Aquatics

Fall 2000

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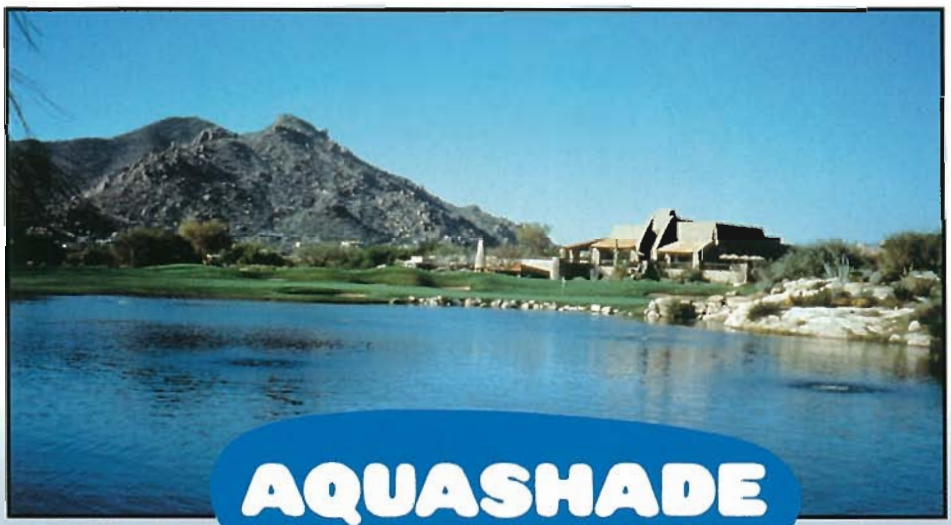

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Editorial

This issue of ***Aquatics*** focuses on management of two nonindigenous plant species of regional and national importance. One, *Hygrophila polysperma*, is a well known trouble maker in south Florida. Department of Environmental Protection surveys document hygrophila in an increasing number of public waters in central and south Florida (5 in 1982 - 29 in 1999). These surveys do not include numerous infested flood control canals in the southern part of the state. Managing hygrophila is difficult with existing technology and, as you will read, requires tenacious efforts.

Another nonindigenous species, Eurasian watermilfoil *(Myriophyllum spicatum)*, is an invasive submersed weed of national acclaim. Although not a severe problem in Florida, this non-native plant attained importance years ago in many states throughout the U.S. by causing problems similar to those created by hydrilla. These states are organizing their resources to intensively manage Eurasian watermilfoil.

Also in this issue is the second in a series of accounts of FAPMS history. The success and cooperation that aquatic plant mangers enjoy today in Florida is grounded in the dedication of our founding members. The fact that many of the original members are still working in the aquatic plant management field illustrates that it's not just an adventure, but a career!

SEE YOU AT THE ANNUAL MEETING!

Judy Ludlow

A mechanical harvester is used by the Old Plantation Water Control District to remove heavy infestations of aquatic plants and debris in South Florida.
Photo by Dave Sutton

Aquatics

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Contents

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Control of Hygrophila and other Aquatic Weeds in the Old Plantation Water Control District

Dennis Duke, Pat O'Quinn
Old Plantation Water Control District
and
David L. Sutton
University of Florida - IFAS

Introduction

The Old Plantation Water Control District (OPWCD) manages approximately 28 miles of waterways containing approximately 320 acres (A) of water within a 10,000-A area in the City of Plantation in southern Florida. The District was created in October 1946 as a Chapter 298 Independent Special District. Mr. Les Bitting was the District's first Superintendent. Also, Mr. Bitting was the first President of the Florida Aquatic Plant Management Society.

Canals in the OPWCD are designed to provide flood control for the residential community in the City of Plantation. These canals also recharge ground water in the area during periods of dry weather by bringing in water from the North New River Canal.

