

The background of the cover is a photograph of a landscape. In the foreground, there is a field of dark, low-lying vegetation, possibly a marsh or wetland, with some green plants. In the middle ground, a large, intense fire is burning, with bright orange and yellow flames rising into the air. The fire appears to be consuming a line of trees or brush. The sky is filled with heavy, grey clouds, with some light breaking through near the horizon where the fire is. The overall mood is dramatic and somewhat somber.

Aquatics

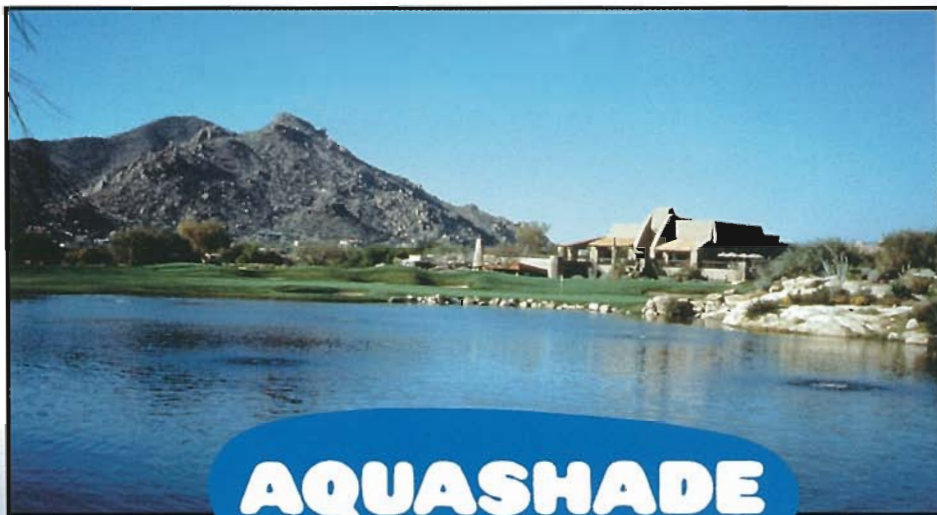
Winter 2000

Bulk Rate
U.S. Postage
PAID
Tallahassee, FL
Permit No. 407

**IF YOU'RE JUST USING A
POND COLORANT, YOU JUST
"BLUE" IT**



**AQUASHADE COLORS WHILE IT
CONTROLS AQUATIC PLANTS.**



AQUASHADE
AQUATIC PLANT GROWTH CONTROL

®

- EPA REGISTERED
- CONCENTRATED - LOW DOSAGE
- LONG - LASTING
- PROVEN EFFECTIVE IN 20+ YEARS OF USE



applied biochemists

a division of Laporte Technologies & Biochem, Inc.

QUALITY PRODUCTS FOR WATER QUALITY

6120 W. Douglas Ave. • Milwaukee, WI 53218 • Dial 1-800-558-5106.

Editorial

A Cool Tip About Floating Plant Management From South Florida

So how do South Florida Water Management District (SFWMD) personnel keep water hyacinth and water lettuce at maintenance control levels (less than 45 acres in 65,000 acres of water) in the Kissimmee Chain of Lakes despite hot sub-tropical weather, and hurricanes? As reported by Dr. Bill Haller, University of Florida, and Mr. Ernie Feller, Senior Manager SFWMD, cool weather management seems to be the secret.

Dr. Haller observes that "trying to stay ahead of hyacinths in the summer is like holding back a flood." In the summer, hyacinth's growth rate is fast and water levels in the lakes are rising. While you are busy trying to keep ahead of hyacinth expansion, high water flushes more from backwater areas, and just "about the time you get ahead, a tropical storm shuts you down for a week."

Ernie Feller and his aquatic plant management crews are out during the cooler fall and winter months on a "daily basis treating exotic plant communities." Specifically, Ernie reports, "we begin in the lake proper managing communities of plants and then expand forward through the littoral zone and then into the canals, creeks, and tributaries that send these plants to us during high lake levels, tropical storms, and hurricanes." Ernie remarks that "at times it seems like you are working harder just finding plants using this technique, but the savings to the environment and the taxpayer are significant."

As a result of these efforts, and efforts by managers statewide, floating plant levels (water hyacinth and water lettuce) are under maintenance control in 99% of Florida's public waters. The 2000 DEP Aquatic Plant Survey reports the lowest acreage (1529) of floating plants in 20 years.

If (?) rain returns next spring, getting ahead of hyacinth expansion this winter will be critical for maintenance control. As Florida's managers have proven time and again, when it comes to invasive plant management, experience, dedication, and commitment really do pay off.

Judy Ludlow

FAPMS Website:
www.homestead.com/fapms/main.html



Fire whirlwind on Lake Miccosukee February 2000 prescribed fire. See page 3 for details. Photo by Matt Phillips.

Aquatics

Winter 2000/Vol. 22, No. 4



Contents

Fire as a Management Tool in Wetlands
by Matt Phillips 4

Azolla pinnata—NOT Cute!
by Kathy Craddock Burks 8

Meeting the Invasive Species Challenge
by Nancy P. Allen 11

The National Bass/Grass Alliance: (an update)
by J.L. Decell 13

FLORIDA AQUATIC PLANT MANAGEMENT SOCIETY

FAPMS OFFICERS AND CHAIRS 2000-2001

President
Nancy Allen
USACE
602 N. Palm Ave.
Palatka, FL 32177
904-328-2737
904-328-1298 Fax
nancy.allen@usace.army.mil

President-Elect
John Rodgers
DEP, Invasive Plant Mgt.
Interstate Business Park
8302 Laurel Fair Circle
Suite 140
Tampa, FL 33610
813-744-6163
813-744-6165 Fax
rodgersj@mail.state.fl.us

Secretary
Todd Olson
Aquatic Vegetation
Control, Inc.
6753 Garden Rd., Suite 109
Riviera Beach, FL 33404
800-327-8745
561-845-5374 Fax
L1J2@aol.com

Treasurer
Steve Weinsier
Allstate Resource
Management
2041 SW 70 Ave. Bldg. D-11
Davie, FL 33317
954-382-9766
954-382-9770 Fax
waterweed@aol.com

Editor
Judy Ludlow
DEP, Invasive Plant Mgt.
3900 Commonwealth Blvd.
Mail Station 705
Tallahassee, FL 32399
850-488-5631
850-488-4922 Fax
judy.ludlow@dep.state.fl.us

Directors
Scott Glasscock (3rd year)
Walt Disney World, Inc.
P.O. Box 1000
Lake Buena Vista, FL 32830
407-824-5485
407-824-7054 Fax
scott_glasscock@wda.disney.com

P.J. Myers (3rd year)
Applied Aquatic, Inc.
P.O. Box 1469
Eagle Lake, FL 33839
863-533-8882
863-534-3322 Fax
pjmyers@gate.net

