

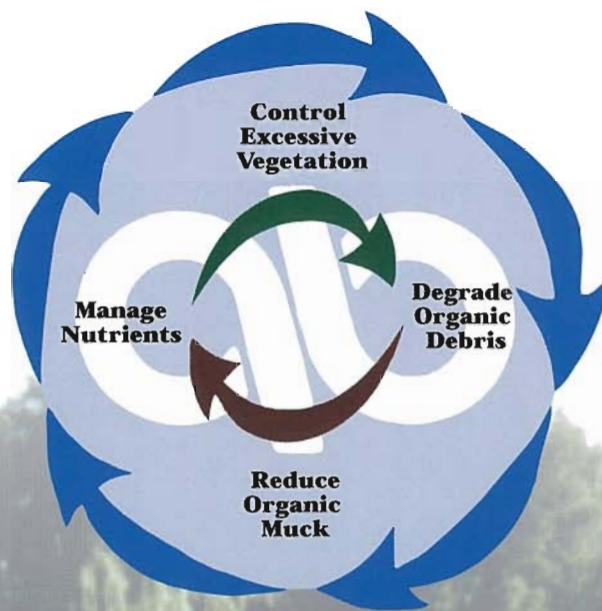
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Editorial

As editor I often receive phone calls and emails from people wanting to know about the weeds growing in their lakes and how to control them. While many of the local chapters of the Aquatic Plant Management Society offer information portals on their web sites, people seem to prefer to email a person questions rather than a computer portal. The more questions I receive, the quicker I must learn to find contact information on the Internet.

I frequently use the Internet to research plant distribution information, herbicide controls, or to review abstracts of scientific journals. In the article "Searching for Aquatic Weed Information: a Quick Guide to the Internet," I summarized my Internet searching results and offer a few tips that hopefully will help you use the Internet faster and more effectively. If you would like to share some of your own Internet searching tips please contact me through my email and we will try to publish them as well.

Hope you enjoy the information.
Editor



**Bill Walker and
Dharmen Setaram
survey a *Rotala
rotundifolia* infestation
in the Charley
Diversion Canal,
East County Water
Control District,
Lehigh Acres,
Florida
Photo by Vernon
Vandiver, Jr.**

Aquatics

Spring 2007 / Vol. 29, No. 1



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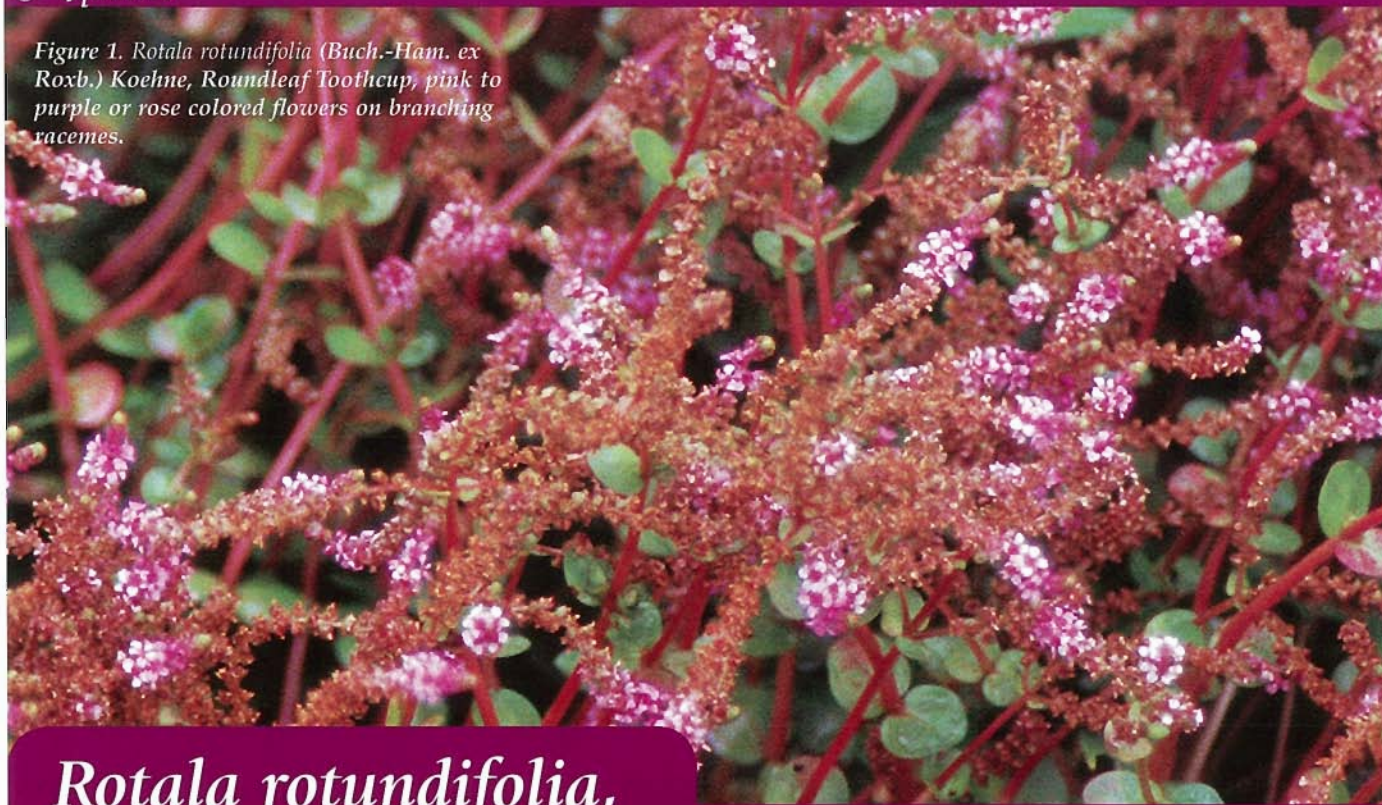
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EDITORIAL: Address all correspondence regarding editorial matter to Jeff Holland, Aquatics Magazine.