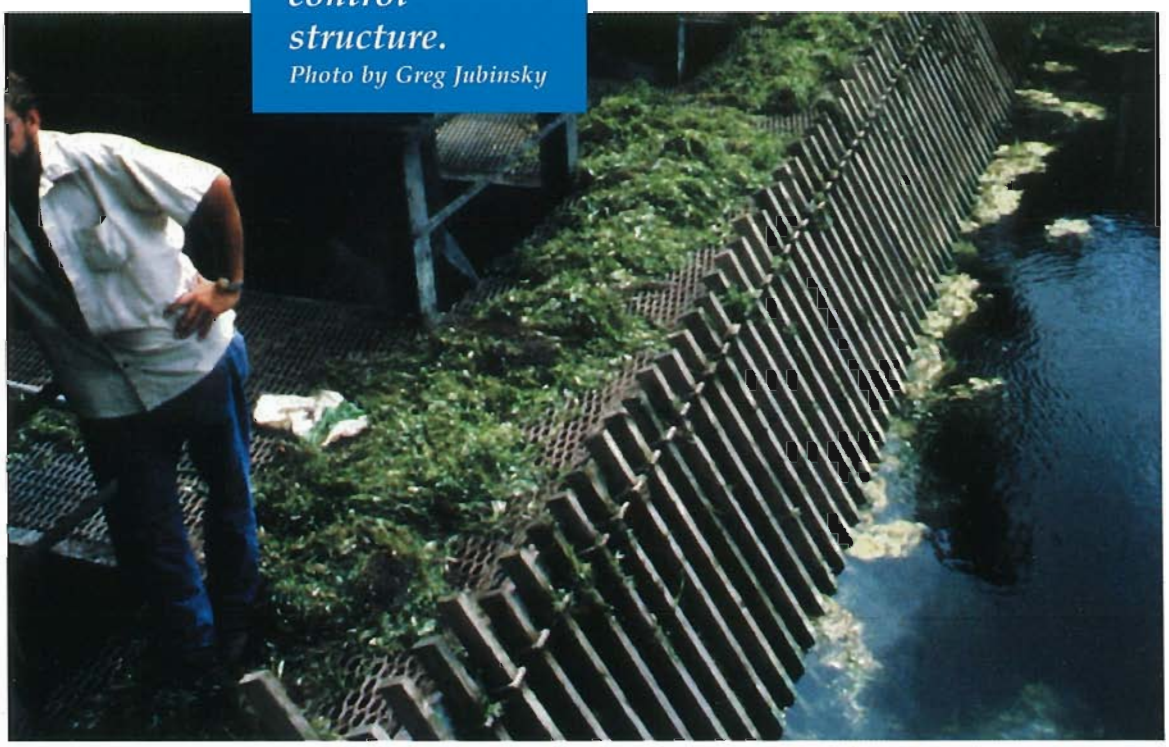
Operational techniques for management of aquatic weeds in and near canals in residential areas must deal with problems unique to these areas. This article provides information on techniques and methods used by the OPWCD to manage major aquatic weed problems in canals for a residential area.

Aquatic Plants Causing Problems

Southern Naiad was one of the first major aquatic plants to cause problems soon after formation of the OPWCD. For a number of years this Florida native was a major weed problem in the District's canals. Infestations of this submerged plant were especially thick and interfered with water flow in a canal along Broward Boulevard. Population growth in the City of Plantation required widening of Broward Boulevard, and a drainage culvert was installed to replace the open water areas of the canal along this road. Mr. Bitting always remarked that he had the solution to his aquatic weed problems, "just install drainage culverts for all the canals."

Water Hyacinth, Water Lettuce, and Duckweeds were early floating weed problems. Reward® (diquat) and judicious use of 2,4-D readily controlled these plants. Currently these plants rarely occur in the canals. Torpedograss replaced floating weeds along the shoreline areas of canals throughout the district, and is a continuing problem.