Dave Sutton (3rd year)
Univ. of FL-IFAS
3205 SW College Ave.
Fl. Lauderdale, FL 33314
954-475-8990
954-475-4125 Fax
dlsutton@ufl.edu

Dean Barber (2nd year)
DEP, Invasive Plant Mgt.
5882 South Semoran Blvd.
Orlando, FL 32822
407-275-4004
407-275-4007 Fax
barber1@mail.state.fl.us

Charles Bedard (2nd year)
SJRWMD
P.O. Box 1429
Palatka, FL 32177
904-329-4269
904-329-4310 Fax
BEDARDzx2@aol.com

David Farr (2nd year)
East Volusia Mosquito Control
801 South Street
New Smyrna Beach, FL 32168
904-424-2929
904-424-2924 Fax
Dfarr@co.volusia.fl.us

Catherine Johnson (1st year)
USACE
5882 S. Semoran Blvd.
Orlando, FL 32822
407-380-2024
407-275-4007
catherine.johnson@usace.army.mil

Mike Baker (1st year)
Lake Worth Drainage District
13081 Military Trail
Delray Beach, FL 33484
561-498-5363
561-495-9694 Fax
Mikebaker@lwwd.net

Bill Moore (1st year)
11512 Lake Katherine Circle
Clermont, FL 34711
352-242-2360
352-242-2359 Fax
williamhmo@aol.com

COMMITTEE CHAIRS

Auditing
Rebecca V. Gubert
407-824-7318
407-824-7309 Fax
rgubert@rcid.dst.fl.us

Awards
Nick Schooley
954-796-6623
954-757-4850 Fax

By-Laws
Stephanie McCarty
407-827-2754
407-827-2774 Fax
stephanie.mccarty@disney.com

Financial
Nancy Allen

Governmental Affairs
Keshav Setaram
407-836-7709
keshav.setaram@co.orange.fl.us

Historical
Catherine Johnson, Co-Chair
Gordon Baker, Co-Chair
561-682-6130
561-682-6130
gbaker@sfwmd.gov

Local Arrangements

David Farr
904-424-2920
904-424-2924 Fax
Dfarr@co.volusia.fl.us

Mailing List Coordinator
Jackie Smith
561-791-4720
561-791-4722 Fax
smithj1@mail.state.fl.us

Merchandising
Jeff Holland
Reedy Creek Improvement
District
RCID Lab
407-824-7324
407-824-7309 Fax
jeff-holland@rcid.dst.fl.us

Nominating
Jeff Schardt
850-488-5631
850-488-4922 Fax
jeff.schardt@dep.state.fl.us

Past Presidents Advisory
Jeff Schardt

Program
Vicky Pontius, Co-Chair
Bruce Burley, Co-Chair
863-402-6812 Vicky
863-699-3710 Bruce
863-402-6754 Fax
vpontius@bcc.co.highlands.fl.us

Publicity
John Rodgers

Resource Demonstration
Christine Bauer
904-542-2717 ext. 119
904-542-3858 Fax
bauerch@nasjax.navy.mil

Scholarship
Brian Nelson
352-796-7211
352-754-6881
brian.nelson@sfwmd.state.fl.us

Vendor
Lonnie Pell
321-455-9833
lonniep@sepro.com

The Florida Aquatic Plant Management Society, Inc. has not tested any of the products advertised or referred to in this publication, nor has it verified any of the statements made in any of the advertisements or articles. The Society does not warrant, expressly or implied, the fitness of any product advertised or the suitability of any advice or statements contained herein.
2000 FAPMS, Inc. All rights reserved. Reproduction in whole or in part without permission is prohibited.
AQUATICS (ISSN 1054-1799): Published quarterly as the official publication of the Florida Aquatic Plant Management Society Registration No. 1,579,647. This publication is intended to keep all interested parties informed on matters as they relate to aquatic plant management particularly in Florida. To become a member of FAPMS and receive the Society newsletter and Aquatics magazine, send \$20.00 plus your mailing address to the Treasurer.
EDITORIAL: Address all correspondence regarding editorial matter to Judy Ludlow Aquatics Magazine.
ADVERTISING INFORMATION CONTACT: Outdoor Tech, Inc., 6791 Proctor Rd., Tallahassee, FL 32308, 850-668-2353



Fire as a Management Tool In Wetlands

Airboat and flame thrower ignition of large compartment burn on Lake Miccosukee, March 2000 prescribed fire. Photo by Charlie Meesing.

by Matt Phillips Dept. of Environmental Protection

Prescribed burning has been used religiously in upland plant communities to restore or maintain various habitats by mimicking the natural effect of fire in the ecosystem. In the wetland environment though, it is rarely used as a management tool. It is ironic that, historically, fire has not only shaped upland plant communities but, under extreme environmental conditions, fire has influenced many wetland communities as well. In wetlands, fire can set back successional processes by consuming organic soils and vegetation. In fact, fire is one of four major environmental events affecting the wetland environment, the others being frost, rain fall, and changes in hydroperiod.

Fire has been used in the last several years to achieve many different goals in the Department of Environmental Protection's Invasive Plant Management Program. Alone or integrated with other management methods, prescribed fire has been an effective and efficient tool. The following is a discussion of several projects where prescribed fire was used to help achieve particular management goals in wetland environments.

Lake Weohyakopka:

Lake Weohyakapka (Walk-In-The-Water) is a 6000 acre lake in central Florida that contained large areas of shallow-water cattail stands and some tussocks. This vegetation was successfully competing with other native vegetation and decreasing areas available for fish to spawn. To prevent the interior wetland from becoming a monotypic cattail stand, and to reduce and reverse the formation of floating tussocks, the sites were treated with a herbicide under the Department of Environmental Protection's Cooperative Aquatic Plant Control Program. As part of the project, the zones that were treated were to be revegetated by the Fish and Wildlife Conservation Commission with more desirable native vegetation to improve fisheries habitat and provide for increased diversity in the littoral zone. Approximately 60 acres of treated cattails were subsequently burned to reduce the standing biomass and prepare the site for planting. The prescribed fires reduced the amount of decaying plant material that the lake would have otherwise received, enabled the site manager to begin replanting, and allowed a diverse assemblage of native plants to become established in a relatively short time.

Lakes Miccosukee And Iamonia:

Due to extraordinary drought conditions in the Florida Panhandle, water levels in Lakes Miccosukee and Iamonia were greatly reduced. These low water levels provided the opportunity to address some vegetation problems that would otherwise be difficult and costly to manage under normal lake conditions. These lakes have experienced a large expansion of tussocks that float around the lake hindering navigation and causing damage to diverse native plant communities. Also, the encroachment of dense woody vegetation into the herbaceous marsh had reduced the diversity of herbaceous vegetation within the marsh.

