal.

Capable of living up to eight years, warmouth may reach a length of 12 inches and a weight of approximately one pound. Florida’s state record warmouth weighed 2 lbs., 7 ounces and was caught in Guess Lake (Yellow River), Florida in 1985.

#### Sources

<http://floridafisheries.com/Fishes/panfish.html>

Handbook of Common Freshwater Fish in Florida Lakes (SP 160)

Mark V. Hoyer and Daniel E. Canfield, Jr.  
University of Florida/Institute of Food and Agricultural Sciences © 1994.

**Common names:**

Flinthead, Wood Ibis, Pond Gannet, Tantale

**W**ood Storks (*Mycteria americana*) are the only stork found commonly in the United States, and are the largest and most distinctive of the wading birds in the country. This is a large bird, 85 - 115 cm (33 - 45 inches) tall, with a wingspan of 150 - 165 cm (59 - 65 inches). Adults are completely white except for wing tips and tail, which are black with a greenish and purplish sheen.

Perhaps the most distinctive feature is the scaly head, which has no feathers and is a silvery gray color in adults (hence the local name "Flinthead"). Its bill is large, black or dark gray, massive, thick at the base and tapering in a gentle D-curve. Legs and feet are dark, with flesh colored or pink (breeding season) toes. The young and sub-adults are similar to adults, but have grayish feathers on the head and neck, and a pale yellow bill that darkens with age. In flight, Wood Storks fly with their legs straight out behind, often alternately flapping and gliding, or soaring with wings held straight out.

Wood Storks have a long breeding period compared to most birds. From the formation of a pair to the fledging of the young may take 110 days. The start of breeding varies with latitude and season, as early as November in south Florida and as late as April in Georgia and South Carolina. Colonies are in areas surrounded by standing water, often in cypress swamps, mangrove swamps, coastal islands, and impoundments. Throughout their range, storks usually breed during the driest parts of the year, when prey are likely to be concentrated in shallow pools and depressions.

Prior to the 1970s, approximately 75% of the Wood Storks in the U.S. nested south of Lake Okeechobee in Florida. Since then, their range has shifted northward into the Carolinas from southern North Carolina through the coastal plain of South Carolina, Georgia, occasionally in Alabama, and throughout peninsular Florida.

It's estimated that breeding populations have declined by over 90% since the 1930s, particularly in south Florida. In the southeastern United States, Wood Storks have been designated as an endangered species since 1984. In Florida, these birds continue to be a rare sight on most lakes. A survey

done by a UF/IFAS biologist some years ago (Hoyer, 1992) found wood storks on only six out of 42 lakes.<sup>1</sup> This year, LAKEWATCH bird surveys reported that Wood Storks were present on seven out of 30 lakes (e.g., Lakes Armistead, Calm, East, Forest, Mango, Pretty, Wilson).

Wood Storks eat mostly fish, but will also take other aquatic organisms including insects, crayfish, shrimp, crabs, amphibians, snakes, small alligators, and occasionally small birds and mammals. In the southeastern U.S., sunfish, catfish, killifish, pickerel, bowfin, and chubsuckers are some of the most common food items. Feeding solitarily or in groups of up to 100 individuals, they frequently are part of flocks that may include other wading birds, such as Great Egrets, Snowy Egrets, White Ibises, etc.

Unlike many wading birds, the Wood Stork finds its food by touch. Walking with its bill partially open in the water, it swings its bill in an arc or probes with it in mud and vegetation. When the bill is stimulated by contact with prey, they are captured with an extremely rapid reflex snap, measured at about 25 milliseconds — one of the fastest reflex actions measured in the animal world. Apparently, vision is not needed for capture, since scientists have found that they can capture prey nearly as well when wearing opaque goggles as when not.

Wood Storks may also use their feet to stir the water, presumably flushing fish and invertebrates towards their open bills. Often they'll flick their wings open and shut, possibly to scare prey towards their bill. While this technique allows them to forage in murky and vegetated conditions, it also requires high concentrations of prey to feed upon. These same foraging habits may also explain why our LAKEWATCH bird data have shown that these birds seem to prefer lake environments with low to a moderate amount of aquatic plants.