The submerged non-native invasive, Hydrilla, replaced Southern Naiad as the number one aquatic weed problem during the 1960's. Hydrilla, along with periodic infestations of duckweed, presented problems for many years for the



Hygrophila polysperna clogging flood control structure.
Photo by Greg Jubinsky

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OPWCD.

As Hydrilla was brought under control in the late 1980's to early 1990's with herbicides and grass carp, Hygrophila began to occur, and currently is the number one non-native invasive aquatic weed problem in the OPWCD.

Other problems that arise from time to time are caused by excessive growth of Fanwort (Cabomba), Eelgrass (Tape-grass), and various species of algae. Algae are commonly found growing with Torpedograss or floating mats of Hygrophila as these plants appear to provide favorable habitats for growth of the algae.

One factor that may have contributed to excessive growth of aquatic plants has been eliminated in the OPWCD's canal system. Infestations of Duckweed occurred for many years near the out falls of several sewage treatment plants. The elimination of sewage treatment plants appears to have helped reduce Duckweed problems.

Control Methods

Herbicides, grass carp, and mechanical harvesting are the primary methods used by the OPWCD to manage its aquatic weeds. Of these three methods, herbicides are used extensively because of their efficacy in controlling the aquatic weed problems in the canals.

Low bridges and access to canals for launching spray boats and other equipment are two major problems for the OPWCD. Commercially available air boats with spray equipment can not be used effectively in these canals, and the OPWCD modified a flat bottom boat with a hydraulically operated system that permits the raising and lowering of the motor and propeller housing surrounded by a protective cage to facilitate movement under numerous bridges (Figure 1). The OPWCD also employs a truck-mounted hydraulic lift to set the spray boat in canals when access is limited (Figure 2).

The majority of the canals in the OPWCD are located near the back

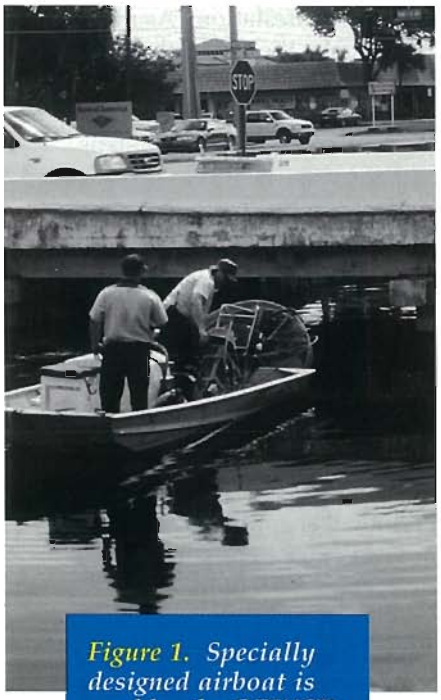


Figure 1. Specially designed airboat is used by the OPWCD to treat aquatic weeds. The cage is lowered to permit movement under the many low bridges over the canals.

Figure 2. The OPWCD uses a truck-mounted hydraulic lift to set the spray boat in canals when access is limited.

Photos by David Sutton

doors of homeowners. The OPWCD places notices on the front doors of homeowners with back yards adjacent to the treated canals to keep them informed of weed control activities in progress. Signs are also posted on the canal banks to keep the general public informed of herbicide treatments.

Herbicide Program

Hygrophila. Intensive management of Hygrophila is necessary to reduce the severity of blockages at OPWCD pump station structures. Infestations of Hygrophila are treated almost daily throughout the system and pump stations clogged with this invasive plant are manually cleaned on a continuous basis. The current application techniques listed below offer limited success with repeat applications necessary. A number of different herbicides and tank mixes (indicated by "plus") have been tried for control of Hygrophila problems. These included: Aquathol® Granular, Aquathol® K, Hydrothol® 191, Aquathol® K plus Komeen®, Komeen®, Reward® plus ProTeck™, and Reward® plus Clearigate®.

