



The South Florida Aquatic Plant Management Society

The Hydrophyte

Volume 14 Issue 1

1st Quarter 2010

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South Florida Aquatic Plant Management Society

General Meeting Announcement

When: Thursday, January 28, 2010; 8:00am – 1:00pm

**Where: Flamingo Gardens
3750 S. Flamingo Rd
Davie, FL 33330**

Back Meeting Room

Agenda

8:00am – 8:15am	Registration and Refreshments
8:15am – 9:05am	Calibration for Pesticide Application Elroy Timmer - Aquatic Vegetation Control
9:05am – 9:55am	Understanding Plant Biology for Maintenance of Natural Areas Holly Sutter - Allstate Resource Management
9:55am – 10:00am	BREAK
10:00am – 10:50am	Laws and Regulations / NPDES Update Ashok Raichoudhury - Broward County Environmental Protection and Growth Management
10:50am - 11:40am	BMP'S For Protection of Water Resources In Florida Bruce Sharfstein - South Florida Water Management District
11:40am – 12:00pm	Tour of Flamingo Gardens Wetlands and Natural Areas Mike Ruggieri - Director of Wildlife
12:00pm – 1:00pm	Complimentary Lunch Sponsored by Al Suarez / Aquatic Plant Management
1:00pm – 1:30pm	Board of Directors Meeting

C.E.U's will be available for paid members.

Please Don't Forget to Bring Your Membership Card!

Please remember to turn in your membership application for 2010.

President's Message



It brings me great pleasure to begin my term as President of the SFAPMS and to join the ranks of all the talented and accomplished presidents who have preceded me. I have been privileged to witness many dedicated, highly-qualified people serve as president and board members. Each has brought his/her unique talent and knowledge to our organization.

Our industry is important and is becoming more highly specialized with the world's increasing sensitivity to environmental issues. One of my top priorities will be to invite more professionals from the aquatic management and environmental fields to join SFAPMS and to expand the reach of our environmental mission.

I believe that I have the credentials and the motivation to help the SFAPMS become a stronger organization with more active members, enhanced educational programs and exciting events in 2010. I have been involved in the aquatic weed control industry since 1987. I am currently a marketing representative with Allstate Resource Management, which specializes in maintaining the health of lakes, ponds, wetlands, and stormwater systems. I worked on the Greenland ice cap for two years where I witnessed climate change firsthand. My other career experience includes serving in the United State Air Force for seven years and being the owner-operator of various business ventures in the foodservice industry.

Community involvement is important to SFAPMS and has always been a part of my life as well. I am a family man with two children and three grandchildren, and as such, I strive to keep our aquatic systems clean and efficient, our environment healthy and protected and our community vibrant and productive. I enjoy giving back to the community and have served on the Florida Fish and Wildlife Conservation Commission reserves for more than 10 years. I have served non-profit organizations as Vice President of Florida Fishing and Boating Buddies and as a board member for the Youth Environmental Alliance, a youth education and recreation organization

Sincerely,

Joel Wolf
Allstate Resource Management

Officers and Board Members - 2010

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**The Francis E. "Chil" Rossbach
Scholarship Fund**

Funds from the scholarship are used to help defray costs for students taking classes related to the study of aquatic environmental sciences or related areas. The scholarship is open to anyone, and all are encouraged to apply. Applications will be accepted through the year and the scholarship awarded when a suitable candidate is found. Money raised by the Society throughout the year partially goes to fund this scholarship, the intent of which is to promote the study of aquatics. If you are interested in applying for the scholarship, please contact Scholarship Committee Chairperson Mandy D'Andrea 954.382.9766 for an application.

Aquatic Plant Management Inc.

Technician Wanted

Habitat Restoration company seeks qualified professionals. Suitable applicants will possess a pesticide applicator license, have extensive knowledge of herbicides, some mechanical ability, and a clean driving record. Also, it would be helpful to have knowledge of native and non-native plant species. There will be an outstanding pay and benefits package for the right individual - it could be you! Call Al Suarez at (954) 444-1379 to apply.



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www.allstatemanagement.com
afuhrman@allstatemanagement.com

Native Aquatic and Wetland Plants in Florida

THERE ARE MANY THOUSANDS OF SPECIES OF PLANTS in the United States, with more than 4,000 species identified and known to be in Florida. Most plants in Florida are "good" plants--they are native and non-invasive; they have evolved into their own ecological niches. Native plants provide food and shelter to animals of all sorts, stability to shorelines and fields, and visual pleasure to those of us lucky enough to live here.

Because a native plant species usually does not take over an area, there is **biodiversity** - a great number of species growing in balance and living together in harmony. Florida is famous for its biodiversity. There is great diversity because each native species is constrained in its growth by natural factors. Such natural factors include 1) competition with other native species, 2) native diseases, 3) predation by feeding native insects and other animals, 4) climate, 5) water level fluctuation, and so on.