The Department of Environmental Protection, Bureau of Invasive Plant Management along with the Florida Fish and Wildlife Conservation Commission, Fisheries Division began to look at the possibility of using prescribed fire to reduce the amount of vegetation that was leading to tussock formation and to "top kill" the woody species that were encroaching into the herbaceous marsh. These prescribed fires would also help by exposing more lake bottom to consolidation and drying during the drought period. The local

Too many weeds spoil the fishing.

Selective aquatic weed control with **Aquathol®**.

A heavy weed population can take up as much as one-third of the total water capacity of a lake. Weeds can accelerate silting, destroy fish habitats and cause stunting of many popular game fish.

Weeds are no fun to swim or water ski in either. They can decrease property values, even cause havoc with irrigation and potable water supplies.

While Aquathol kills a broad range of weeds, including hydrilla and pondweed, it does not kill all plants. This selectivity leaves vegetation to provide food and cover for fish. Aquathol leaves no

residues and has shown no adverse effects on marine life.

Get in touch with an aquatic weed specialist, aquatic applicator, or call Elf Atochem at

1-800-438-6071.

elf atochem
ATO





Reflection Clean! **Get it with Avast!**[™]

BRAND FLURIDONE

For water this clean, count on new Avast! brand fluridone to keep out undesirable aquatic plant growth. Avast! poses no threat to fish, waterfowl and desirable plant species, while at the same time posing no inconvenience to recreational use. Easy to apply to virtually all fresh water bodies, Avast! provides excellent residual control of hydrilla and Eurasian watermilfoil, plus other undesirable species, for up to 12 months. This slow residual allows desirable growth to be reestablished without oxygen deprivation or fish kill. It also makes Avast! an essential tool in waterfowl management and habitat restoration programs. Avast! is now available in a liquid formulation with four pounds of fluridone per gallon. See your dealer, or call Griffin at 1-800-237-1854.



No threat to waterfowl



No threat to fish



No restrictions
on recreational use



**Helps nature
take its course.**

Griffin. Griffin L.L.C.
Valdosta, GA 31601
www.griffinllc.com

community also expressed a concern that the large amount of dry vegetation posed a fire hazard to residents, and that burning the vegetation under "controlled" or "prescribed" conditions would be more desirable than the potential of a "wild fire."

Due to the complexity of the proposed burn locations, the Division of Forestry as well as Tall Timbers Research Station were contacted to help plan and conduct the prescribed fires in these wetland environments. The experience and expertise provided by both organizations was critical to the successful completion of the projects. Each participated not only in the planning, but provided staff and equipment during the burns that proved essential to the timely completion of the projects. Probably the most important factors to having a successful prescribed burn are open communication and an experienced burn crew. Without the coordination and cooperation of all the above listed organizations along with local government and citizen support these two lake projects would never have been completed.

Using prescribed fire in these areas required much planning and site preparation. A key component was getting stakeholder comment and regulatory review of the projects and obtaining the necessary permits to prepare the sites and conduct the burn. For large and complex burns of this sort, it is recommended that all interested parties meet to ensure all issues concerning the burn are addressed before the burn plan is written and executed.

An issue regarding these burns was the fact that there was various amounts of organic, or muck, sediments on the lake bottom. There was an expressed concern that these muck soils might ignite causing a smoke hazard around the roadways adjacent to the project sites. Muck fires are often difficult to suppress and produce a lot of smoke that may pose a problem for days or even weeks. To address these concerns and reduce the potential for muck fires, soil moisture data were col-



Pre-burn coordination meeting, Lake Miccosukee December 1999. Photo by Jess VanDyke

lected around the burn plots to provide information on soil conditions prior to burning.

The burns were begun in the winter of 2000 once all the appropriate permits and authorizations were obtained and when the desired weather conditions required by the plan were present. Due to resource limitations and deteriorating environmental conditions the window of opportunity quickly closed, and the last burn was completed on April 15, 2000. In all, about 2000 acres was burned on Lake Miccosukee and a little under 400 acres was burned on Lake Iamonia without any major incidence or problems. These sites are presently being monitored to assess the short term and long term impact on the plant community and to assess how well the goals of the projects were met.

Summary

Prescribed fire has been used in many areas of the state to achieve management objectives within the wetland or aquatic environment under both inundated and dry con-



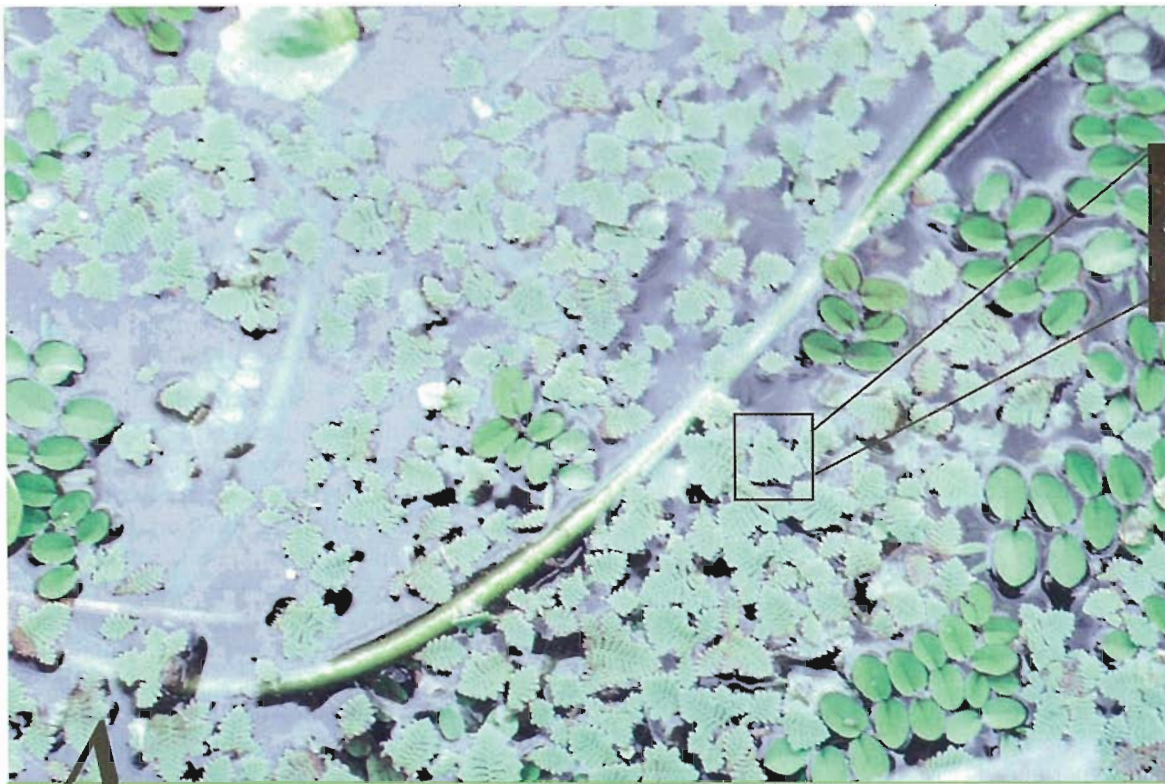
Lake Iamonia April 2000 prescribed fire. Photo by Matt Phillips.

ditions. It can be used as a primary management tool or it can be integrated with other management methods to meet a variety of goals. Fire is a volatile tool and requires extensive planning and a highly experienced crew to apply. Extreme care should be exercised when using this tool to control vegetation over soils with high organic content to prevent muck fires. Considering all the public and regulatory concerns regarding the use of fire, it only takes one mistake to loose the use of fire as a tool to manage wetland environments. With proper planning and application fire can be a safe and useful tool helping aquatic plant managers achieve their objectives in an economically and environmentally efficient manner.