Herbicides currently used for floating mats of Hygrophila include a combination of Clearigate® plus Hydrothol® 191 with 0.75 gallons (gal) Poly Control™2 as a spreader sticker, or 2 gal of Clearigate® plus 1 gal of Hydrothol® 191 in a water carrier applied in 100 gal of spray mixture per acre (A). The herbicides are sprayed on the surface of the water with a handgun. For immediate results, a mechanical harvester is used to remove floating mats of Hygrophila lodged in the dead-end areas of canals.

Submerged Hygrophila is treated with an inverted combination of a low volatile ester of 2,4-D (Albaugh, SEE 2,4-D®) plus copper sulfate. These herbicides are mixed at a rate of 5 pints (pt) of 2,4-D plus 25 pounds (lb) of copper sulfate in 100 gal of water applied on the surface to 1.0 A. These same herbicides are applied subsurface with weighted

hoses. The Albaugh, SEE 2,4-D® is no longer registered for use, although other 2,4-D formulations may provide for control of Hygrophila.

Emerged Hygrophila plants growing on the shoreline are treated with a combination of 5 pt of the 2,4-D ester plus 25 lb of copper sulfate in a water carrier applied in 100 gal of spray mixture with Poly Control™2 applied with a hand gun to 1.0 A. This mixture is applied with a handgun to the plant foliage.

Hydrilla. Herbicides and grass carp have successfully controlled Hydrilla. When infestations of Hydrilla occur, grass carp, mechanical harvesting, or herbicides are used. Herbicides normally used for hydrilla are a combination of a chelated copper at 4 gal plus Reward® at 2 gal per A-feet (ft) of water. Any type of chelated copper works well with the Reward®. This treatment results in an average concentration of about 0.5 ppm of copper. In some situations, Hydrilla is allowed to grow to help reduce growth of Hygrophila. The Hydrilla can then be easily controlled when it becomes a nuisance.

Fanwort. Fanwort is generally not a problem, but when heavy infestations occur, the SRP formulation of Sonar® is applied at 40 lb per A in canals with an average depth of about 8 ft. Control of Fanwort with Sonar® will last for one year or more.

Torpedograss. For control of Torpedograss, Rodeo® is used at rate of 1% (1 gal of herbicide per 100 gal of spray mixture using a water carrier). The grass carp also helps with the control of Torpedograss by eating plants growing from the bank into the water. A combination of a 1% solution of each of Rodeo® plus Hydrothol® 191 has been used with relatively good success when algae occurs mixed with Torpedograss growing from the shoreline.

Algae. For algae control, chelated coppers are applied at the rate of 1 ppm for Chara. Lower rates, 0.2 to 0.5 ppm, are used for planktonic and filamentous algae depending on the degree of infestation. As mentioned previously, the Hydrothol® 191 mixed with Rodeo® for Torpedograss control helps remove algae along the shoreline areas.

Eel-grass. Eel-grass is controlled with Hydrothol® 191 at the rate 1.5 to 2.5 gal per A. Based on water depth, this results in a concentration of 1.0 ppm. For heavy infestations in large lakes, applications of 5.0 gal per A may be used with a resulting concentration of 2.0 ppm. Spot treatments are made in lakes and applied at intervals of 1 to 2 weeks. When the liquid or granular endothall is applied at 200 lb per A at an average depth of 4 to 5 ft, this rate is about 0.5 ppm.