Most plants in Florida's wild areas are native plants, including terrestrial species and aquatic/wetland species. Our state is home to hundreds of native aquatic and wetland plants that live in damp to wet soils, and some even more specialized plants that live entirely in, on, or under water: they include submersed plants, emerged plants (including grasses, sedges and rushes), and floating and floating-leaved plants.

There are many native aquatic grasses, sedges and rushes in Florida. These are the multitudinous plants that look like giant grasses (and some of them are just that), or they look like leafless stems (and some are just that), or they look like Dr. Seuss plants (and some of them *are* remnants of plant groups that were prevalent when the dinosaurs roamed). Unfortunately, there are quite a few non-native invasive grasses, sedges and rushes in Florida. But among Florida's native giant grasses are **sugarcane plume grass** and **giant foxtail**. Shorter grasses, such as maidencane and knot-grass, grow in shallow marshes and lake margins and are extremely valuable to Florida's fisheries. Among the sedges are **sawgrass** (though this, the dominant plant in the Everglades, resembles a grass and is called "sawgrass", it's not a grass), and **star-rush**. Then there are the **bulrushes** and the true rushes of Florida, such as **soft rush**.

The grasses, sedges and rushes produce prodigious quantities of seeds for birds and other animals, substrate for invertebrates and shelter for fish, as well as nesting and padding for birds and alligators.

WHEN "GOOD" PLANTS GO "BAD"

Native plants usually are not as invasive. However, sometimes when a site becomes "disturbed", such as when construction has taken place, a ditch dug, or when natural water level fluctuations have been altered by man-made drainage, pumping systems, or dams, then certain native plants will act invasively. Our native cattails (*Typha* species) are famous for quickly filling in wet areas that have been disturbed or altered. They are often the dominant plant in man-made ponds and ditches. In the Everglades, for example, cattails are crowding out the desirable saw grass, which produces much food and shelter for native Everglades animals. It is believed that man-made alterations in water level fluctuations has somehow given a growth advantage to the cattail over saw grass.

Floating and floating-leaved plants are those that may or may not be anchored to the sediment (they may be rooted to the bottom or may be free-floating), but they all have leaves that float on the water's surface. Florida has a number of native *floating-leaved rooted* plants, but, curiously, Nature gave us very few *free-floating plants* compared to the number of free-floating plants that exist in the world. As for free-floating, Florida's native plants include the world's smallest flowering plant (a duckweed called **water meal**); and two larger duckweeds (**small duckweed** and **giant duckweed**). (The free-floating plant, **water hyacinth**, on the other hand, is a **non-native** invasive plant in Florida and is considered "the worst aquatic weed in the world". It has invaded the waters of many countries from its native Brazil; Among Florida's native floating-leaved plants (that are rooted to the bottom) are the **waterlilies**, **spatterdock**, **American lotus**, and **water shield**.

INVASIVE PLANTS

Unfortunately, almost every place on earth is being invaded by plants from other places. Our coontail is invading South Africa. Sri Lanka's hydrilla is invading here. Our tapegrass is invading Australia. Burma's reed is invading here.

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Why Choose Florida Native Plants?

In a more perfect world, developers and builders would remove the absolute minimum number of plants possible from a building site. This has rarely been done in the past, nor does it seem likely to be done very frequently in the future. Consequently, instead of having a landscape that had developed in situ without attention, pampered nursery-grown plants are brought in to landscape properties that will have been considerably altered from their original state. The question is what kind of plants will be able to survive and thrive in the altered environment with minimal inputs of water, fertilizer and pesticides.

Steve Carroll
Manager

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One answer would be to put back most if not all of the plants that were present on the site before construction. Since construction will most likely have changed the soil composition and drainage as well as light patterns, the plants that thrived before construction may no longer be the best suited for their previous sites. If you are interested in plants that can thrive without a lot of help, however, you will have to carefully select those that can meet such requirements. Plants native to this area of Florida have evolved mechanisms over the centuries that enable them to handle our climate. Hot dry weather in the spring, followed by even hotter wet and humid summers in infertile soils, is a regime that many non-native plants find difficult unless considerable external inputs are employed. In addition, native trees have had to be able to withstand the frequent hurricanes and tropical storms to which Florida is prone.

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It has been argued that while native plants can survive well under undisturbed conditions, the proof for their superior survival under the disturbed conditions of a building site has not been obtained. While rigorous proof for their superior survivability may be lacking, native plants have at least evolved under the difficult Florida climate that alternates drought with flooding, and they have grown in soils with limited fertility under natural rainfall. Plants not native to this area may lack the ability to thrive here without large inputs of water and fertilizer, and may be overly prone to disease. As always, plants should be selected for their ability to thrive on the particular microsite.

