Aquatics

Spring 2000

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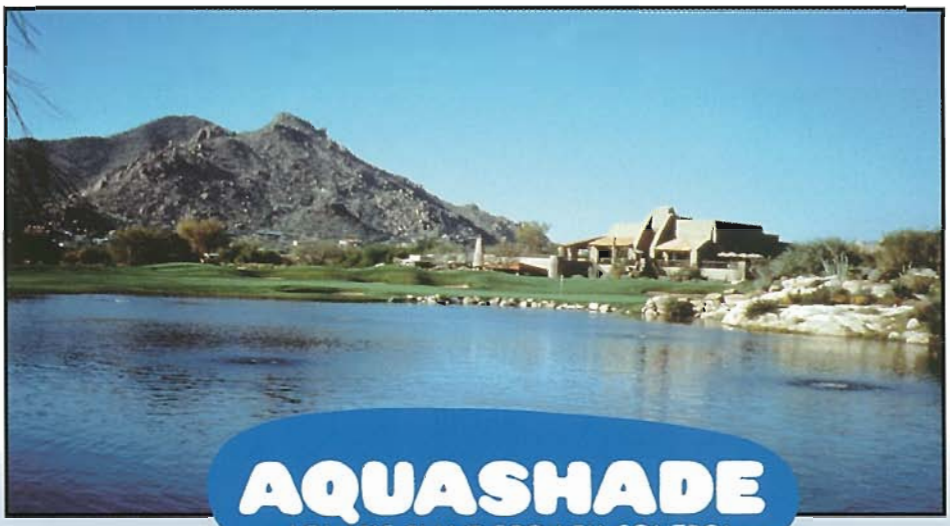

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Editorial

As I enter my third year as editor, *Aquatics* magazine is entering its 21st year of publication! Three years ago, I had no idea how a magazine like this was created. There are important steps in *Aquatics*' production and a lot of people involved. *Aquatics* is supported by advertisements, which are solicited and managed by an advertisement and publisher coordinator. A graphics design artist puts all the articles and pictures in the *Aquatics* format. A printer prepares "blue line" drafts, 4 color photo separations, the cover photo, and prints the copies. Finally, a mailing service receives the nearly 2000 copies of *Aquatics*, attaches your addresses (provided by the FAPMS mailing list coordinator), and ships them to the post office. The editor looks for articles to publish, coordinates the magazine's layout with the design artist, and reviews the final draft with the printer. The process typically requires five to seven weeks and lots of attention to details. Once it is complete, it's almost time to begin the next quarterly issue again.

So why tell you how *Aquatics* is made? Because over the last 20 years, lawmakers and the general public have become increasingly aware of "invasive species" impacts and increasingly supportive of their management. *Aquatics* began as, and still is, a valuable educational tool that has helped foster that awareness. *Aquatics* is distributed to ecosystem managers, commercial applicators, scientists, libraries, governments, professionals, and citizens across the United States and as far away as Australia. Publishing the information you possess about invasive species management is more important now than ever.

So now you know...the rest of the story. I thank all the people who work hard to produce *Aquatics*, and thank you, the reader, for your patronage, and input to this unique magazine.

Blue sky, scenic Wakulla River, clear water, a gentle manatee; does it get any better than this? Unfortunately this system is threatened by hydrilla. See page 4 for more information.

Photo by Jess Vandyke

Aquatics

Spring 2000/Vol. 22, No. 1

CONTENTS

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

Aerial view of Wakulla Springs showing patch of (brown) hydrilla pulled from bottom awaiting removal. Except for the spring opening itself, hydrilla now infests the park. Photo by Tom Kennedy

Hydrilla in Wakulla Springs State Park: An Update

By Scott Savery, Florida Department of Environmental Protection

***Editors Note**: In the Winter 1997 issue of Aquatics magazine, an article entitled "Hydrilla in Wakulla Springs State Park: The Battle Between Two Non-indigenous Plants" was published. What follows is an update of the park's battle to control hydrilla in this unique system.*

Introduction

Wakulla Springs State Park is located 15 miles south of Tallahassee Florida, and is home of one of the world's largest, fresh water springs. Approximately 400,000 gallons of water per minute flow from its cavernous mouth forming the headwaters of the scenic Wakulla River. The park offers glass-bottom boat tours of the spring and spring-run where visitors are treated to sightings of abundant fish and wildlife. There is a swimming beach and a diving platform into the 125 foot deep spring boil. The only entrance to the spring is through the park. There is no public access via the Wakulla River, therefore, the only boat traffic in the park are the tour boats. The aquatic vegetation of Wakulla Springs is diverse (over 40 species), yet has been dominated by the non-native submerged plant egeria (*Egeria densa)* since the early 1970's. Hydrilla (*Hydrilla verticillata*), however, was first discovered at Wakulla Springs State Park in March of 1997 and has since become a serious problem.