Acknowledgements

These projects are truly unique and require the help of many people and organizations. I thank all of the persons and agencies that helped make these projects a success, especially: Bill Wheeler, Bill Peters and staff at the Division of Forestry; Lane Green, Vince Carver and staff at Tall Timbers; Charlie Messing, Dave Eggeman and staff at the Fish and Wildlife Conservation Commission as well as Jess Van Dyke, Bill Caton, Rob Kipker, and Joe Hinkle from the Department of Environmental Protection. Also, the support provided by Polk, Jefferson, and Leon Counties, and local residents is greatly appreciated. A special thanks to DEP's Judy Ludlow for providing consistent motivation to share this information in *Aquatics*.

References available on request.



The “little Christmas tree” you don’t want this holiday, or anytime—*Azolla pinnata*
 Photo by Bill Haller

Azolla pinnata—NOT cute!

**Kathy Craddock Burks,
 Bureau of Invasive Plant
 Management,
 Florida Department of
 Environmental Protection**

As you can see by the pictures, *Azolla pinnata* is, well, almost “cute.” Don’t be taken in, however, by that charming decorative look!

Feathered mosquito fern, *Azolla pinnata*, occurs in tropical and subtropical regions of the Eastern Hemisphere, from Africa to Australia. It has been cultivated for centuries in rice fields of Southeast Asia and southern China, where it acts as a fertilizer after it decomposes. Within its current Old World range, it’s considered a weed in seven countries, with designation as a “principal” or “common” weed in India, Thailand, and the Philippines. And in the United States, it’s a Federal Noxious Weed—for good reason.

Also known as water velvet, this small floating aquatic plant can easily blanket the surface of a waterbody in a relatively short time under the right conditions. All it apparently needs is still or slow-moving waters, mild temperatures, and a lack of its usual insect herbivores. For vegetative reproduction, its preferred temperature range is 15-30° C, or 59-86° F, but it can survive higher temperatures (to about 33° C, or 92° F), and lower ones (as low as -5° C, or 23° F). It obtains nitrogen internally via a symbiotic relationship with the blue-green alga (*Anabaena azollae*) harbored in its leaves, and the fern’s growth is quickly enhanced by the presence of phosphorus. Sounds like Florida might offer the perfect setting, doesn’t it?

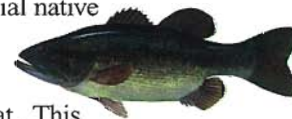
Just in the past year, this plant has turned up in the United States, as an incidental in nursery cultivation at scattered locations, including one spot in Florida. Last spring it

was seen by a Bureau regional biologist in a few birdbaths at a nursery in the Stuart area. Once the identity was confirmed, this small introduction was destroyed by the nursery in cooperation with federal and state noxious weed staff. In North Carolina last fall, the fern turned up floating with some waterhyacinths in a wetland nursery tank in the Raleigh area. That small population has also been destroyed, and a few more occurrences in cultivation have since been discovered and eliminated in Tennessee and Indiana.

To distinguish this exotic weed from our common native mosquito fern, *Azolla caroliniana*, look closely at the overall shape of a mature floating plant. The exotic’s shape is usually deltoid, or triangular, like a little fir tree in silhouette, or like a feather. The shape derives from the plant’s pinnate-type branching pattern, a distinctive feature among the six or seven *Azolla* species

Control & Release

Every bass angler worth his salt recognizes and appreciates the value of structure. Aquatic vegetation plays an important role in providing structure for fish and wildlife. But exotic invasive plants like hydrilla and Eurasian watermilfoil crowd out the more beneficial native plants, thus disrupting a diverse habitat. This mixture or balance of plants and structure can improve both the number and quality of fish.



Let the exotic plants go uncontrolled and the balance is lost. Everyone from anglers to sport fish and native plants suffers from their choke hold.

Sonar* Aquatic Herbicide can be professionally applied to selectively control these exotic threats and "release" plants like eel grass, maidencane and pondweed to grow again. Managing for native aquatic plants is the objective with Sonar.

Call your state conservation biologist or a SePRO Aquatic Specialist for more information on how to "control exotics and release native vegetation."



For experienced, professional help with the restoration of your water body, contact a SePRO Preferred Applicator. Call SePRO at 1-800-419-7779 and we will provide you with a list of the finest aquatic professionals in your area.

**Call today,
1-800-419-7779**

For a free brochure on how you can restore your favorite fishing spot, call or clip this coupon and mail or fax to the address below.

Name _____
Address _____
City _____ State _____ Zip _____
Daytime phone _____
Pond _____ Lake _____ Size in acres _____



SePRO Corporation, 11550 N. Meridian Street, Carmel, IN 46032-4565 Fax: 317-580-8290. Or visit our website: www.sepro.com

*Sonar is a registered trademark of the SePRO Corporation. Please read and follow all label directions. Before treating aquatic weeds, always check and follow state regulations.

Sonar*
Restores Aquatic Habitats.

known worldwide. Our native species has a subdichotomous branching pattern; that is, two nearly equal branches arise from each growth point. This pattern makes the overall shape of a mature plant irregular, not nicely geometric.

You can also look at the plant's roots as they float in a bit of clear water. For *Azolla pinnata*, you would see that each root has many extremely fine lateral branches, making the roots appear feathery. The native species has lateral root branches, but they are sparse and harder to see.

If you have a good hand lens, you can look, too, at the top surface of the leaflets: On our Carolina mosquito fern, there are minute clear bumps (papillae) toward the middle of the leaflet. Water velvet has these bumps not only on the leaflets but also on the delicate stem between the leaves.

Plants of water velvet are often described as much larger in

size when compared to Carolina mosquito fern. However, this character can vary a lot depending on the local growing environment.

The color of mature plants can be a clue as well, but don't count on this aspect to be a clinching feature. Generally, *Azolla pinnata* plants are a lighter green than plants of *Azolla caroliniana*. Both, however, can be affected in color by local conditions. Both may turn reddish-brown, for instance, under the stress of ambient temperatures too high or too low, light too bright, and/or nutrients too low.