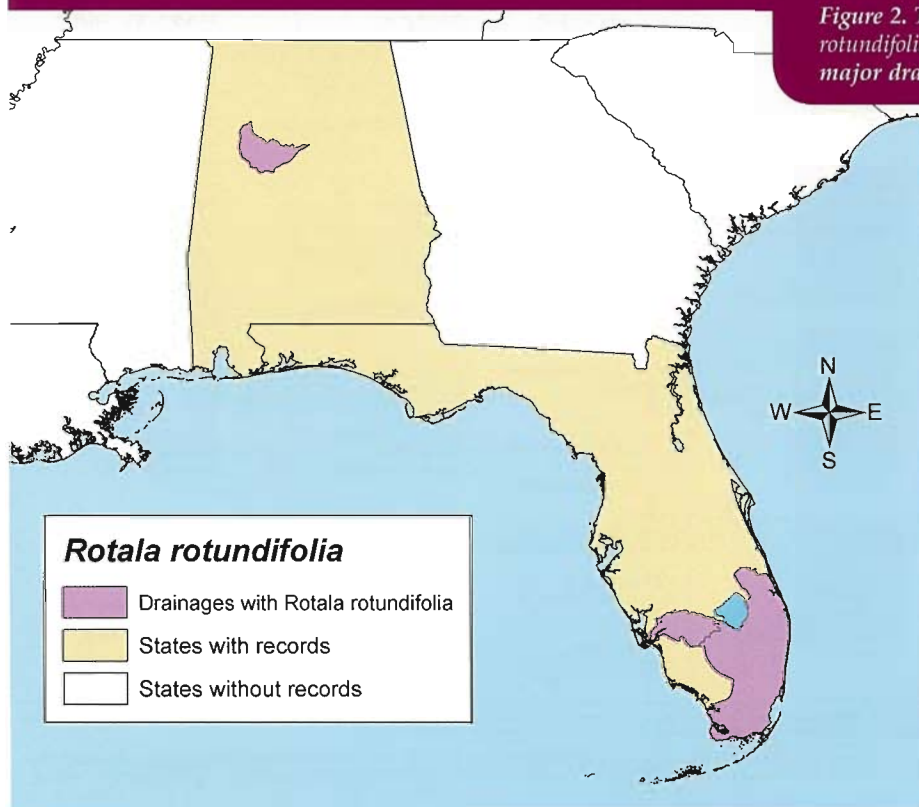
Figure 1. *Rotala rotundifolia* (Buch.-Ham. ex Roxb.) Koelne, Roundleaf Toothcup, pink to purple or rose colored flowers on branching racemes.



Rotala rotundifolia, Purple Loosestrife of the South?

Colette C. Jacono¹ and Vernon V. Vandiver, Jr.²

Figure 2. The North American distribution of *Rotala rotundifolia*, Roundleaf Toothcup, consists of three major drainage regions of Florida and Alabama.



Easy to grow with sprays of pink to purple flowers and lush foliage, *Rotala rotundifolia* may seem a horticulturalist's dream, but, for some resource managers, it has become a high target aquatic weed.

Rotala rotundifolia, Roundleaf Toothcup, is a plant that thrives in warmer temperate climates. It was introduced to the United States for use in aquaria and ponds, yet its native range includes higher elevations in India and Southeast Asia. In water gardens it excels as a transition plant, creeping along pond edges to

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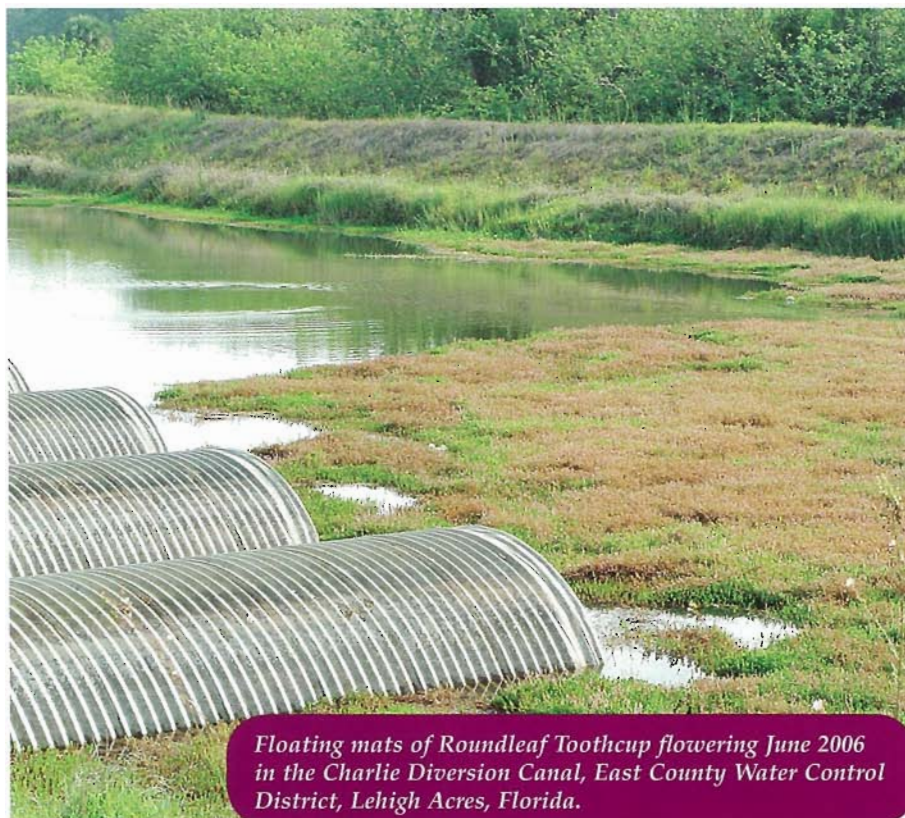
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Floating mats of Roundleaf Toothcup flowering June 2006 in the Charlie Diversion Canal, East County Water Control District, Lehigh Acres, Florida.

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grow under and then up onto the surface of the water. In fact, it is just this ease in transition of growth habit that gives Roundleaf Toothcup an advantage once escaped from the backyard garden pond.

The oldest populations of introduced Roundleaf Toothcup in North America are in Broward County, Coral Springs, Florida. The first plants were found in March 1996 in and along the canal near the intersection of NW 40th St. and Woodside Dr. in the Sunshine Drainage District. In 2001 it appeared in Palm Beach County, in the Indian Trail Improvement District L Canal, and in 2002 in Lee County, in the Able Canal, East County Water Control District, Lehigh Acres, Florida. During 2002 it was also reported from Tuscaloosa, Alabama, where a college professor had watched plants flourish for several years in a campus pond. The Alabama plants died after the pond was drained and left to dry. The infested canals in Florida have responded to less extreme, yet seasonal fluctuations in water levels and Roundleaf Toothcup remains there, well entrenched.

Roundleaf Toothcup belongs to the loosestrife family of flowering plants (Lythraceae). Reminiscent of its cold hardy cousin Purple Loosestrife, *Lythrum salicaria*, Roundleaf Toothcup produces brilliant displays of rose colored flowers in wetland habitats. All plants within the Lythraceae family share a combination of characters which separate them from other plants. All 1) grow as herbs or small shrubs; 2) have leaves arranged opposite each other and etched with pinnate venation; 3) bear flowers with petals that look crumpled in the bud and wrinkled at maturity; and 4) produce fruits in the form of dry capsules which split open to disperse seeds.