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An important attribute of native plants is that they are necessary in maintaining populations of many types of native fauna including birds, butterflies and a wide variety of crucially important insect pollinators. In Britain it has been found that native trees such as oak and hawthorne support several hundred invertebrates. The widely planted imported horse chestnut supports only four invertebrates in Britain, although a hundred or more colonize it in its native Mediterranean area. These invertebrates are food sources for birds and other wildlife, and the replacement of native species with introduced ones can disrupt many food chains. As more land is developed, urban and suburban areas become more important for wildlife.



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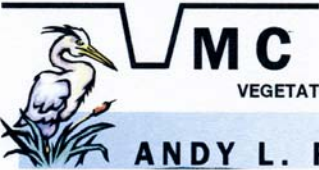
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Why Choose Florida Native Plants?

Continued from Page 6

Another important role for native plants in urban areas is aesthetic and more subjective. We obtain our sense of place in many instances from the flora without even knowing the identity of the plants. One of the ways we know we are in Florida and not in Ohio, other than the absence of winter snow, is the presence of massive live oaks and stately cabbage palms as well as other less well-known plants. Non-native plants have their place in our urban spaces, but surely the almost total replacement of our native flora with exotics is comparable to replacing all of our native birds with species of parrots because we enjoy their colorful plumage.

Provided by Dan Walton



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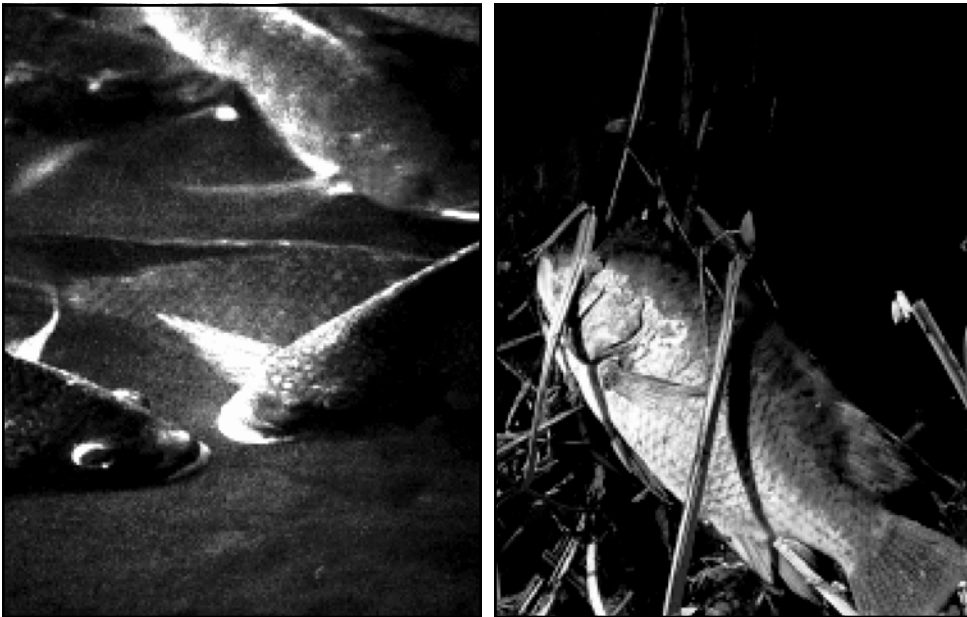
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Freshwater Fish Kills in South Florida - Mortality Due to Cold Temperatures

Fish kills can also be the result of a dramatic drop in air, and consequently, water temperature. This type of event is easily identified because it generally happens after extended periods of cold weather and almost all of the dead fish will be cold intolerant species. In almost every instance, these cold intolerant species are "exotic" fish that have accidentally been introduced to Florida waters. One example is the blue tilapia (*Tilapia aurea*) from Africa's Nile River. This fish was inadvertently introduced into Florida waterbodies in 1961 and is now successfully reproducing in 18 counties. Because they are from a tropical region of the world, blue tilapia don't fare well in cold temperatures; they stop feeding when water temperatures drop to about 60 degrees Fahrenheit and die when it reaches approximately 45 degrees.

Those who worry about the further spread of exotic tropical fish species can take some comfort in knowing that their distribution is often naturally limited by their sensitivity to low temperatures. This natural control mechanism was recently demonstrated at Lake Alice, a small waterbody on the University of Florida campus in Gainesville in North Central Florida. For several years, the lake supported a population of blue tilapia estimated to be around 12,000. However, in early January 2001, a severe cold front passed through Gainesville bringing temperatures that were considerably colder than the tilapia's native African habitat. Within a week, dead tilapia began to float to the surface. By the middle of the month, thousands of these fish had died, while native species survived the cold snap just fine. Several more cold fronts have effectively reduced the tilapia population to almost nothing.