Impacts of Hydrilla on the Park

By December 1997, hydrilla had spread down river, approximately a quarter of a mile past the tour boat dock. The extent of the hydrilla invasion became apparent when complaints were made about an abrasive plant entangling some swimmers. During 1998, it invaded the spring basin, the swimming area, and the area behind the spring. In 1999, hydrilla continued its invasion further down river. It had also infested the spring to a depth of over 30 feet (!) covering popular

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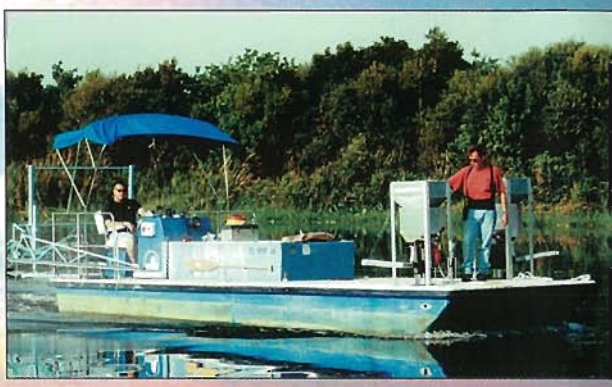

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Hauling hydrilla on to a barge near the swimming area at Wakulla Springs.

geological, archaeological, and biological features shown on the glass-bottom boat tour. The channel from the spring to the boat dock had also become infested with hydrilla, and alligators took advantage of this new basking habitat precariously close to the swimming area.

Where *Egeria densa* was once a relatively manageable invasive plant, hydrilla has now formed dense canopies shading out native aquatic plants below. In places where the hydrilla has been removed, native plant cover has not recovered. Nitrate levels in the spring have been increasing, and this may give hydrilla an advantage over native plants like eelgrass (*Vallisneria americana*) and strap leaf sedge (*Sagittaria kurziana*). A dense mat of hydrilla is capable of slowing water currents, possibly causing increased sedimentation. This altered flow may also increase nutrient residence times giving hydrilla additional advantage over native vegetation. Impacts of hydrilla and hydrilla management on the biota of Wakulla Springs are currently unknown. Unfortunately, hydrilla is now a major problem at Wakulla Springs State Park.

Management Efforts

Mechanical

Soon after its discovery, ambitious attempts were made to remove hydrilla from the spring and river. Removal by hand was the first method used. In February 1998, a full time, non career service position was created and hired to help control and remove hydrilla. Swimmers and volunteers were first used in the swimming area to help pull the hydrilla and load it onto dump trucks. Divers were used to pull it out of the deeper areas of the spring and swimming area.

Tarps were put down in an attempt to shade out the hydrilla in parts of the spring basin and the area directly behind the floating dock. Shading with tarps is capable of killing hydrilla, however, tarps must be down for over 80 days or the hydrilla will sprout from roots and tubers.

Late in 1998, a harvesting company (Prism Ecological Services, Inc.) was contracted to mechanically remove hydrilla from certain parts of the river. After ten days of cutting during March 1999 totaling 282 man-hours, 219,000 pounds of hydrilla were removed from the river. Prism returned four times in 1999 and removed an additional 600,000 pounds of hydrilla. Until October 1999, Prism was cutting hydrilla and harvesting the clippings that were then hauled to a dumpsite in the park. A result of this cutting was an observed increase in hydrilla tubers which quickly re-infested controlled areas. The harvesting method was then improved upon, and in October 1999, Prism developed a way to mechanically pull hydrilla out of the river while leaving some of the native Eel grass (*Vallisneria americana*) intact. In five days, they pulled 140,000 pounds of hydrilla from the river. Between December 1999 and January 2000, 19 volunteers completed 40 dives and park personnel completed 28 dives totaling 45 man-hours. The divers uproot hydrilla and let it float to the surface in large mats where the mechanical puller then harvests the material. When hand pulling is done in coordination with mechanical harvesting, efficiency of hydrilla removal is greatly increased. In eleven days a total of 260,000 lbs. of hydrilla were removed. This represented about ⅐ of the total amount that had been removed in the previous 2 ½ years, in just an eleven day period. Also, less tubers have been observed in areas where this method is employed.

Herbicides

In April of 1999, the aquatic herbicide Aquathol Super K® was applied to a portion of the swimming area. The hydrilla was observed to turn brown but did not die from this herbicide application. Due to the tremendous water flow generated by the spring, herbicide efficacy is greatly reduced. Because of this, future herbicide treatments will take place in small areas where water flow can be temporarily diverted. Several small areas can be

Nearly 2 million pounds of hydrilla were removed from Wakulla Springs between 1997 and 1999. This dump truck waits on the tour boat pier adjacent to swimming beach on left.

boomed off and the approved herbicide applied. The areas will be monitored both before and after herbicide application.

Biological

In May of 1999, an attempt at biological control was made in conjunction with Dr. O'Brien from Florida A&M University (FAMU). Specimens of the fly *Hydrellia pakistanae* were collected from central Florida. Approximately 20,000 flies were released on a small section of the river near the boat dry-dock area. In November 1999, several specimens were collected in the area they were released. A small population of *Hydrellia pakistanae* may have established, however, it is often difficult to determine the extent of damage caused by the larvae. Additionally, *Hydrellia pakistanae* has a life cycle of approximately 20 days when the water temperature is 85 to 90 degrees. At Wakulla Springs State Park, the water is considerably cooler with an average of 70 degrees. Here, the life cycle may take as long as 80 days to complete. Therefore, it may take repeated introductions to augment the population that may already be established.

Current Status: January 2000

Since its discovery in March of 1997, more than 900 tons (1,815,000 lbs.) of hydrilla have been mechanically removed from Wakulla Spring and river. This effort involved a total of 7,035 man-hours or 880 workdays. For fiscal year 1999-2000, the park received $60,000 to remove hydrilla from the spring and the river. With this money, a second non career service position was created to help control hydrilla. By January 14, 2000, significant headway had been made in the spring basin and the boat channel by coordinating diving efforts and mechanical harvesting. Despite the latest attempt to remove hydrilla, however, significant portions of the upper river are still heavily infested. This includes large areas in the middle of the river on the tour boat route.