Florida is home to native wetland loosestrifes, including *Rotala ramosior*, and several species of *Ammannia*, *Cuphea* and *Lythrum*. All are small-statured plants, mostly with tough, upright stems. Roundleaf Toothcup is easy to distinguish from our native loosestrife members. It has soft stems,



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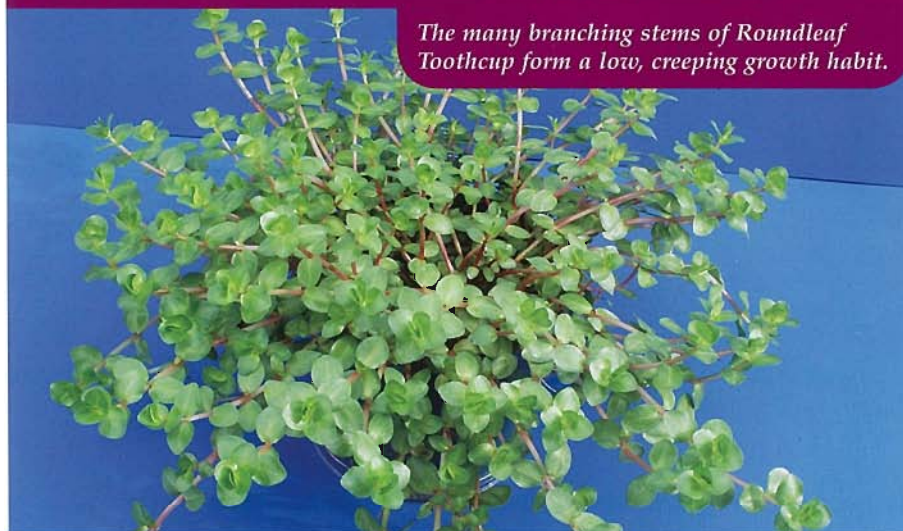
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A seedling of Roundleaf Toothcup emerges bearing the characteristic opposite leaves that are nearly round and attached closely to the pinkish stem.



The many branching stems of Roundleaf Toothcup form a low, creeping growth habit.

which are dark pink, and branch many times to form a low creeping habit. Its leaves are nearly round; you might call them widely ovoid. The leaves attach closely to the stem without a leaf stalk. And finally, its many flowers are born at the tip of the stems, in spikes, called racemes, which have short branches. Of interest is that both soil-rooted and floating plants are prolific flower producers. Often both habits can be found in flower at the same time, during spring and early summer.

Disregarding their beauty, it is important to know if the flowers and subsequent fruit produced by Roundleaf Toothcup make viable seed. In a few past experiences with aquatic introductions, Florida has been somewhat "lucky" in that the introduced material turned out to be reproductively sterile (ie. *Salvinia*) or functionally sterile, such as when only male or female entities have been introduced (ie. Brazilian Elodea, Parrotfeather and dioecious *Hydrilla*). Clearly, Roundleaf Toothcup is spreading by pieces of broken branches, which nimbly root along stem and even raceme nodes.

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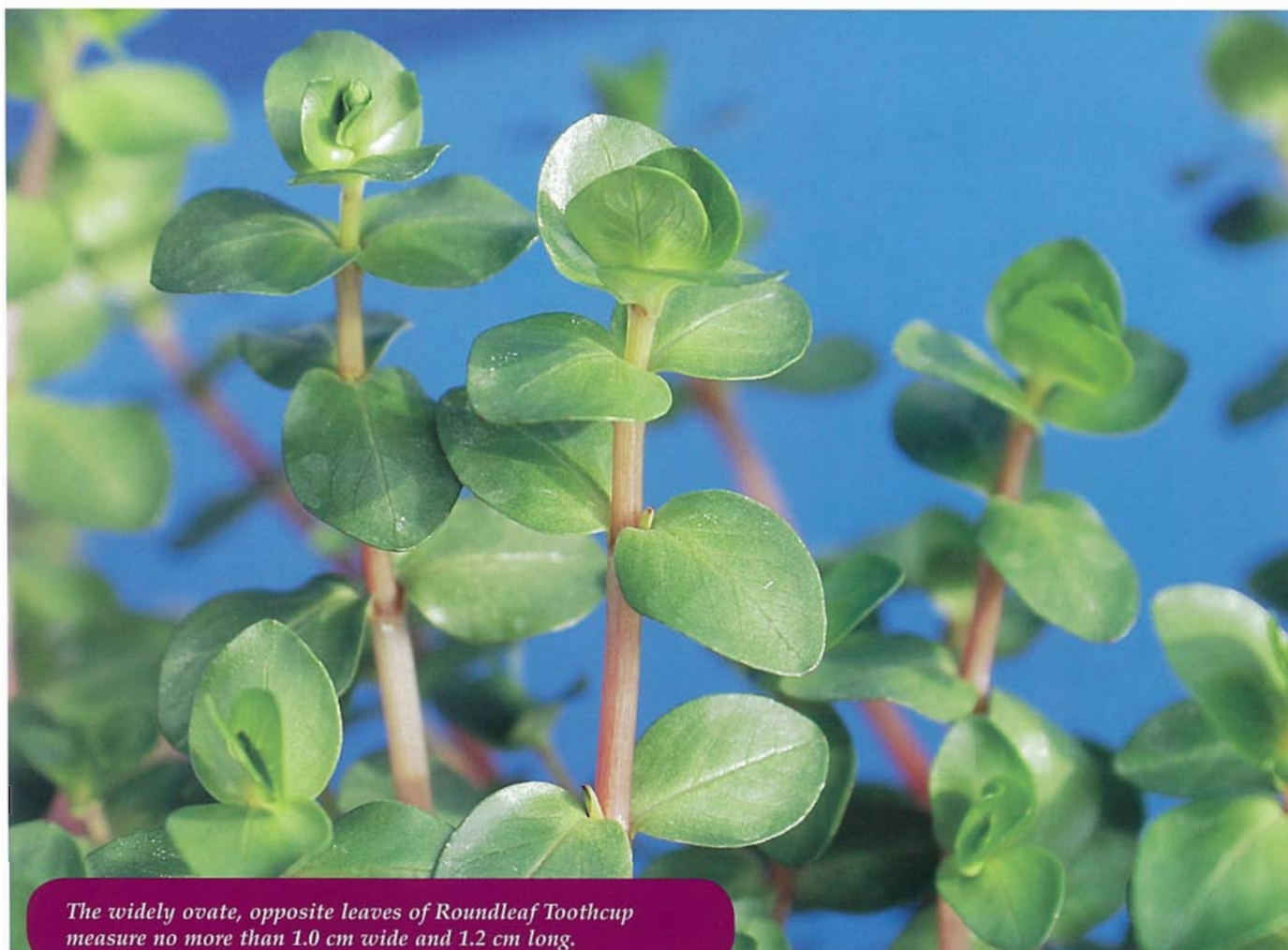
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The widely ovate, opposite leaves of Roundleaf Toothcup measure no more than 1.0 cm wide and 1.2 cm long.