Keep your eye out for this little tree-shaped "ornament" in water gardens, aquatic plant nurseries, ponds, canals, and any other pool of water, small or large. To confirm the identity of a suspicious-looking mosquito fern, contact the Bureau's regional biologist nearest you, or the Tallahassee office, 850-487-2600 (SunCom 277-2600).

IT PAYS TO ADVERTISE!

- *Aquatics* is circulated to approximately 2000 environmental managers, landscape managers, governmental resource managers, and commercial applicators.
- *Aquatics* is a resource for the people who buy and use aquatic products and services.
- Compared to other magazines, advertising in *Aquatics* is a profitable investment.
- Your advertisement not only provides the reader pertinent information, but your support helps maintain the quality of this publication.

Please call Outdoor Tech at 850-668-2353, and ask Debra for more information. Thank you for your interest.



- Container recycling
- OSHA Training
- Site Safety Inspections
- SARA Title 3 Assistance
- Delivery

A COMPLETE LINE OF AQUATIC WEED CONTROL PRODUCTS IN STOCK FOR IMMEDIATE DELIVERY

For more information contact one of our ten UHS/UAP Florida locations.

Or contact our corporate office at:

410 S. Ware Boulevard, Suite 800

Tampa, Florida 33619

Phone: (800) 457-0415

Fax: (813) 664-0371

Working To Enhance Our World

Meeting the Invasive Species Challenge

by Nancy P. Allen,
US Army Corps of
Engineers

In February 1999, President Clinton issued Executive Order 13112 and established the National Invasive Species Council which is chaired by the Secretaries of Agriculture, Commerce and the Interior; and includes representatives from the Departments of State, Treasury, Defense, Transportation and the Environmental Protection Agency. The Order requires that the Council prepare a plan to minimize the economic and ecological impacts and the harm to animals and human health associated with invasive species. This document is the first National Invasive Species Management Plan and can be viewed and commented on at www.invasivespecies.gov.

An "Invasive species" is defined in the Executive Order and Management Plan, as a species that is both non-native (or alien) to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm, or harm to human health. Reportedly 50,000 non-native species have been introduced into the United States (Pimentel et al., 2000). The Office of Technology Assessment estimates that 10 to 15 percent of introduced species will be invasive (U.S. Congress, OTA 1993). Invasive plants are estimated to cover 100 million acres in the United States. They are spreading every year across three million addi-

tional acres, an area twice the size of Delaware. Every day, up to 4,600 acres of public natural areas are negatively impacted by invasive species (USDA Forest Service 1998).

Invasive species can take a heavy economic toll. Researchers at Cornell University estimate that invasive species are costing Americans an estimated \$137 billion every year (Pimentel et al. 2000). The environmental costs of invasive species can also be dramatic. They may affect native species through predation or competition for prey or space. They may introduce pathogens or parasites that affect plants, animals, or humans. When closely related introduced species cross-breed with native species, there may be harmful genetic impacts. Invasive species have also dramatically altered habitats.

The National Invasive Species Management Plan presents areas that the Council considers high priorities in addressing invasive species problems and recommends the following key action areas: leadership and coordination, prevention, early detection and rapid response, control and management, restoration, international cooperation, re-

search, information management, education and public outreach. Below is a summary of four of the key action areas.

Leadership and Coordination: More than 20 Federal agencies now share responsibility and authority over some facet of invasive species management, along with various agencies of all 50 states and territories. Coordination problems between federal agencies and state and local partners often impede effective invasive species management programs. **Response:** The Council will establish an oversight policy to ensure that the Order is effectively implemented and that procedures are in place to resolve jurisdictional, and other, disputes regarding invasive species issues. The goal will be to resolve disputes at the least formal level possible in an unbiased manner involving only those parties with an interest in the dispute. The Council will also coordinate a crosscut budget initiative involving all Council Departments, and highlight the needs assessed by Federal agencies to address invasive species.

Prevention: The most cost-effective approach to combating invasive species is to keep them from becoming established in the first place. **Response:** In conjunction with industry, interested parties, and members of the public, the Departments of the Interior, Agriculture, and Commerce and the Environmental Protection Agency will develop and test a risk assessment screening system



Hydrilla jam on the Myakka River, Florida, photo courtesy of DEP.

to evaluate introduced species. In addition, the above mentioned agencies will identify the pathways by which invasive species move, rank them according to potential for ecological and economical impacts, and develop mechanisms to reduce movement of invasive species.

Early Detection and Rapid Response: When prevention fails, invasive species must be detected and controlled before they become well established. Resources for early detection and rapid response have not kept pace with the increasing number of invasive species arriving in this country. Response: The Council will act to speed detection of invasive species by seeking legislative authority for a multi-year, flexible funding source for agencies responding to alien species invasions.

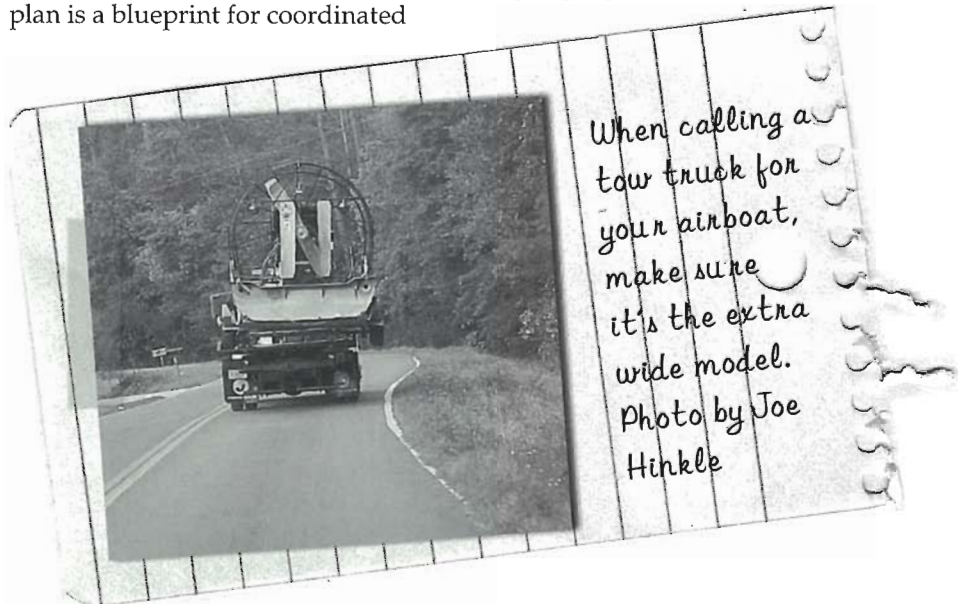
Control and Management: Reducing established invasive species populations and limiting their spread could dramatically decrease the associated economic and ecological impacts they cause. Improved federal land stewardship can provide a model for controlling the spread of invasive species to neighboring lands and waters. However, state and privately owned lands comprise most of the United States, and successful control strategies will require additional personnel and financial resources for federal, state and local partnerships. Response: Council members will seek additional resources to significantly enhance control and management of invasive species, especially on federal lands. The Departments of Agriculture and the Interior will propose legislation to assist states in managing invasive species, provide incentives for voluntary actions by private landowners, and will coordinate with states and stakeholder groups to determine control priorities.