Recommendations

Overall, more needs to be known about the impacts of hydrilla on the river, both economically and biologically. The complete eradication of hydrilla in Wakulla Springs State Park may never be possible. Achieving maintenance control of hydrilla will require continuation of integrated management using mechanical, biological, and chemical control techniques. Failure to do so will cause further damage to Wakulla Spring and the river. If funding is removed or drastically reduced, hydrilla will quickly reinvade. The money and effort spent earlier will then have been to no avail.

Status of the Aquatic Plant Maintenance Program in Florida Public Waters

Summary of the Annual Report, Fiscal Year 1998-1999

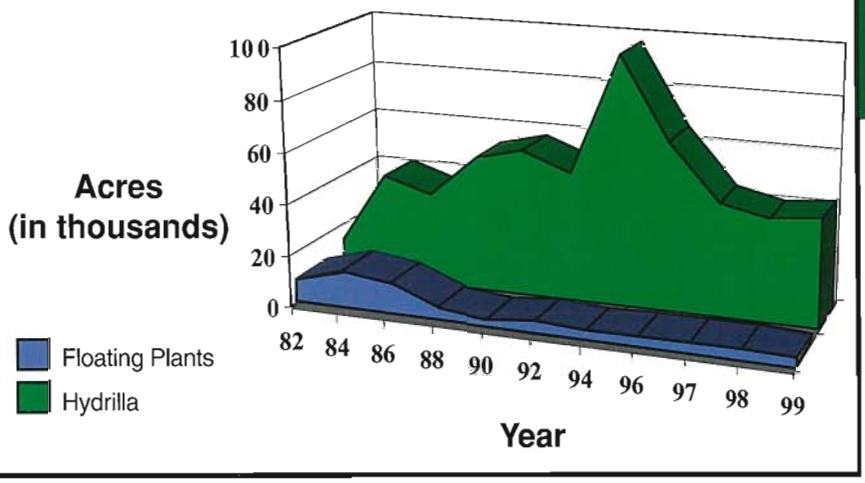
By Jeff Schardt and Judy Ludlow
Florida Department of Environmental Protection

Introduction

The mission of Florida's aquatic plant management program is to reduce negative impacts of invasive non-indigenous plant species like floating water hyacinth, submersed hydrilla, and emergent torpedograss. **Non-native plants pollute 96% of Florida's 460 public lakes and rivers** that comprise 1.27 million acres of fresh water where fishing alone is valued at over $1.5 billion annually. Continuous maintenance of invasive non-native plants is needed to sustain navigation, flood control, and recreation while preserving native plant habitat on sovereign state lands.

The Exotic Pest Plant Council lists 11 of the 21 non-native plants found in Florida public waters as Category I pest plants capable of completely disrupting aquatic ecosystems. Funding has been insufficient to address all of the higher priority hydrilla problems, therefore, plants like torpedograss and wild taro have been virtually unmanaged for the past decade; only 100 acres were controlled in 1999. Like hydrilla in the mid 1990s, these plants are on the verge of overwhelming lake and river marsh communities across the state.

Hydrilla and Floating Plant Coverage in Florida's Public Waters, 1982-1999



FY 1998-1999 Management Results

A complete FY 98-99 summary of aquatic plant management statistics for Florida's public waters is on page 14 of this issue. What follows is a summary of management activities for floating plants, hydrilla, and other plants.

Floating Plants

Managers treated approximately 25,250 acres of floating plants in public waters during FY 98-99.

- Comprised of approximately 60% water hyacinth and 40% water lettuce
- 3,000 more acres treated than in FY 97-98,
- 1,400 fewer acres treated than the previous five-year average.

Managers spent about $3.30 million controlling floating plants during FY 98-99.

- 0.50 million more spent than in FY 97-98,
- 0.55 million more spent than the previous five-year average,
- about half was spent by the US Army Corps of Engineers on Lake Okeechobee and the St Johns River.

The 1999 DEP Survey recorded 3,213 acres of floating plants

- found in 274 of 460 (60%) public waters.
- 2nd lowest acreage in 20 years of DEP inventories (lowest = 2,710 acres, 1990)
- floating plants are under

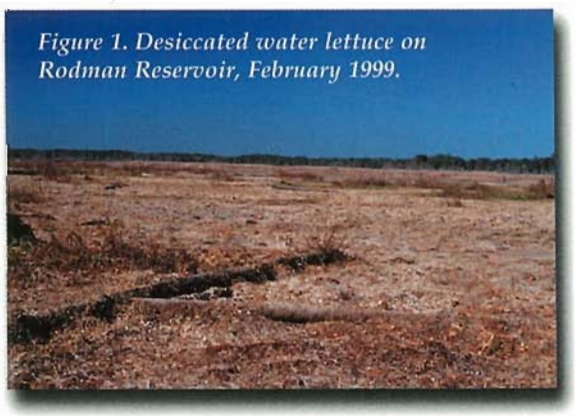


Figure 1. Desiccated water lettuce on Rodman Reservoir, February 1999.