Nevertheless, the possibility of sexual reproduction, through seed, would bring additional ecological advantages to light.

A small study was set up this past June to answer the question of seed viability for at least one population in Florida. Seed heads were collected from Roundleaf Toothcup growing in the Able Canal, East County Water Control District. Fresh seed were stratified (stored in cold, damp conditions for 3 wks) and then sprinkled over 100 celled flats. Duplicate flats were maintained under either well-drained or saturated conditions in Gainesville. Within one month, the seeds began to germinate in the moist, well-drained flats. Average greenhouse temperatures had been 102° F day and 68° F night. While the overall percentage of germination was low, it continued for several weeks. Seedlings were vigorous and

successful in surviving. Germination did not occur, however, in the flats maintained under wet, continuously-saturated conditions.

While the study conditions revealed the presence of viability in seeds, it leaves us with many questions. Would seedlings appear at canals in spring or fall, does a soil seed bank form, and if so, how might that seed bank respond to the dynamics of managed and natural area resources in Florida? The moist, well-drained conditions under which seeds of Roundleaf Toothcup germinated in the greenhouse might simulate canal banks when water levels begin to drop. In that regard, the presence of viable seed likely poses an additional obstacle for resource management.

During herbicide field trials on *Hygrophila polysperma*, East Indian Hygrophila, in cooperation with the

East County Water Control District and Cerexagri, we noted 2,4-D activity on Roundleaf Toothcup.

We then ran a container study in cooperation with Helena Chemical Company that looked at the efficacy of Hardball® on Roundleaf Toothcup. Treatments were made with Hardball® at 2.50, 5.00, and 10.0 gal per acre-foot. At 22 days after treatment, all treatments gave essentially 100 per cent control. The actual values were 96.7, 97.3, and 99.0 per cent control respectively. No above-ground or below-ground plant tissue had survived in the containers in a subsequent rating. As this is rather rapid weed control for 2,4-D, subsequent work may show that, in containers, lower rates of this formulation of 2,4-D may be effective.

Cover photograph by Vernon Vandiver. Other photographs and map by Collette Jacono.

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Cabomba: a Taxonomic and Management Puzzle

Brett Bultemeier¹ and Michael D. Netherland²

Cabomba is a submersed aquatic plant belonging to the family Cabombaceae (Orgaard 1991). There are five species typically recognized for the genus *Cabomba*; however, there are also 3 to 4 varieties that are sometimes identified as separate species (Orgaard 1991). Most species are found in the tropical regions of Latin and South America. The species *Cabomba caroliniana* (hereafter referred to as cabomba) and its varieties are considered native to the Southeastern United States (Orgaard 1991; Tarver and Sanders 1977; Leslie 1986; Mackey 1996). Cabomba growth can become dense in many southern waters, but it is not typically considered to be a major weed or management problem. In Florida, large cabomba infestations are associated with acidic or low alkalinity waters in the panhandle region of the state (Hanlon 1990). Cabomba has recently become invasive and weedy in areas of the Northeast, Midwest, and Northwest United States (Mackey 1996). While the cabomba found growing in northern states has been identified as *Cabomba caroliniana*, these populations often have a different appearance when compared to the same species growing in the southern

United States. Reports from aquatic plant managers in northern states also suggest that cabomba does not respond to traditional chemical control methods.

Plants collected from Florida, Michigan and New Hampshire, and the aquarium trade demonstrate distinct differences in color and morphology (Figure 1). The plants collected in Florida have stems and leaves pink to purple in color and have finely divided thin leaves (Figure 1a). The plants from New Hampshire and Michigan are bright green and tend to have shorter leaves that are less delicately divided (Figure 1b). Cabomba is also sold through the aquarium trade and the specimens we have obtained from these sources have characteristics of both the southern and northern populations. The aquarium plants are green in color similar to those collected in the north, but the stem apex is pink in color similar to the southern population. The leaves are also a blend of characteristics of the northern and southern populations (Figure 1c).

The populations most widely dispersed in the south have the pink coloration, while the invasive populations in the north are green in color. The green cabomba that has colonized the colder climates of the Northeast and Midwest must have developed over-wintering strategies. It has been reported that water temperature causes the color differences

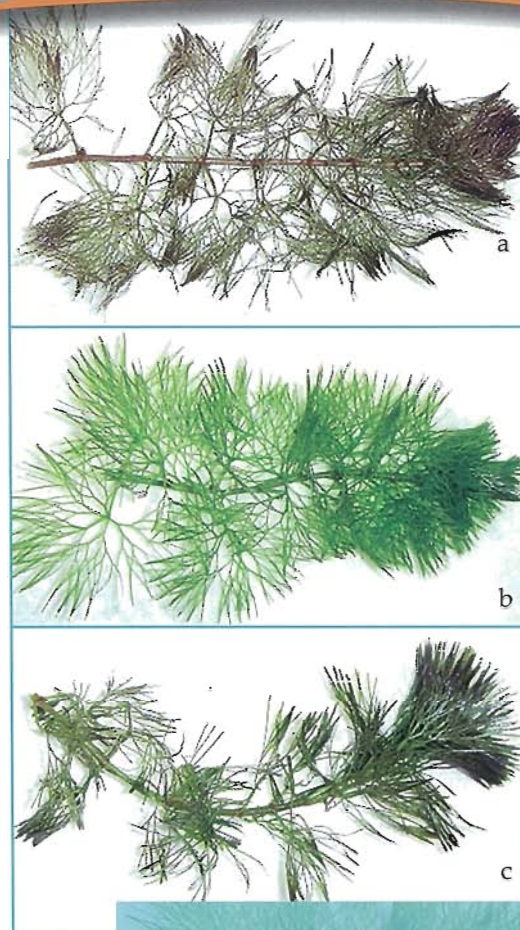


Figure 1: a. Southern *Cabomba* from Florida, b. Northern *Cabomba* from Michigan, c. aquarium *Cabomba* purchased in Florida.

in cabomba, where cold temperatures lead to green color and warm water leads to red/purple color, but the aquarium industry reports the exact opposite (Godfrey and Wooten 1981, Leslie 1986). After exposure to similar outdoor culture conditions for over one year, we observed no change in color or morphology for the northern, southern, and aquarium cabomba. Earlier research conducted in Florida investigated the issue of color differentiation for