Mechanical Harvesting

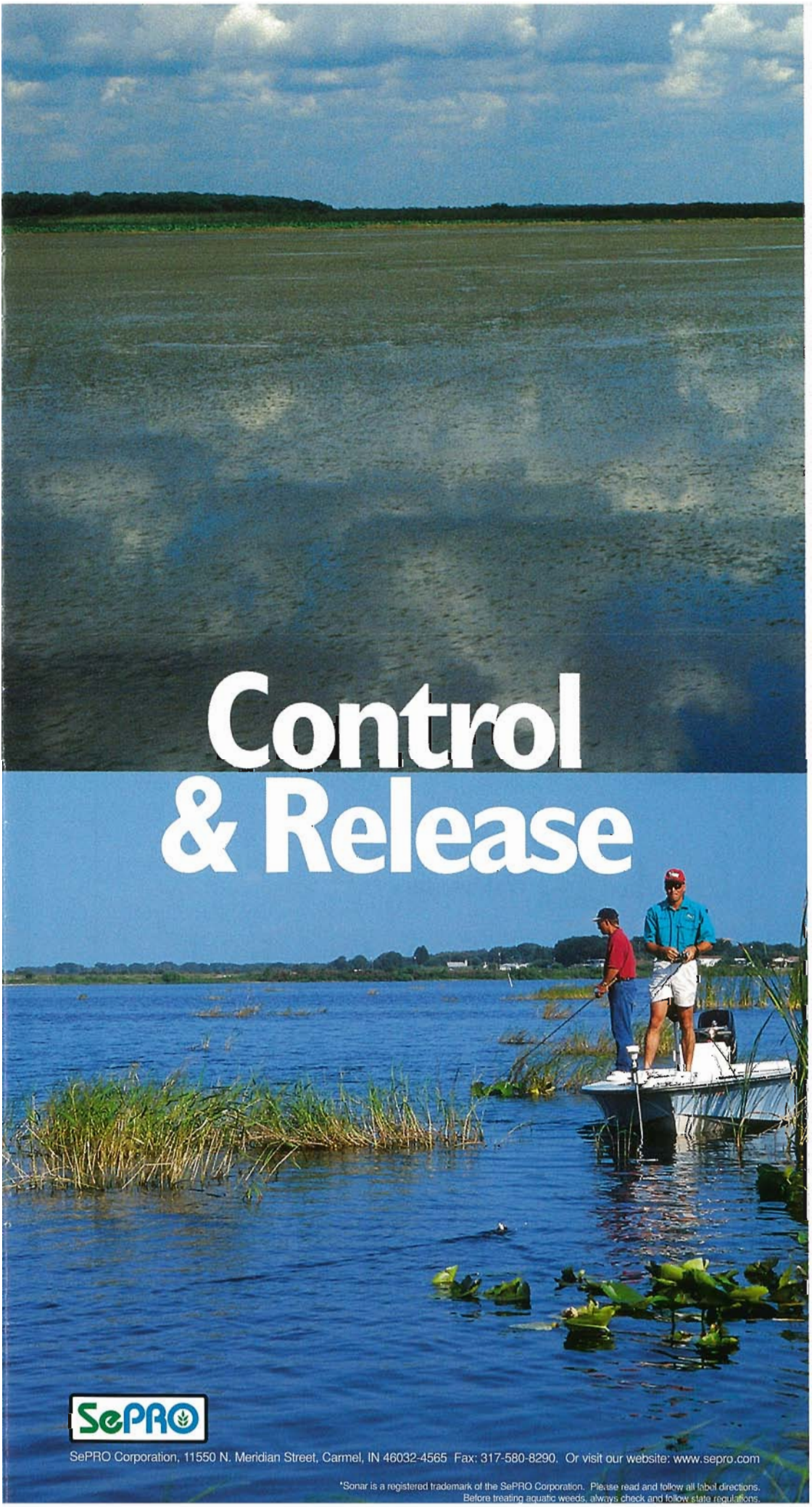
A mechanical harvester (cover photo) is used from time to time to remove dense infestations of aquatic weeds. The harvester is especially useful for removing floating mats of Hygrophila that accumulate in the dead end areas of canals. The harvester is also quite useful in removing floating debris and other objects that are dumped in the canals. Harvested plants are mixed with topsoil for use in landscaping areas throughout the City.