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maintenance control in 270 (99%) of Florida's waters

- 1,450 acres of water hyacinth were reported in 255 waters
  - 254 waters with water hyacinth (99%) are under maintenance control
  - only 23 of 255 waters contained more than 10 acres of water hyacinth
- 1,764 acres of water lettuce were reported in 152 waters
  - 149 waters with water lettuce (98%) are under maintenance control
  - only 22 of 152 waters contained more than 10 acres of water lettuce
- The largest floating plant reduction was recorded on Rodman Reservoir where;
  - submerged trees make applying herbicides and harvesting nearly impossible,
  - the water level was increased followed immediately by a drawdown to strand and freeze water lettuce (Figure 1.)

Figure 2. Hydrilla covering 6,000 acre Lake Hatchineha, November 1999.

Hydrilla

Florida experienced a La Niña weather pattern during 1999; a warm, dry winter and spring with a more active than average tropical storm season beginning in early September. This climate was conducive to successful hydrilla management across the state except in Osceola and Polk Counties. Heavy summer rains increased water levels by more than two feet, diluting herbicide concentrations in Lakes Marion, Pierce, and Weohyakapka of Polk County. Flood control managers had to release an estimated 40% of the volume of the Kissimmee Chain of

Lakes where whole-lake herbicide treatments had been applied to Lakes Toho, Cypress, Hatchineha (Figure 2.), and Kissimmee. Hydrilla increased by a collective 10,000 acres in these seven waters during 1999 which now account for 67% of all hydrilla reported in public waters.

Nearly 20,500 acres of hydrilla were treated in public waters during FY 98-99.

- 6,000 more acres than in FY 97-98

Managers spent about $12.7 million treating hydrilla during FY 98-99.

- nearly $3.0 million more than in El Niño-shortened FY 97-98 control season

The 1999 inventory found 42,020 acres of hydrilla in 197 public waters.

- about 2,000 more acres than reported in 1998
- fourth lowest total since the bureau began keeping records in 1983
- hydrilla is present in 197 (43%) of Florida's public water bodies
  - 12 more waters than in 1998
  - hydrilla infested as many as 276 waters during the past five years
  - therefore, tubers are present in as many as 276 public waters
  - tubers cover an estimated 136,600 acres of public waters
  - tubers represent the potential for immediate regrowth
- hydrilla is under maintenance control in 183 (93%) of Florida's waters
  - half of the waters not under control are in the Kissimmee Valley
  - all Kissimmee waters are top FY 99-00 management priorities

Other Plants

Prior to 1994, about $150,000-$350,000 were spent annually controlling plants other than water hyacinth, water lettuce, and hydrilla. Funds were insufficient to control higher priority hydrilla problems, so little was available for other Category I invasive plants. Water levels increased in the middle 1990s tearing floating islands of vegetation loose from shorelines and formerly exposed lake sediments. This resulted in floating islands blocking access and navigation, and smothering stands of beneficial native plants (Figure 3.).

Figure 3. Harvesting tussocks on the Lake Tsala Apopka system.

In FY 98-99, $943,545 were spent controlling 2,974 acres of other plants in Florida public waters:

- 3% for Category I invasive plants,
  - 35 acres of torpedograss
  - 67 acres of wild taro
- 43% for floating island (tussock) control,
- 53% mostly for native species at boat ramps or in established boat trails.

Nearly 19,450 acres of other Category I invasive plants were present in public waters but not treated in FY 98-99:

- about 99.5% of the total present was not treated,
- mostly in marshes and flood plains connected to public waters,
- these plants continue to expand,
  - displacing native plant habitat,
  - breaking loose, forming more tussocks, and

- becoming more expensive to bring under maintenance control.

Prevention and Assessment

Intuitively, if invasive plants are not imported into Florida waters, then their environmental damage and expensive management programs would not be necessary. If invasive plants are present but detected early, then damage and expenses can be minimized. Florida's multi-agency prevention program and the bureau's annual inventory of public waters are steps toward reducing impacts caused by invasive aquatic plants.

For a copy of the full 63 page report, contact Jeff or Judy at 850-488-5631. All Photos by Jeff Schardt

Call For Papers and Ideas!

FAPMS 2000 ANNUAL MEETING

October 3-5, 2000 ▪ Cocoa Beach, FL

Now is the time to get your slot on the soon-to-be fabulous program.

- The Society was formed for the applicator and the annual meeting is a chance to share what you have learned with other members.
- Each year, the Society awards all applicators (non supervisory field staff) who present a paper with a plaque.
- The applicator who presents the best paper will also receive $100.00 !
- We are looking for papers on herbicide application techniques, mixtures, innovative control methods, etc....
- We also need your ideas on topics to present at the Annual Meeting. *What would you like to hear about??*

Deadline For Paper Submission Is July 31, 2000

Submit Your Topic Ideas and/or 75 Word Or Less Abstract To:

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Department of Environmental Protection
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Phone: 561-791-4720 Fax: 561-791-4722 ▪ Email: widnessc@mail.state.fl.us

Fiscal Year 1998 –1999 Aquatic Plant Management Statistics for Florida's Public Waters.