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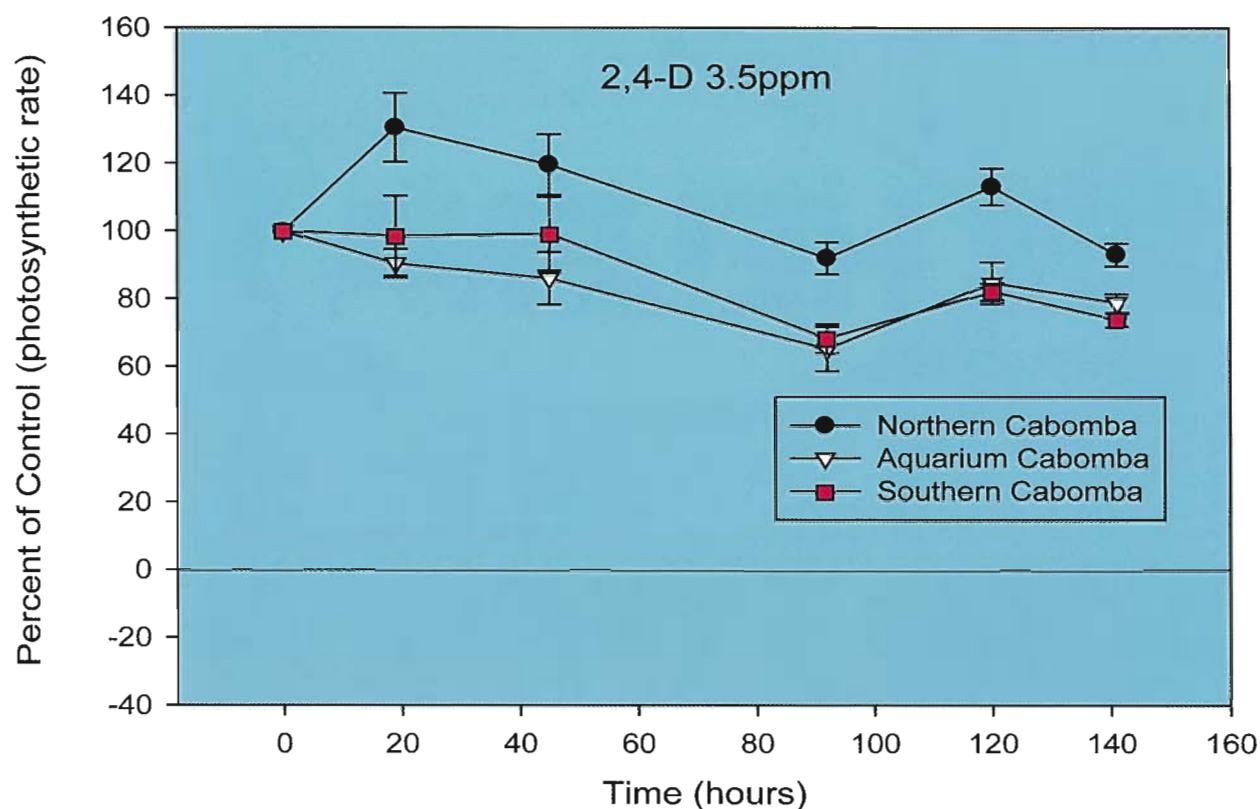
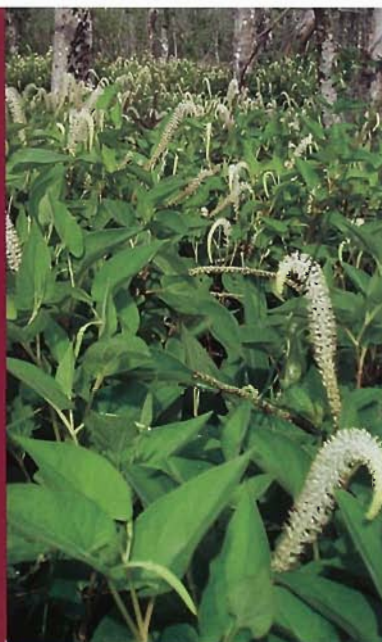


Figure 2. Photosynthetic response of three populations of cabomba to static concentrations of 2,4-D amine at 3.5 ppm. Each bar represents the average of four replicate treatments \pm standard error of the mean.

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three taxa commonly reported in the United States, *Cabomba caroliniana* var. *caroliniana* Gray (fanwort), *C. caroliniana* var. *multipartita* (green fanwort), and *C. pulcherrima* (Harper) Fass. (purple fanwort) (Martin and Wain 1991). Results of genetic evaluations revealed that these taxonomic entities of cabomba were part of a common gene pool and would thus be expected to react similarly to applied programs of biological and chemical control (Wain et al. 1983). As noted earlier cabomba has not typically been a management problem in the southern U.S. and thus the information on control is sparse and incomplete. Nonetheless, there are some managers in the south that have reported increased spread of cabomba as well as diffi-