Summary

The National Invasive Species

Management Plan reflects the widespread view that a well-coordinated federal effort, working with states, affected parties, and international partners, can improve the extensive but fragmented invasive species management programs that currently exist. This plan is a blueprint for coordinated

Federal action. The key, however, is how well and expeditiously the plan can be implemented. The Plan is meant to be a living document that will be revised and improved over time through public involvement, partnerships, and careful monitoring of progress.



How to increase herbicide efficiency.

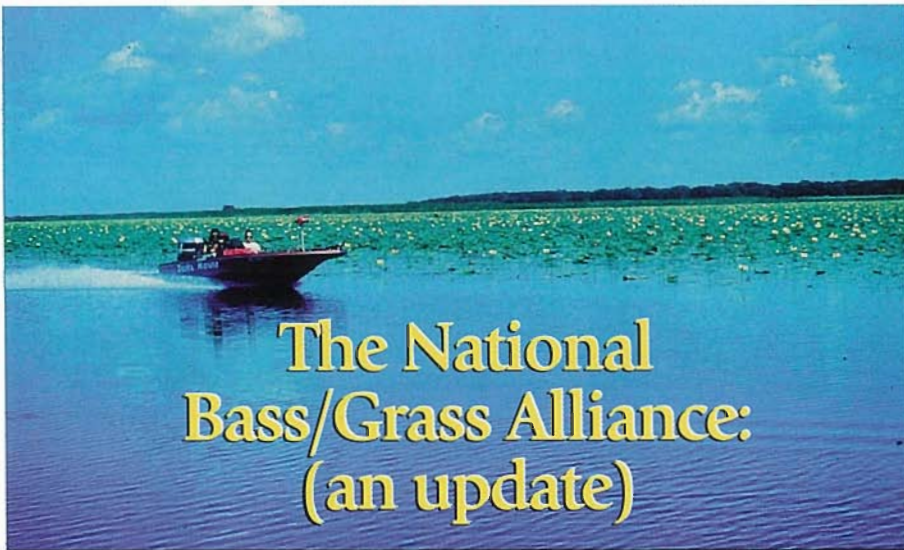
Increasing herbicide efficiency is as easy as adding Cygnet Plus to your aquatic spray mix. Cygnet Plus helps break down the waxy cuticle on leaf surfaces and helps penetrate the bud and bark (woody brush) for more effective uptake of the herbicide. The result? Better control of unwanted aquatic species.

Cygnet Plus give better wetting and penetration because of the methylation process used in its formulation. And it's tested by the University of Florida Center for Aquatic Plants. Increase herbicide efficiency in every aquatic herbicide mix – order Cygnet Plus today.

800-228-1833

 **BREWER
International**

P.O. BOX 6006 • VERO BEACH, FL 32961 • FAX: 561-778-2490 • WWW.BREWERINT.COM



The National Bass/Grass Alliance: (an update)

by J.L. Decell, President,
NBGA

Ogden Nash said "It Ain't the things we don't know that gets us in trouble - it's the things we do know - that ain't so!" In the business of Aquatic Plant Management (APM), this is all too often the case. All of us, who use and value the aquatic resources of our Nation, have an opinion as to how these resources should be managed. In almost every case where controversy arises, the majority of the users did not know how to effectively influence the decision process that results in how things are done. Consequently, they can only react after the fact - instead of being able to positively influence what will be done - before the fact!

Ironically, over the past 20 years, many of these controversies have resulted in Aquatic Plant Management practices making significant progress in reflecting stakeholder's desires in management practices. Today, most APM state-level programs are based on the best scientific evidence available. However, controversy, and misinformation often obscures this fact.

Most of the water bodies with significant aquatic plant problems serve multiple purposes. For each of these purposes, there is a stakeholder group, each of which has a

particular interest in how the water body is managed. Usually the particular interests of the various stakeholders create conflicts for managers trying to control the aquatic plant problems.

No stakeholder group has been more vocal, and critical of APM practices than bass fishermen. Bass fishing has grown to a \$68 billion dollar industry during the past 30 years. The fishermen are organized and want to have a say-so in the management of aquatic plants. Aquatic plants, whether native or exotic, provide habitat for fisheries. Unfortunately, exotics quickly spread to a level that is detrimental to the fisheries. In addition to the relationship to fisheries - aquatic plants are also related to fishing. When fishermen can see the edge of aquatic plant structure, it provides a visual reference - one that "says" - there's probably fish there! Without that reference, many bass fishermen have to work harder to catch the same number of fish.

So it's not unusual that when and APM program conducts control programs to prevent the exotics from becoming detrimental - the bass fishermen react! Many of these fishermen, as well as other stakeholders, are basing their disagreement on misinformation - or simply knowing something that "ain't so!" Controversy usually develops, and the mis-

information, like a rumor, is as hard to un-spread as butter!

In 1999, 28 stakeholders met in Atlanta, GA to discuss the issues and map out a direction that would result in fishermen having a more positive, productive input to the APM decision process.

The result of the meeting identified steps to (1) Establishing a National organization, (2) Planning a National Symposium, and (3) Increasing Congressional and Public Awareness.

On January 5, 2000 the National Bass/Grass Alliance was established as a non-profit foundation. The vision of the NBGA is to "Have stakeholders working together to maintain quality fisheries habitat, while managing aquatic vegetation for multiple uses."

The NBGA adopted the following guiding principals:

- Don't eradicate plants
- Manage with long-term stewardship as a focus
- Manage to promote diverse plant habitat
- Manage habitat with site-specific approaches and objectives
- Base recommendations on best available science.

One very important long-range objective is to produce and disseminate factual information through an outreach program. Such a program is vital to supplanting the misinformation that continues to spread.

The NBGA Board of Directors consists of the following individuals:

- Mr. Phil Durocher - *Texas Parks and Wildlife Department*
- Mr. Gene Gilliland - *Oklahoma Fisheries Research Laboratory*
- Mr. Davy Hite - *Professional Bass Angler, 1999 B.A.S.S. Classic Champion*
- Mr. Vince Mudrak - *US Fish and Wildlife Service*
- Mr. Jeff Schardt - *Florida Department of Environmental Protection*
- Mr. Bruce Shupp - *Bass Anglers Sportsman Society*

Now that the NBGA has met its first goal of establishing a National organization, the Directors are focusing on holding a National Symposium in 2001, initialing a fund raising program, and gaining National recognition.

The ultimate desired result of the NBGA's efforts will be to create guidance for a decision framework that ensures that all stakeholders have positive, productive input to the process of developing habitat enhancing plans and programs for managing problem aquatic plants in our Nation's water bodies.