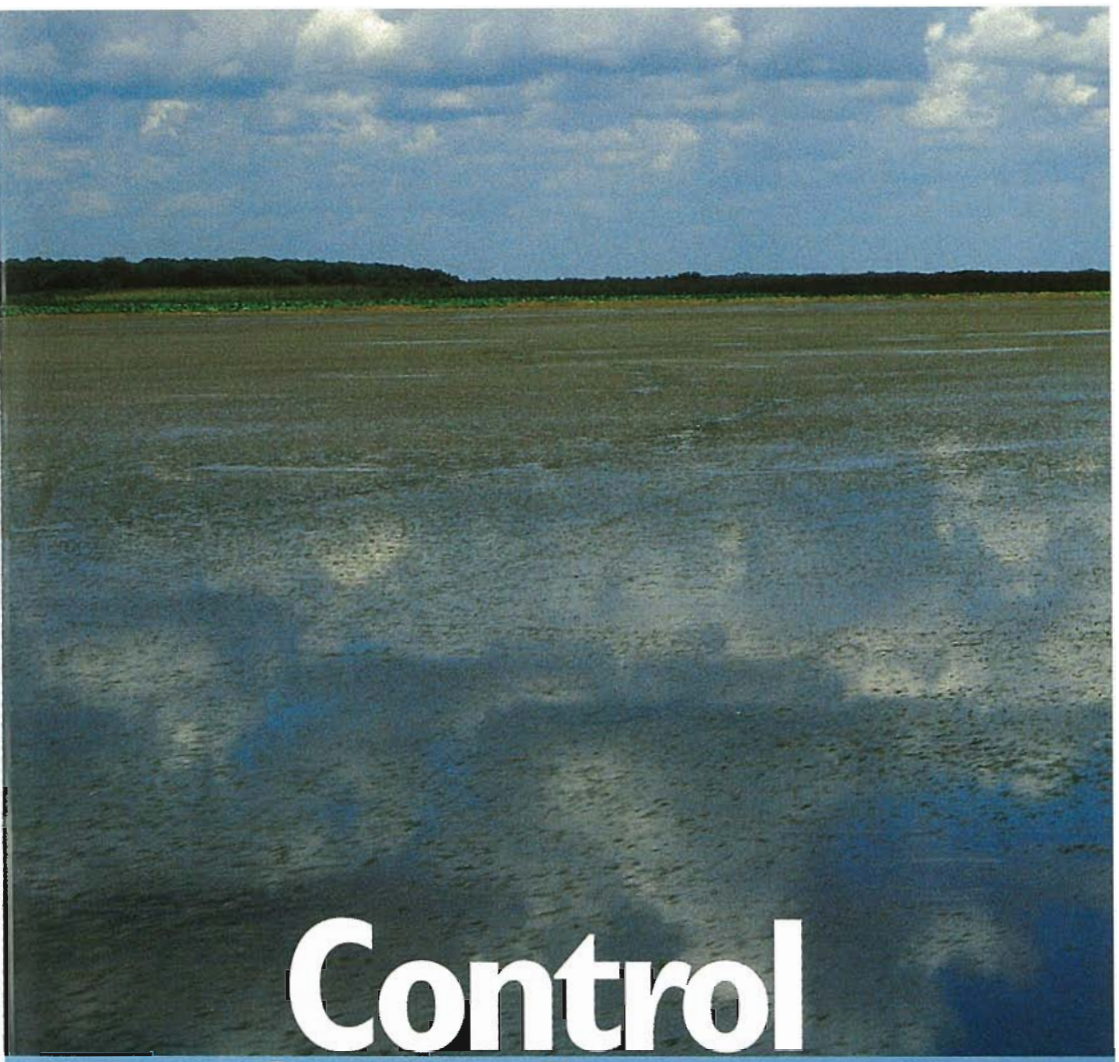
Acres of Aquatic Plants Treated and Treatment Expenditures in Florida Public Waters During Fiscal Year 1998 - 1999

(Data represents compilation of all contractor activities within each water management district)

Acres	Northwest	Suwannee	St Johns	Southwest	S. Florida	TOTAL
Floating	684	237	6,646	4,038	13,645	25,250
Hydrilla	366	4	2,048	3,084	14,982	20,484
Other Plants	90	33	468	923	1,460	2,974
TOTAL	**1,140**	**274**	**9,162**	**8,045**	**30,087**	**48,708**
Expenditures	**Northwest**	**Suwannee**	**St Johns**	**Southwest**	**S. Florida**	**TOTAL**
Floating	$ 34,106	$ 26,222	$1,058,367	$ 486,041	$ 1,698,261	$ 3,302,997
Hydrilla	$ 205,173	$ 873	$ 916,347	$1,767,258	$ 9,826,105	$12,715,756
Other Plants	$ 26,096	$ 3,725	$ 129,829	$ 570,682	$ 213,213	$ 943,545
TOTAL	**$ 265,375**	**$ 30,820**	**$2,104,543**	**$2,823,981**	**$11,737,579**	**$16,962,298**

Federal, State and Local Funds Expended during Fiscal Year 1998 –1999 Managing Aquatic Plants in Florida Public Water Bodies

Government /Plant	Intercounty	Intracounty	TOTAL
Federal			
Floating Plants	1,761,309	0	1,761,309
Hydrilla	543,691	0	543,691
Other Plants	0	0	0
Subtotal	**$ 2,305,000**	**0**	**$ 2,305,000**
State			
Floating Plants	1,506,779	14,705	1,521,484
Hydrilla	11,766,557	172,753	11,939,310
Other Plants	896,711	1,417	898,128
Subtotal	**$ 14,170,047**	**$ 188,875**	**$ 14,358,922**
Local			
Floating Plants	5,500	14,705	20,205
Hydrilla	60,000	172,753	232,753
Other Plants	44,000	1,417	45,417
Subtotal	**109,500**	**$ 188,875**	**$ 298,375**
TOTAL			
Floating Plants	**3,273,588**	**29,410**	**3,302,998**
Hydrilla	**12,370,248**	**345,506**	**12,715,754**
Other Plants	**940,711**	**2,834**	**943,545**
GRAND TOTAL	**$ 16,584,547**	**$ 377,705**	**$ 16,962,297**



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.