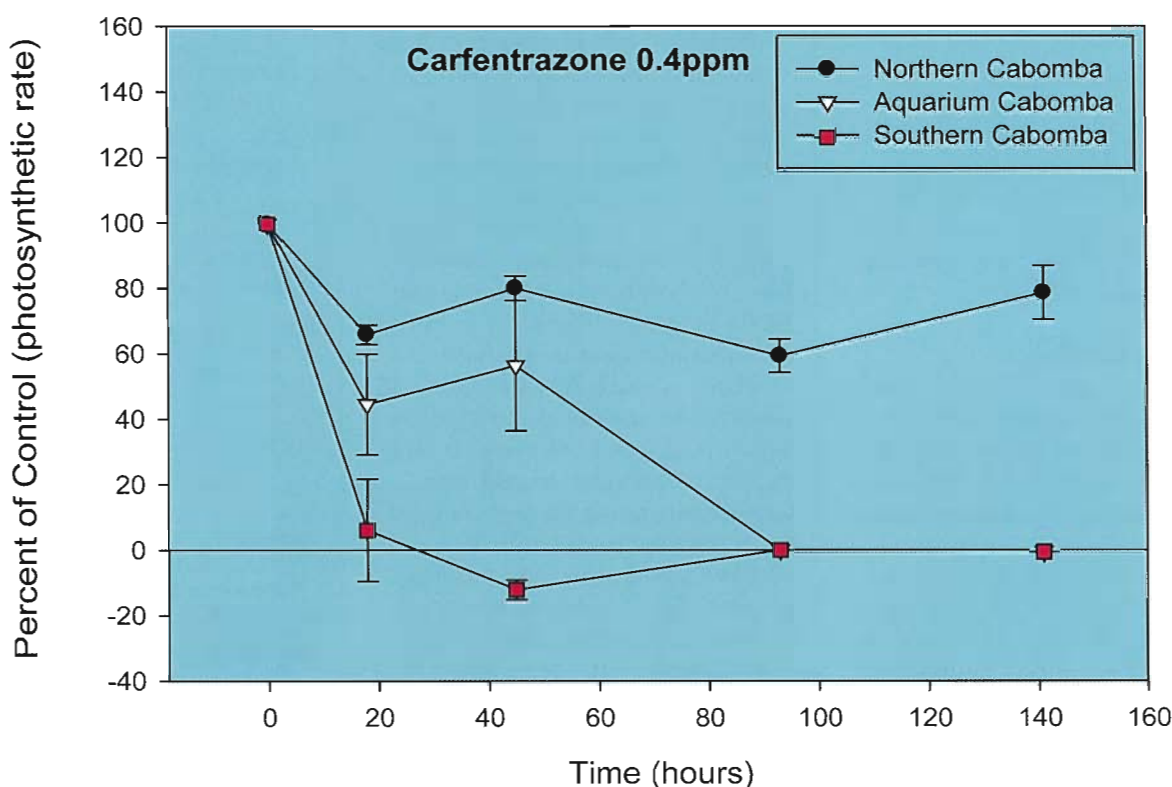


Figure 3. Photosynthetic response of three populations of cabomba to static concentrations of carfentrazone at 0.4 ppm. Each bar represents the average of four replicate treatments \pm standard error of the mean.

culties in managing cabomba.

There is limited published information regarding the response of this plant to aquatic herbicide applications. Nelson et al. (2002) reported that in growth chamber studies fluridone at rates of 5 ppb and greater significantly reduced biomass of specimens collected from the northeastern U.S. when compared to untreated controls. However it is also reported that in the field, fluridone has little to no affect when treating mature plants (Mackey 1996). Many aquatic managers in the Midwest have reported cabomba populations expanding after low-rate fluridone treatments (5-10 ppb) that targeted Eurasian watermilfoil. Fluridone at rates greater than 20 ppb has proven to be the only herbicide that provides consistent control of cabomba; however, factors such as the stage of growth, water exchange characteristics, and use rate affect treatment outcomes.

Cabomba is a dicotyledon and the reported lack of sensitivity to products such as 2,4-D and triclo-

pyr is both unexpected and not well understood. Moreover, the broad-spectrum compound diquat is reported to have minimal activity on northern cabomba when applied at the maximum-labeled use rate. The lack of response to registered aquatic herbicides if of concern as cabomba becomes more prevalent in the northern portions of North America as well as in other countries.

Our research seeks to identify potential physiological differences between these three cabomba populations, and to identify potential control methods for the northern cabomba.

Our initial focus is to identify a quick method for screening all registered and experimental use herbicides for their activity against the three populations of cabomba. While the main objective is to provide recommendations for controlling the invasive northern cabomba, this method can also serve to identify potential differences in response to herbicides between the northern, southern, and aquarium

populations of cabomba. If these cabomba populations respond differently to various herbicides it would suggest a greater difference between these plants than just color and morphology.

Cabomba Screening

The initial herbicide screens and comparisons are being conducted in growth chambers, which allows for consistent environmental conditions to evaluate the response of cabomba to various herbicides. In these studies, apical segments of cabomba are exposed to selected static herbicide concentrations and net photosynthetic rates are recorded over a seven-day period.

All registered aquatic herbicides are included in the screen as well as several compounds that have been granted Experimental Use Permits for aquatic testing. Compounds and treatment concentrations that significantly depress photosynthetic rates to less than 50% of the untreated controls are further evaluated on a larger scale for mesocosm testing.

Screening Results

To date, the data collected from our screening studies confirms field observations on the lack of efficacy for many of the registered aquatic herbicides. Screening efforts also suggest that in some cases there are marked response differences between the three populations of cabomba. The response of cabomba to 2,4-D, a compound typically active on dicots, indicates a general lack of efficacy for this herbicide (Figure 2). A static exposure at 3.5 ppm 2,4-D (4.0 ppm is the maximum label rate) actually stimulated photosynthetic rates in the northern cabomba and the plants doubled in stem length by 48 hours. The fact that treated plants also showed a significant increase in weight over the seven-day exposure indicates a lack of phytotoxicity for 2,4-D. A similar response was noted for triclopyr at the same use rate.

Screening of the protoporphyrinogen oxidase (protox) inhibitor carfentrazone showed that all three collections of cabomba responded differently to this herbicide (Figure 3). The northern cabomba did not show much sensitivity to carfentrazone through the seven-day exposure whereas the southern cabomba was sensitive within 24 hours of treatment. The aquarium cabomba, like its physical features, showed an intermediate response with limited initial sensitivity to carfentrazone, but photosynthesis ultimately decreased as observed in the southern strain. The northern strain of cabomba also showed a high level of sensitivity to the

protox inhibitor flumioxazin (data not shown).

Differences in response of these three cabomba populations to herbicide treatment have been observed for several of the compounds we have screened. The northern strain of cabomba is typically the most tolerant. These results provide evidence that different cabomba populations will likely respond differently to herbicide management in the field.

There is much research that still needs to be conducted to identify potential control methods for the northern cabomba. In addition, further physiological tests should be performed on the northern, southern, and aquarium strains of cabomba to determine how factors such as temperature, pH, light intensity, etc. can impact the growth of the different populations. We also plan to link our physiological research results with genetic work currently being conducted at the University of Guelph (Canada) to more adequately document potential differences in this diverse species.

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Student Paper Contest

The Aquatic Plant Management Society is soliciting student papers for their upcoming 47th Annual Meeting to be held July 15-18, 2007, at the Gaylord Opryland Resort & Convention Center in Nashville, Tennessee. Oral and Poster Presentations of original research on the biology or ecology of aquatic and wetland plants, control methods (biological, chemical, cultural, mechanical) for invasive exotic or nuisance native plant species, and restoration projects involving wetland or aquatic plants are solicited.

The Society encourages students that have conducted original research to present their findings and gain a valuable perspective on aquatic plant problems and various management applications throughout the U.S. The meeting locale in Nashville provides an excellent opportunity for students from much of the eastern US to attend and present research on aquatic plant management in several diverse settings.

The APMS has a strong ethic of student support and all qualified attendees will be provided room accommodations (based on double occupancy) and

waiver of registration fees. In addition, 1st, 2nd, and 3rd place prize money will be awarded in separate contests for both oral and poster presentations. This meeting presents an opportunity for students to develop their presentation skills, learn about the field of aquatic plant management, and meet with key Government, University, Industry

representatives and peers with similar educational and professional interests.

Please log on to www.apms.org to learn more about the Aquatic Plant Management Society and this year's meeting. Students may register for the contest by submitting an abstract as per web site instructions.