Regardless of the particular bias of any group, stakeholders must work together, and make tradeoff's that ensure that aquatic plant management programs serve the majority of needs while maintaining and enhancing the aquatic habitat.

For more information concerning the NBGA, write to:

National Bass/Grass Alliance
P O Box 820438
Vicksburg, MS 39182-0438

The 2000 FAPMS Aquatic Plant Manager of the Year

Congratulations go to Charles Stevens, St. Johns County Board of County Commissioners, for winning the 2000 FAPMS Aquatic Plant Manager of the Year award! Chuck has 20 years of aquatic plant management experience and has been a FAPMS member for 18 years.

His accomplishments are numerous and varied. For example, Chuck speaks on local radio programs about invasive plant management programs, he has redesigned and modified spray systems on airboats and spray trucks, he has provided training for other county agencies, and served on the committee to revise the state herbicide applicator exam. He is also a Fish & Wildlife Conservation Commission Hunter Education Instructor, and has a long list of training courses and certifica-



Photo by Don Duggett

tions related to invasive plant management. Chuck is obviously dedicated to his career, and oh, by the way, he was the 1986 FAPMS Aquatic Plant Manager of the Year! So, congratulations once again, Chuck, for your continued commitment to excellence.



Timberland

Enterprises, Inc.

Renewing the Environment

Distributor of vegetation management programs and control products for Aquatics, Forestry and Roadway/Utility Rights of Way.

SOLUTIONS - SERVICE - SATISFACTION

FLORIDA OFFICE
3705-10 S.W. 42nd Ave.
Gainesville, FL 32608
(352) 375-2601 (O)
(352) 375-3123 (FAX)

CORPORATE OFFICE
P.O. Box 557
Monticello, AR 71655
(870) 367-8561

N A U T I Q U E*



Nature's balance—a sight to behold. But just one week ago, these shores were choked with exotic aquatic weeds. What happened?

A new solution, Nautique aquatic herbicide. Fast control of nuisance and exotic weeds. There's no waiting. Waters may be enjoyed immediately after treatment. There's no worry. Nautique has received full registration from the Environmental Protection Agency.

This new tool works on contact for effective spot and local treatment of tough weeds like Hydrilla, Egeria, and Southern Naiad.



For experienced, professional help with the restoration of your water body, contact a SePRO Preferred Applicator. Call SePRO at 1-800-419-7779 and we will provide you with a list of the finest aquatic professionals in your area.

Nautique, quick and economical—with the commitment and quality service you've come to expect from an industry leader like SePRO.

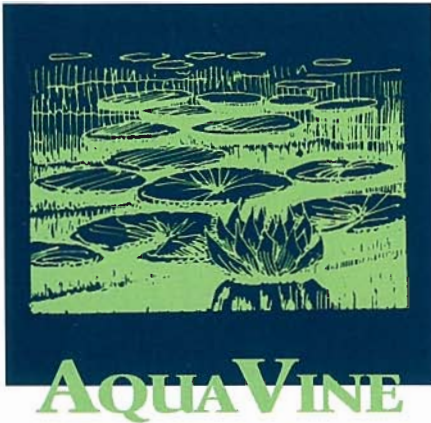
For a free Nautique use guide or to find out more, contact a SePRO Aquatic Specialist at 1-800-419-7779. Visit our website at www.sepro.com.

Nautique*
A New Solution



SePRO Corporation, 11550 N. Meridian Street, Suite 600, Carmel, IN 46032-4565 Fax: 317-580-8290.

Always read and follow label directions. *Trademarks of SePRO Corporation.



**Congratulations to the
FAPMS 2000 Annual Award
Winners !**

Applicator of the Year Award:

Charles E. Stevens, Jr.

Applicator Paper Award:

Brian Finder

First Place Booth Exhibitor Award:

Elf Atochem NA

Presidential Award:

Bill Culpepper, and Chris Doolin

Equipment Demonstration:

Helicopter Applicators Inc.

Golf Tournament:

Eric Mannisto, Wayne Corbin, Chris York, & Charles Bedard

Fishing Tournament:

Photo Contest Awards:

Scenes Category: Keith Mangus

Operations Category: PJ Myers

The Grand Prize winner
of the Mercury Outboard,
compliments of Mercury, and Elf
Atochem, was Bobby Jo Cromwell

A note of Thanks

A special note of thanks goes to
Jennifer Myers! Although never
formally listed in *Aquatics* as such,
Jennifer was the awards chair for the
2000 Annual Meeting.

**Meetings &
Announcements**

Southeast Exotic Pest Plant Council
(SE-EPPC) 2001 National Confer-

ence 2001: A Weed Odyssey, March
21 - March 23rd, 2001

Georgia Center for Continuing
Education, Athens, Georgia
Cheryl McCormick, Institute of
Ecology, UGA, Athens, Georgia
30602-2022. cheryl@uga.edu or 706-
542-2968

FAPMS Board Meeting

January 24, 2001, Palatka, Todd Olson
800-327-8745

Aquatic Plant Short-Courses

Fort Myers, FL, January 17-18, 2001.
CEU's and test will be offered,
Don Doggett at 941-694-2174 or
doggett@lchcd.org

Hillsborough Extension Service,
Seffner, FL, Jan 26, 2001, 2 Aquatic
CEU's, 2 Core CEU's, and 2 ROW
CEU's, Mar 27, 2001, 4 Aquatic
CEU's, Dave Palmer 813-744-
5519x103

New Name! Growing Commitment!

PROSOURCE ONE

AgroDistribution LLC. dba Prosource One

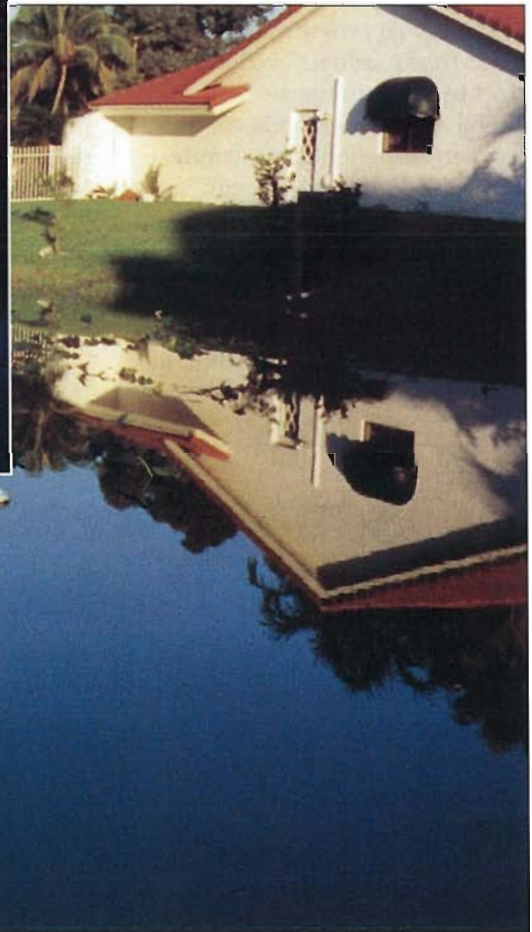
***ProSource One formerly Terra Professional
Products has a new name with a growing
commitment to our customers.***

*ProSource One is the exclusive source for all of your aquatic vegetation management needs.
We offer the right products, reliable advice and dependable services to help make your aquatic
program successful. Talk to your ProSource One aquatics vegetation management specialist.*

Aquatic Specialists

Western Florida Polly Ellinor 1-888-813-0562
Eastern Florida Paul Mason 1-800-207-1408

Less Algae/Bacteria, Less Work, Less Copper.