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The National Bass / Grass Alliance

By Jeff Schardt,
Florida Department of Environmental Protection,
APMS / BASS Liaison

A 28-member Task Force convened on March 9-11, 1999 in Atlanta to discuss improving relations among aquatic plant managers and bass anglers. One of the outcomes was assigning a Steering Committee to develop a plan of action to implement strategies recorded at the Atlanta meeting. Four members of the Steering Committee met in Tallahassee on September 27-28, 1999 and suggested the following actions.

Create a new non-profit organization to provide factual aquatic plant control information.

- Committees from existing organizations may be perceived as biased.
- The new organization should be a Foundation to facilitate:
  - fund raising,
  - tax management, and
  - credibility.
- The Foundation name chosen is **The National Bass / Grass Alliance**
- Executive Director is Lewis Decell.
- Board members and Officers (all uncompensated) are being selected.

The Steering Committee drafted a Vision Statement.

- The language is similar to that agreed upon in Atlanta and is: "Stakeholders working together to maintain quality fisheries while managing aquatic plants for multiple uses."
- Important goals within the Vision Statement are:
  - emphasize differences between invasive and non-invasive plants,
  - stress the roles of native plants in aquatic ecosystems.

The mission of The Bass/Grass Alliance is to involve bass anglers in aquatic plant management decisions after:

- defining common grounds for resource managers and anglers,
- dispelling pervasive negative myths about aquatic plant management,
- providing facts about aquatic plants and responsible management:
  - invasive plants present ecosystem problems,
  - improper management threatens ecosystem stability, including sportfishing.

Recommended short-term actions

(1-2 years) include:

- contacting regional bass angling groups to list their concerns,
- establishing visibility/credibility of the Foundation and its mission,
- raising funds to produce and disseminate factual plant management information,
- conducting regional small-scale workshops and seminars;
  - to develop partnerships among anglers and aquatic plant managers,
  - as a step toward a comprehensive National Symposium.

Recommended long-term actions (3-5 years) include:

- continuing information dissemination,
- conducting a National Symposium on responsible aquatic plant management to:
  - bring informed anglers into plant management decision-making processes.

For further information on this important new alliance, contact Jeff Schardt, 850-488-5631.

ATTENTION STUDENTS - APMS Student Paper Contest 2000

SINCE 1975, the Aquatic Plant Management Society has conducted a student paper contest in conjunction with its annual meeting to encourage student participation, provide students the opportunity to gain experience in preparing and presenting scientific papers, and to recognize outstanding achievements by student members of the Society.

ALL contest entrants receive free meeting registration, free accommodations (based on double occupancy), book prizes, and certificates. Cash awards are granted to first through fourth place winners.

GRADUATE and advanced undergraduate students are encouraged to present their findings in the 2000 contest. Papers presented in the contest should be the results of the student's original research and should contain information not previously presented at an APMS meeting.

Sign up now! The submission deadline for title and abstract is **April 15, 2000.** For applications or questions concerning the contest, contact: Linda Nelson, ES-P
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3909 Halls Ferry Road, Vicksburg, MS 39180-6199
Phone: (601) 634-2656, Fax: (601) 634-2617
E-mail: NELSONL@wes.army.mil