For more information about the contest, please contact:
Dr. Mark A. Hellman,
SePRO Research and Technology Campus.
16013 Watson Farm Seed Road,
Whitakers, NC 27891.
E-mail: markh@sepro.com.
(252) 437-3282 x223



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Searching for "Aquatic Weed" Information A Quick Guide to the Internet

When searching for information about aquatic plants consider using the Internet as a first step.

Internet access is typically available for free in most public libraries or can be hooked up in your home for a service fee. If you treat the Internet like a large library with its own card catalog system you'll be able to quickly transition from a brick and mortar library to the computerized version we all call the Internet. The success of Internet searches center on the proper use and sequencing of *key words*. *Key words* are the limited number of specific *words* you use in your search to *key in* on the exact information you are looking for. For example, if you want to know about the distribution of Cattails in Paris Tennessee then you would want to list the words "Cattail", "Paris", "Tennessee", "Distribution", "Map" in a search box to obtain links to web pages that contain maps.

NOTE: Make sure the information you find is from a legitimate source as there are no regulations about the validity of Internet postings.

Federal, state, and local agency web sites are a good place to start your Internet searches as they spend a tremendous amount of resources verifying the accuracy of their web postings for public access. If preliminary data is posted it will be labeled as such with a disclaimer.

When surfing the Internet you will obtain the best results if you only use three to five key words in your searches. By re-arranging the sequence of your key words you

often receive different results, even within the same search engine.

Below are the most recommended search engines for aquatic plant information, but the standard engines like Google™ or

Yahoo® can also be very helpful. All search engines are different so I recommend using multiple engines to obtain the exact information you are seeking.

If you specifically want to search for aquatic plants, then try the two easiest sites: IFAS

Center for Aquatic and Invasive Plants (<http://plants.ifas.ufl.edu>) and the Elec-

tronic Data Information Source (EDIS) <http://edis.ifas.ufl.edu/>.

If you are looking for information about your State's aquatic plant management procedures and activities, then use the links provided by the

National Aquatic Plant Management Society (www.apms.org), the Florida Aquatic Plant Management Society (www.fapms.org),

or one of the agency web sites listed below. Hopefully with these Internet web sites you can find all the information you need on aquatic plants and more.

Center for Aquatic and Invasive Plants home page: <http://plants.ifas.ufl.edu>

EDIS home page: <http://edis.ifas.ufl.edu/>

National Aquatic Plant Management Society home page: www.apms.org

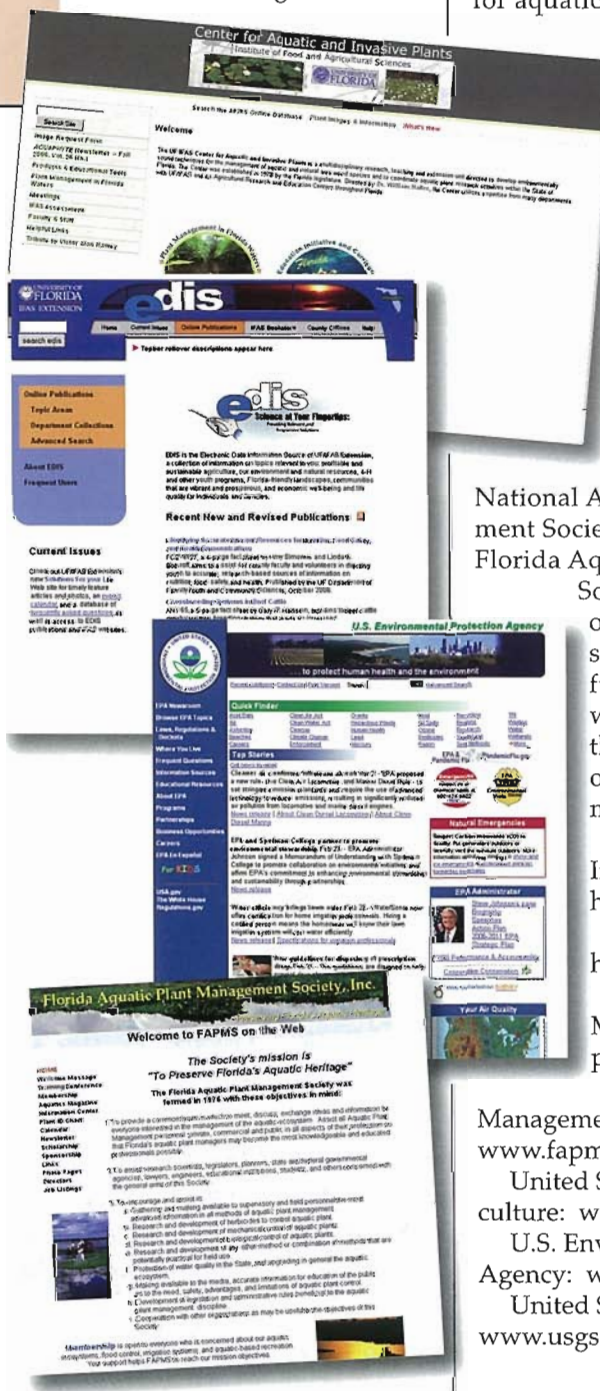
Florida Aquatic Plant Management Society home page: www.fapms.org

United States Department of Agriculture: www.usda.gov

U.S. Environmental Protection Agency: www.epa.gov

United State Geological Survey: www.usgs.gov

Common Internet search box used to find web sites that match a list of key words.



Helpful Tips When Searching the Internet:

- ✓ Narrow down your searches using 3 to 5 key words.
- ✓ Use county or city names in your searches if you want specific local information.
- ✓ Use key words in multiple search engines to increase the variety of results.
- ✓ Be sure the information is from a reputable web site such as a federal, state, or local agency web site.
- ✓ Save web addresses of helpful Internet sites.
- ✓ Share favorite web pages with others to help speed up future searches.
- ✓ Again, double check that the source of the web page is from a legitimate organization or agency as there are no regulations on Internet postings.



Florida Aquatic Plant Management Society Membership Application



Date _____

Name _____

Representing _____

Address _____

City _____ State _____ Zip _____

Phone _____ Fax _____

E-Mail _____

If this is a renewal application, please indicate the year(s) dues are payable for: _____

Membership includes four issues of *Aquatics* and the Newsletter.