Cold temperature related fish kills are easily identified because they generally occur after extended periods of cold weather and almost all of the dead fish will be cold intolerant species, such as the blue tilapia pictured on the left.

Photos by Joe Richard

Courtesy of Florida Fish and Wildlife Conservation Commission

Impact of Invasive Aquatic Plants on Waterfowl

Studies that evaluate the relationship between waterfowl and aquatic plants (native or nonnative) usually focus on the food habits and feeding ecology of waterfowl. Therefore, the purpose of this chapter is to describe the dynamics of waterfowl feeding in relation to aquatic plants. The habitats used by waterfowl for breeding, wintering and foraging are diverse and change based on the annual life cycle of the waterfowl and seasonal conditions of the habitat. For example, waterfowl require large amounts of protein during migration, nesting and molting and they fulfill this requirement by consuming aquatic invertebrates. A strong relationship exists between high numbers of aquatic invertebrates and diverse aquatic plant communities, so diverse plant communities play an important role in waterfowl health by hosting the invertebrates needed to subsidize waterfowl migration, nesting and molting. After all, waterfowl native to the US have evolved alongside diverse plant communities that are likewise native to the US and utilize these plants to meet their energy needs. Metabolic energy demands of waterfowl are high during the winter months, so waterfowl need foods that are high in carbohydrates such as plant seeds, tubers and rhizomes during winter. Many ducks will sometimes abandon aquatic plant foraging while on their wintering grounds and feed instead on high-energy agricultural crops such as wheat, corn, rice and soybeans.

The nutritional requirements of waterfowl have historically been met in shallow lakes and wetlands where diverse aquatic plant growth is abundant. It is therefore important to understand the interactions between waterfowl and aquatic plants in order to provide quality habitat throughout migration corridors. The abundance and availability of quality habitat with adequate food, cover and water is the most important ecological component affecting waterfowl populations. In order to support waterfowl health, breeding and survival, the maintenance of quality habitats is crucial so that waterfowl have access to foods they prefer instead of having to feed on what is available.

The preferred food habitats and feeding ecology of waterfowl differ based on the group of waterfowl (i.e., dabbling ducks, diving ducks, or geese and swans). For example, dabbling ducks (also called puddle ducks) vary greatly in size and “tip up” during feeding. Their feeding is constrained by how far their necks can reach into the water column (12 to 18”) and depth of the water, so dabbling ducks prefer habitats with shallow water and/or moist soil. Diving ducks typically dive (as their name implies) to feed on benthic organisms such as clams and snails or to forage in sediments for tubers and rhizomes of aquatic plants. Geese and swans are the largest of the waterfowl and typically consume more plant material than dabbling ducks and divers; however, as the availability of natural habitats is diminished, geese and swans have shifted from primarily feeding in wetlands to extensive grazing in agricultural areas.

Courtesy of Ryan M. Wersal

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Too Many Weeds Spoil the Fishing

Exotic invasive aquatic plants such as Hydrilla, Eurasian Watermilfoil, Curlyleaf Pondweed, Water Chestnut and Water Hyacinth can be detrimental to a healthy fishery in lakes across the country. These invasive plants when left unmanaged can alter the ecosystem of lakes and reservoirs, causing a decline in the fishery, as well as interfering with other valued uses of waterbodies.

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Youth Environmental Alliance Impacts Sawgrass Springs Middle School

Students and teachers at Sawgrass Springs Middle School have enjoyed an enriching partnership with the environmental education company known as Youth Environmental Alliance (YEA). Ms. Cindy Davidson brought two ongoing programs to the school. The first was an in-class field trip entitled "Extreme Cuisine Cooking School" that introduced students to the world of cooking and good nutrition. This program focuses on the importance of agriculture and knowing where food comes from.

The second program offered to students was an after-school club called Hooked on Fishing Not On Drugs. The program's award-winning combination of hands-on sports fishing instruction, environmental stewardship, and youth development appealed to students in all 3-grade levels. Students learned to cast and catch fish and to use fishing resources responsibly. Through this 7-week program, student realized that fishing is a positive and fun alternative to drug use and they made a commitment to lead a drug free life. Students went on a fishing outing, received a certificate of program completion as well as a fishing pole.

Cindy Davidson serves as a mentor for the Garden and Natures club students and their sponsors. During this second quarter, YEA constructed and planted a hydroponics lab with Environmental Magnet students. YEA has enriched the lives of many students!

Mrs. Davidson can be reached at 954.382.0188

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