Summary of the FAPMS-Sponsored Legislative Reception

By Don Doggett,
Lee County Hyacinth Control District

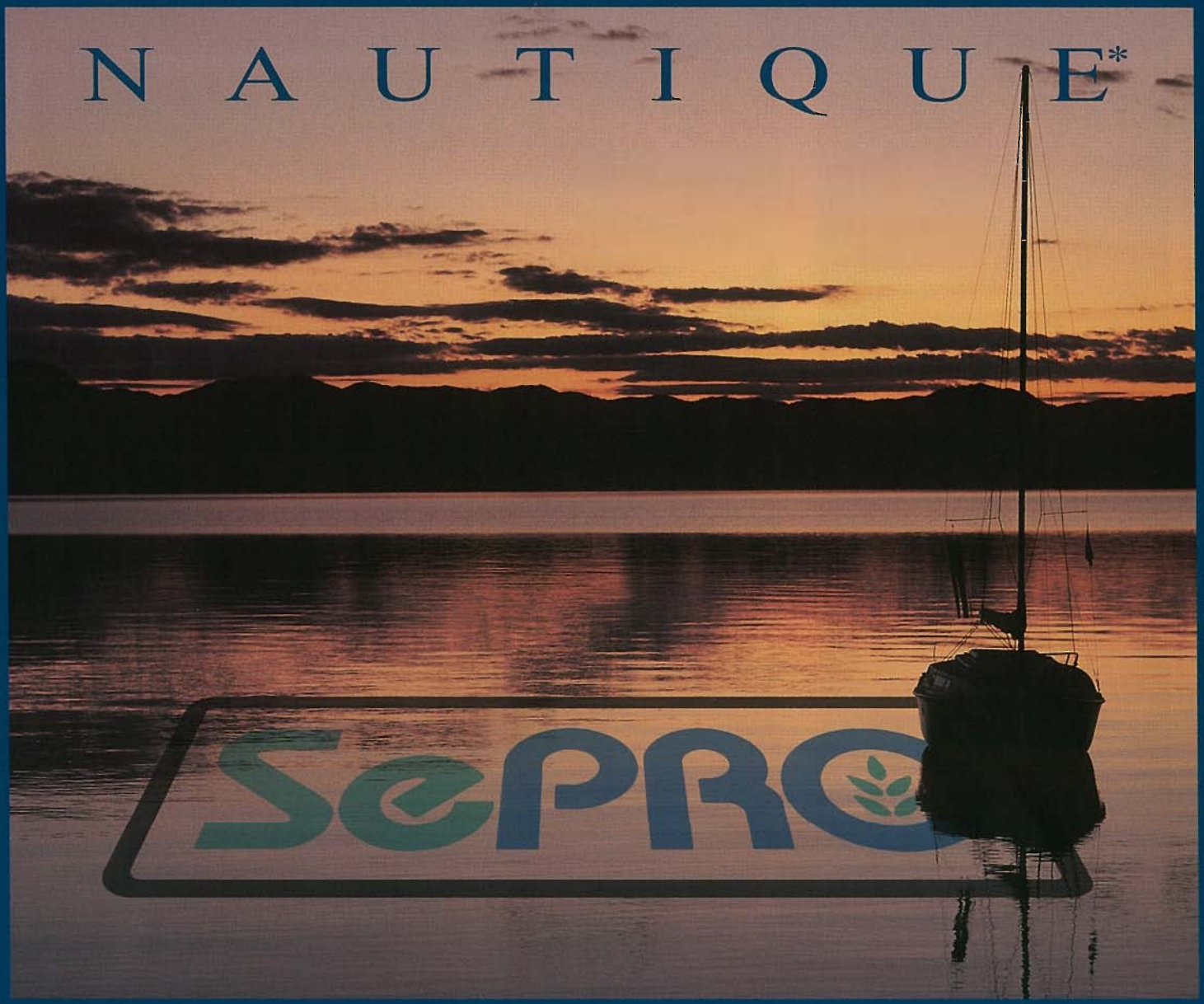
The FAPMS general membership approved, during the October 7,1999 Annual Business Meeting, to sponsor a reception honoring key persons involved in passing the Florida Forever Act. The Act, which becomes effective in 2001, provides managers with an additional $20 million for aquatic plant control. When combined with existing recurring revenues, funding will finally be sufficient to address invasive plant problems in all public waters.

Nearly 50 people, including legislators, lobbyists, and FAPMS Board and Committee Members attended the reception in Tallahassee on January 19, 2000. The reception, held after the FAPMS quarterly board meeting, offered Society Members an opportunity to interact with legislators and staff who are developing Florida's invasive plant management policy and funding strategies. The Society honored Members and staff of the Senate Natural Resources Committee and the House Committee on Environmental Protection. Plaques were presented to Senator Charlie Bronson and Representative Paula Dockery, Chairs of these Committees, for their development and spirited support of recurring aquatic plant control funding in the Florida Forever Act.

The reception was timely in that interest has been expressed in discontinuing the annual $6.3 million dollar gas tax transfer to the Aquatic Plant Control Trust Fund. Gas taxes generated by motor boat use have provided base funding for aquatic plant control since the early 1970s. Senator Bronson and Representative Dockery were grateful for their awards and are impressed with the dedication and professionalism of Florida's aquatic plant managers. They pledged their continuing support to aquatic plant management and to protect gains made during the 1999 Legislative Session.

Senator Charlie Bronson accepts his plaque from FAPMS President Jeff Schardt at the January 19, 2000 Legislative Reception. Photo by Don Doggett.

Representative Paula Dockery accepts her plaque from FAPMS president Jeff Schardt at the January 19, 2000 Legislative Reception. Photo by Don Doggett.



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AQUAVINE

FAPMS Has Elections, Too

Every year FAPMS has elections at the Annual Meeting. If you, or someone you know, are interested in being considered as a nominee for one of the officer or director positions, please contact your Nominating Committee. Remember that nominees must be FAPMS members in good standing for three consecutive years just prior to this year. Contact this year's chair, Jim Brewer, at 800-228-1833, or jim@brewerint.com with your ideas.

"A knowledgeable Angler..."

Cruise over to this website **"fishingenet.com"** Go to *"Features, Information"* then to *"Aquatic Environment* or *Biological Articles"*. Here you will find informative articles related to aquatic plant control and fishing by Gary Van Gelder, D.V.M., Ph.D. His motto is "A knowledgeable angler is a wise angler; a wise angler knows why fishing is fun!."

More *Salvinia molesta* in Florida!

Here is a **classic case** of how invasive plants are introduced into Florida waters: Dr. Vernon Vandiver (University of Florida , Ft. Lauderdale) found *Salvinia molesta* growing in a pond within a residential community in Naples, FL during a routine extension visit. The salvinia was mixed with some water hyacinths which had been dumped into the pond by a local homeowner. The homeowner's water garden had become overcrowded with these invasive plants! The water garden has since been thoroughly disinfected, and the salvinia in the pond is currently under an eradication program. Thanks go to Vernon for his detection work!