South Florida, Fall 1998, one treatment.



Manufactured by Earth Science Laboratories, Inc.

Phone (800)257-9283

Fax (501)855-5806

www.earthsciencelabs.com



Graduate Assistantship Announcement!

A graduate assistantship in the area of aquatic plant management and ecology is being offered jointly by The Aquatic Ecosystem Restoration Foundation (AERF), a non-profit applied research and education organization, and The Aquatic Plant Management Society (APMS). Co-sponsors of this academic award will include some, if not all, of the six APMS regional chapters.

Objective: To provide a stipend for a full-time graduate student to conduct research in the areas involving aquatic herbicides or algaecides (used alone or in combination with other management approaches) or in aquatic ecology related to the management of regionally or nationally-recognized nuisance vegetation.

Applicant Eligibility: Solicitation for proposals is open to any full-

time faculty member and/or graduate student of an accredited U.S. academic institution. A faculty sponsor must be identified if applicant is a graduate student.

Amount: \$40,000.00 **Duration:** Two years.

Proposal Deadline: Applications must be postmarked no later than 1 April 2001.

Guidelines for Proposals: Proposals should contain a concise statement of the project, including its purpose and justification, as well as sections that discuss study objectives, methodologies, schedule, budget, and planned publication of results. Budget should primarily be designated to provide support for a graduate student. The AERF will not pay overhead/indirect costs on approved projects. Resume of faculty applicant and graduate

student (if known), not to exceed two pages each. Proposals should not exceed 10 pages and must be signed by the applicant (principal investigator) and appropriate university official. An original and 10 copies should be submitted to: Dr. K. D. Getsinger, AERF Technical Advisory Committee Chair, c/o CEERD-EP-P, 3909 Halls Ferry Road, Vicksburg, MS 39180-6199.

Award: Notification of award will be provided to the faculty member by July 2001, with initiation of the stipend scheduled for the 2001-2002 academic year.

Inquiries: Mr. Michael D. Moore, Executive Director AERF, 817 Pepperwood Dr., Lansing, MI 48917, mdmoore817@aol.com, (517) 323-7685; or Dr. K. D. Getsinger, getsink@wes.army.mil, (601) 634-2498.

Aquatic Weed Control Products From Helena Chemical Company

Complete Line of Herbicides Including:

Aqua-Kleen® Aquathol® Hydrothol® K-Tea™ Komeen® Reward® Rodeo® Sonar® Weedar®

Complete Line of Adjuvants Including:

Kinetic®HV Optima® Quest® Induce® Dyne-Amic®

Aqua-Kleen® and Weedar® are registered trademarks of Rhone-Poulenc Ag Co.
Aquathol® and Hydrothol® are registered trademarks of ELF Atochem.
K-Tea™ and Komeen® are registered trademarks of Griffin Corporation.
Reward® is registered trademark of Zeneca Professional Products, a business unit of Zenca Inc.
Rodeo® is a registered trademark of Monsanto Agricultural Products Co.
Sonar® is a registered trademark of SePRO.

Helena Aquatic Specialists

- Bonnie Figliolia**
813-626-5121
- Trace Wolfe**
888-212-1390
561-301-8653
- Bo O'Neal**
561-573-7405

Alachua, FL 904/462-4157

Dundee, FL 941/439-1551

Tampa, FL 813/626-5121

Palmetto, FL 941/722-3253

Wauchula, FL 863/773-3187

Belle Glade, FL 561/996-2011

Mt. Dora, FL 352/383-8139

Ft. Pierce, FL 561/464-8660

Immokalee, FL 941/657-3141

Homestead, FL 305/245-0433

Delray Beach, FL 561/499-0486

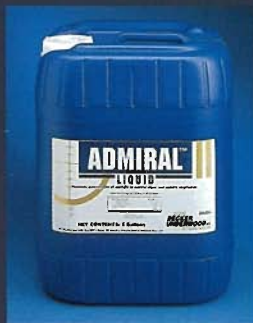
HELENA People...Products...Knowledge...

Helena Chemical Company • 2405 N. 71st St • Tampa, FL 33619

Above And Below The Surface...



ADMIRALTM TAKES COMMAND!



Becker Underwood's new AdmiralTM Liquid controls the growth of algae and aquatic vegetation in lakes, ponds and other bodies of water while adding a beautiful, natural-looking blue.

As an important part of a lake management program, Admiral Liquid delivers all of the algae control you demand, and Admiral has been registered by the EPA. Create more beautiful waterways two different ways with the commanding presence of Admiral Liquid—only from Becker Underwood.

BECKER **ISO 9001**
UNDERWOOD **REGISTERED**
INC.
THE COLOR OF INNOVATIONTM

1-800-232-5907 • 515-232-5907 • Fax 515-232-5961 • www.bucolor.com

Admiral is a trademark of Becker Underwood, Inc., and is registered with the Environmental Protection Agency, No. 67064-2. Read and follow label directions.



Fast Action.



New & Improved
QIT Formulation

REWARD® for Fast, Highly-Active Weed Control.

With REWARD non-selective herbicide, you never have to wait for aquatic weed control.

- Fast acting
- Excellent Hydrilla control with less than 8 hours exposure to REWARD
- REWARD is not persistent in water—readily deactivated by adsorption to sediment—REWARD level drops by 73% in 24 hours and more than 97% after 4 days
- Highly active, non-selective
- Broadest-spectrum aquatic herbicide available
- Easy on the environment
- Ideal for integrated plant management
- Low use rates
- Convenient packaging

For more information, contact your authorized Zeneca Distributor, or call Zeneca Professional Products Toll Free at 1-888-617-7690. Labels and MSDSs available 24 hours a day, seven days a week via Fax on Demand. Please call 1-800-640-2362.

www.zenecaprofprod.com

REWARD®
Landscape and Aquatic Herbicide

ZENECA Professional Products

Always read and follow label directions carefully.

REWARD® is a registered trademark of a Zeneca company.

©2000 Zeneca Ag Products Inc. Zeneca Professional Products is a business of Zeneca Ag Products Inc.

ZPP-REW-004