Membership Categories and Dues

Active	\$ 35	Associate (Non-Florida	
Student	\$ 5	Resident)	\$ 35

Mail check, payable to FAPMS, to:
FAPMS Treasurer
P.O. Box 560700
Orlando, FL 32168-1327

Calendar

April 1 - 5, 2007
73rd Annual American Mosquito Control Association Conference, Peabody Orlando, Orlando, FL.
www.mosquito.org

April 18 - 20, 2007
Florida Vegetation Management Association Annual Meeting
 Daytona Beach, FL
www.fvma.info/index.html

April 30-May 3, 2007
Florida Exotic Pest Plant Council Annual Symposium
 Cocoa Beach Holiday Inn.
 Cocoa Beach, FL.
www.fleppc.org/

June 4 - 7, 2007
18th Annual FLMS Conference
 Naples, FL
<http://flms.net/index.html>

June 6-9, 2007
4th North American Reservoir Symposium
 Atlanta, GA. Sponsored by the Southern Division AFS Reservoir Committee.
www.sdafs.org/reservoir/symposium/

July 15 - 18, 2007
47th Annual Meeting of the Aquatic Plant Management Society
 Nashville, TN, www.apms.org



AQUAVINE

New Online CEU Courses for 2007

New CEU courses are being offered to pesticide management applicators in need of aquatics, natural areas, right-of-way and other CEU categories in Florida. Biological control and IPM are featured in several courses. A complete list of online courses is available at <http://kgioeli.ifas.ufl.edu> or contact Ken Gioeli for more information.



Course Workbooks

2007 Online CEU Courses Offered

- Aquatic Weed Control Arithmetic
- Brazilian Pepper-tree
- Controlling Old World Climbing Fern
- Aquatic Plant Management
- Pesticides & the Environment
- Pesticide Arithmetic
- Taming Melaleuca

Contact: Ken Gioeli
Extension Agent III / Natural Resources
University of Florida
St Lucie County Cooperative Extension
8400 Picos Road, Ste 101
Fort Pierce, FL 34945
(772) 462-1660
fax (772) 462-1510

4th North American Reservoir Symposium

Hosted by the Southern Division American Fisheries Society (SDAFS)
June 6-9, 2007. Atlanta, GA.

"Balancing Fisheries Management and Water Uses for Impounded River Systems"

Water allocation is one of the leading issues facing fisheries today, and fisheries managers are increasingly required to interact with other professionals including hydrologists, economists, and industry representatives in water conflicts. This symposium will address the challenges of managing reservoir fisheries and habitat in the context of competing water uses. Approximately fifty speakers, representing various state and federal agencies, universities, and private



organizations, have been assembled from across the United States -and globally- to present issues related to the symposium's theme, "Balancing Fisheries Management and

Water Uses for Impounded River Systems." In addition to invited and contributed papers, a poster session and

social will also be held to further discussion of these issues.

Collectively, the symposium and book that follows will provide a valuable resource for reservoir fisheries managers, anglers, and professionals in fields related to water allocation.

For a tentative program and other information about the symposium, including registration and hotel details, visit the symposium's home page at: www.sdafs.org/reservoir/symposium.

For more information, contact Vic DiCenzo at vic.dicenzo@dgif.virginia.gov.

2006 QVM Project Habitat Awards

RESEARCH TRIANGLE PARK, N.C., Feb. 5, 2007

– BASF Professional Vegetation Management is excited to congratulate the winners of the 2006 QVM Project Habitat Awards, announced at the first annual awards banquet on Thursday, January 25, 2007 in Orlando, FL.

The QVM Project Habitat Awards is an annual awards program designed to honor projects that demonstrate the principles and practices of Quality Vegetation Management™ (QVM). Winning programs represented an outstanding commitment to restoring habitat, applying herbicide responsibly and protecting threatened and endangered species.

Winning organizations in each category include:

Forestry - Government or Non-Profit Lands

The Boy Scouts of America with Jeff Neil Timberland Management and Summit Helicopters

Forestry – Non-Industrial Private Landowners

Barnett and Edna King

Utility - Investor owned

Commonwealth Edison Vegetation Management Department

Utility - Cooperative

Duck River Electric with Progressive Solutions and Southeast Woodlands

Roadside

Calhoun County Highway Department (AL)

Invasive Vegetation Management on Private lands

Toledo Manufacturing with Kennedy Timber

Specialty – Other

Fifth Louisiana Levee District

Specialty - University/Educational Research

Purdue University

Invasive Vegetation Management on Government or Non-Profit lands (TIE)

Kidder County Weed Control and Socorro Soil and Water with North Star Helicopters

Aquatic - Government or Non-Profit lands (TIE)

The South Texas Refuges Complex with U.S. Fish and Wildlife and North Star Helicopters and Willapa National Wildlife Refuge with Western Helicopter

Aquatic - Private Land Managers

The Lower Platte Weed Management Area with Chem-Trol

Other participants receiving awards as finalists include:

KAMO Power with Northeastern Rural Services

Duke Energy with Superior Forestry

Cameron County Drainage District No. 5 with North Star Helicopters

Buckeye Electric with Townsend Tree

City of Brownsville with North Star Helicopters

City of Port St. Lucie with Aquatic Vegetation Control South Carolina Department of Natural Resources with Professional Lake Management and Summit Helicopters

Georgia Department of Transportation

Sedgwick County Weed Control with Chem-trol/VMS

Arkansas Valley Electric Coop with Superior Forestry

For more information on the 2007 QVM Project Habitat Awards or QVM, please visit www.vmanswers.com or contact Amie Dunn, BASF Professional Vegetation Management. 919.547.2627.email: amie.dunn@basf.com



30th Annual FAPMS Conference Award Winners

The following awards and recognitions were presented at the 30th Annual Florida Aquatic Plant Management Society training conference held in St. Petersburg, FL. 2006.

Photo Contest Winners:

Best Aquatic Scene: Keith Mangus "Alligator Bellowing at Little Wekiva"

Best Aquatic Operations: Keith Mangus "Snag at Little Wekiva"

Applicator of the Year Nominees

John Pierce, Orange County Environmental Protection Division

Michael Page, Helicopter Applicators Inc

Applicators of the Year Winner

Carl Smith, Chris Mayhew, Wesley Williams, and Danny Copeland, Highlands County Parks and Recreation Department

Applicator Paper Presenters

Stephen Montgomery, Allstate Resource Management

Erin McCarta, Highlands County Parks and Recreation Department

Gary L. Foreman, City of Orlando

James Godfrey, SJRWMD

James Shultz, SJRWMD

Patrick Simmsgeiger, Diversified Waterscapes

Applicator Paper Winners

1st Place Gary Foreman City of Orlando "A Day in the Life of Wetlands Applicator"

2nd Place: Stephen Montgomery Allstate Resource Management

3rd Place: James Godfrey SJRWMD

Presidential Awards

Dr. Joseph C. Joyce
Victor Alan Ramey

The FAPMS Board presented the following active members with:

Honorary Lifetime Membership awards:

Dr. William T. Haller
Andy L. Price, Sr.
Dr. Vernon V. Van Diver, Jr.

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