**Sources**

**Dr. Peter Frederick's website:**

<http://www.wec.ufl.edu/faculty/FrederickP/stork/about.htm>

**Wood Stork Newsletter, published by the US Fish and Wildlife Service:**

- <http://northflorida.fws.gov/WoodStorks/Documents/WOST0101.pdf>
- <http://northflorida.fws.gov/WoodStorks/Documents/WOST0201.pdf>

<sup>1</sup> Mark V. Hoyer and Daniel E. Canfield, Jr. Bird abundance and species richness on Florida lakes: influence of trophic status, lake morphology, and aquatic macrophytes. *Hydrobiologia* 297/280: 107-119, 1994.



**Wood Storks (*Mycteria americana*)**

Jennifer Donze



# Youth Education Update



Jordan Girard demonstrates the "spider grip" during a training session.



Sara Hanson with a water sample ready for the freezer.



Grayson Hendren and Aaron Chiavini test drive a Secchi disk.



Tabitha Boykin with an algae taco.

Welcome aboard to students and teachers from the Narcoossee Community School in Osceola County. Regional Coordinators Dan Willis and David Watson recently trained dozens of 4th and 5th grade students who will be monitoring East Lake Tohopekaliga in St. Cloud. (See photos above.)

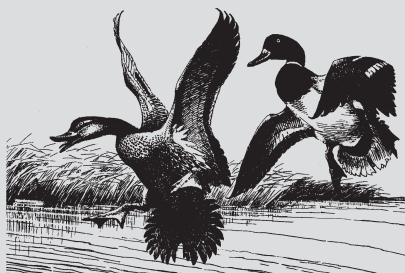
Eagle Eye, Inc. students continue to do great work monitoring Eagle Pond and Lake Lillian in Avon Park. This group of dedicated youngsters are students at Walker Memorial Junior Academy (Highlands County). In addition to water monitoring, they are also involved in studying freshwater benthic communities, lake restoration techniques, and data processing. Many thanks to Gordon Davis, Project Director, for his continued leadership.

Many thanks to Dunnellon Middle School students who are sampling a number of sites on the Rainbow and Withlacoochee Rivers, as part of the PAWS Legacy Project (PAWS is an acronym for Promoting Awesome Watershed Stewardship). Students are working under the guidance of Ms. Sande Haynes and Mr. Joe Acaba.

We'd also like to recognize students at Edgewater High School who are monitoring eleven lakes in Orange County: Adair, Dark, Dot, Estelle East, Estelle West, Formosa, Ivanhoe East, Ivanhoe West, Park, Park 2, and Lake Winyah. Students are working under the guidance of Mr. Mike Lopatka, a science teacher at the high school.

## Many thanks to the Ding Darling Foundation...

for their donation of \$500 to the Fishing For Success program, our UF/IFAS youth aquatic education program. The Foundation was created in honor of Jay Norwood "Ding" Darling (1876-1962), a renowned editorial cartoonist who advocated conservation of our nation's natural resources. Father of the Federal Duck Stamp Program, founder of the National Wildlife Federation, creator of the Cooperative Fish & Wildlife Research Unit Program, "Ding" Darling laid the groundwork for the system of today's National Wildlife Refuges. His editorial cartoons appeared in nearly 150 newspapers nationwide, with near-daily frequency, and earned him two Pulitzer Prizes.



For more information about the foundation, see <http://www.dingdarling.org/>

## Florida LAKEWATCH

This newsletter is generated by the Florida LAKEWATCH program, within UF/IFAS' Department of Fisheries and Aquatic Sciences. Support for the LAKEWATCH program is provided by the Florida Legislature, grants and donations. For more information about LAKEWATCH, to inquire about volunteer training sessions, or to submit materials for inclusion in this publication, write to:

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

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