A Sad Note:

Robert K. Godfrey, master botanist and author of outstanding botanical works (i.e., "Aquatic and Wetland Plants of Southeastern United States", by R. K. Godfrey and J. W. Wooten), died February 6, 2000. He worked at FSU from 1954 through 1974 where he curated a 180,000 specimen herbarium, and was named professor emeritus.

Meetings

Florida Chapter American Fisheries Society, 20th Annual Meeting, March 28-30, 2000 "Impacts of Harmful Organisms on Florida Fisheries". Doug Haymans 850-488-6058.

FAPMS Board Meeting, April 5, 2000 Four Points Hotel, Tampa, FL, Todd Olson 800-327-8745

Aquatic Weed Control Short Course 2000, May 15-19, 2000, Fort Lauderdale, Dr. Vernon Vandiver 954-475-8990.

Florida Exotic Pest Plant Council, 15th Annual Symposium, May 17-19, 2000, Westin Beach Resort, Key Largo, Ken Langeland 352-392-9614

The Aquatic Plant Management Society 40th Annual Meeting, July 16-20, 2000, San Diego, CA. James Schmidt, 262-225-4449 or jimschmidt@appliedbiochemists.com

FAPMS 24th Annual Meeting, October 3-5, 2000, Cocoa Beach, FL Cathy Widness 561-791-4720.

Aquatic Plant Scholarship Grant

The South Carolina Aquatic Plant Management Society, Inc. is seeking applications for its annual scholarship grant. The Society intends to award a **$2,000 grant** to the successful applicant in the **Fall of 2000**.

Eligible applicants must be enrolled as full time undergraduate or graduate students in an accredited college or university in the United Sates. Course work or research in an area related to the biology, ecology or management of aquatic plants in the Southeast is also required.

Applications must be received no later than **May 1, 2000**. Other factors being equal, preference will be given to applicants enrolled in Southeastern and South Carolina academic institutions. The successful applicant may be requested to present an oral report at the annual meeting of the Society.

For additional information on application procedures, contact
Danny Johnson
SC Department of Natural Resources
2221 Devine Street, Suite 222
Columbia, SC 29205
803-734-9099, or e-mail, johnsond@water.dnr.state.sc.us

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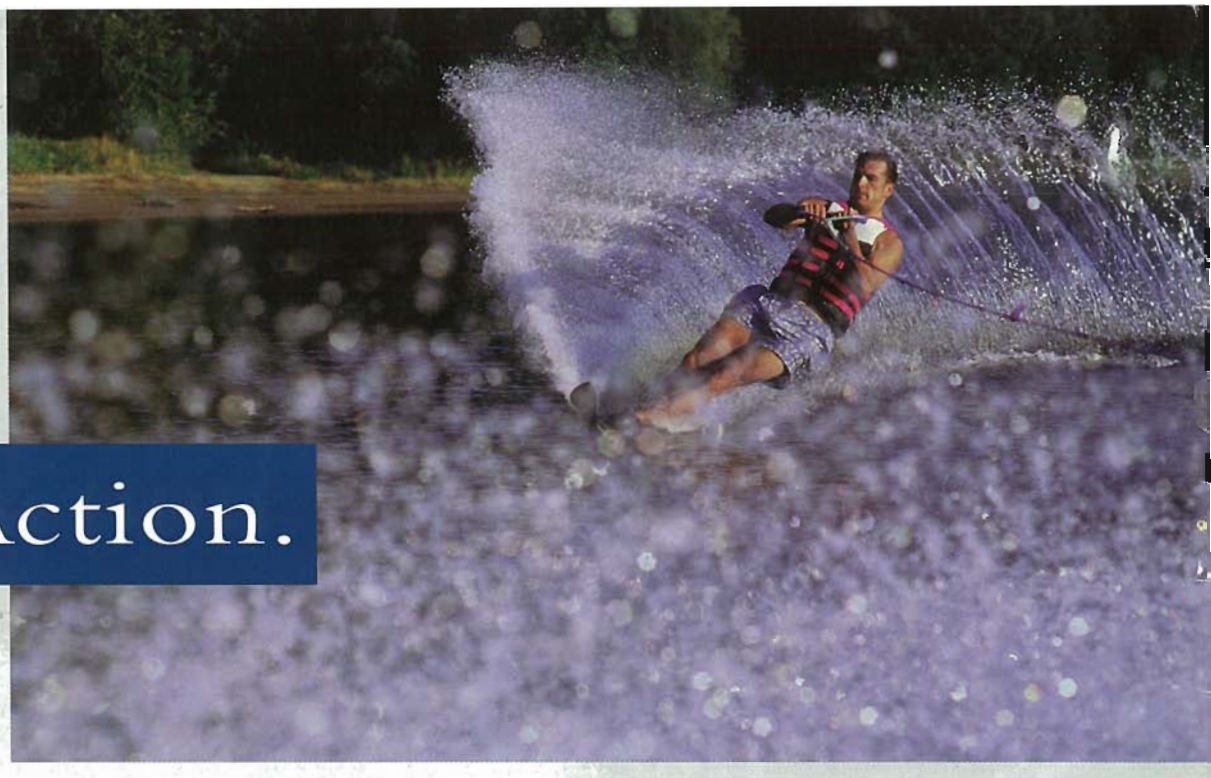

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