Stocking Grass Carp

The grass carp stocking program is listed in Table 1. Stocking is limited to replacement of fish loss due to an estimated mortality of 10% per year. The fish move freely throughout all canals, and therefore may not be concentrated in areas where heavy weed growth occurs.

Summary

The OPWCD provides flood control and ground water recharge to a residential community within a 10,000 acre area in southern Florida. The OPWCD makes special efforts by posting signs to keep the public



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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informed of its weed control activities because the majority of the canals are located near the back doors of homeowners. Herbicides are the primary method used by the OPWCD to control aquatic weed problems in a canal system with approximately 320 areas. Currently Hygrophila is the major aquatic weed problem. Herbicides, mechanical, and biological methods are used to control this invasive, submerged aquatic weed problem.

Acknowledgments

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Table 1. Grass carp stocking schedule for the OPWCD. Estimated density of grass carp is based on mortality of 20% first year and 10% thereafter.

Year	Number stocked	Estimated density (number per A)
1986	320	1
1987	-	<1
1988	10,000	32
1989	14,500	71
1990	-	59
1991	2,000	57
1992	8,000	73
1993	-	60
1994	2,000	55
1995	3,500	54
1996	18,638	99
1997	-	74
1998	5,220	59
1999	1,000	64
2000	-	57

You might be a "nozzlehead" if:

You install a new trigger kit on your spray handgun to take out any slack.

You find yourself explaining the differences between Polycontrol and Polygrip to your mother in-law.

You are talented enough to keep the tobacco juice off the airboat cage at full speed.

You enjoy talking about the orifice size of your trailing hose at a bar.

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Hopefully to be considered as light humor by most, this column is written for all the hardworking and caring professionals who dedicae their work afield to excellence in aquatic plant management. David Tarver

Eurasian Watermilfoil Update: Its Spread and Biocontrol

Eurasian Watermilfoil
Photo by Brian Nelson

Sandy Engel[1],
Woodruff Wisconsin
and
Holly Crosson,
Vermont Department of Environmental Conservation

Introduction

Eurasian watermilfoil (*Myriophyllum spicatum*) had a good year in 1999. It added another state and many new waters to its growing list of achievements. Not bad for a plant that relies on shoots and people to get around! But the plant could face new challenges in the coming decades: predation by weevils and competition from superweeds.

First described by Carlos Linnaeus in 1753, Eurasian watermilfoil (EWM) is native to Europe, Asia, and northern Africa. During the 20th century, the plant spread to every continent except Antarctica. Its earliest authentic record in America, from a Washington DC pond managed by the US Government, dates to 1942 (Couch and Nelson, 1985) and not to the 1880s as sometimes reported (Holm et al., 1969). From this humble start, it spread across a continent (Figure 1) to occupy lakes and rivers in 45 states and 3 Canadian provinces. Wisconsin tops the list of states with the most infestations: 319 of the state's 15, 057 waters are known to harbor EWM.

Ecology and Management

EWM produces seeds, like many rooted plants, but few of them sprout (Cobble and Vance, 1987). Instead, the plant relies on fragments—pieces of stem torn by waves or boaters— to establish new populations. The cuttings drift downstream or across water bodies, developing roots and branches while afloat. Many become entangled on boats or boat trailers and hitchhike overland to new waters. When these drifters sink or wash ashore, their new roots help anchor the plants (Kimbel, 1982). Many fragments very likely die before spring: roots fail to form, waves keep the stems adrift, or ice-cover limits photosynthesis. The few stems that do survive become founder colonies: pioneers that take root form runners (stolons), and produce new fragments that establish yet more colonies (Engel, 1994). Inch by inch, stem by stem, EWM claims a lake...and crosses a continent.

EWM is a devilish competitor, a Count Dracula that sucks the diversity from biodiversity. Its liking for habitat disturbed by boaters, swimmers, over-winter drawdowns, herbicides, and harvesters has helped this vampire take root and spread its fragments. Early and rapid spring growth, profuse and sunlight-sap-

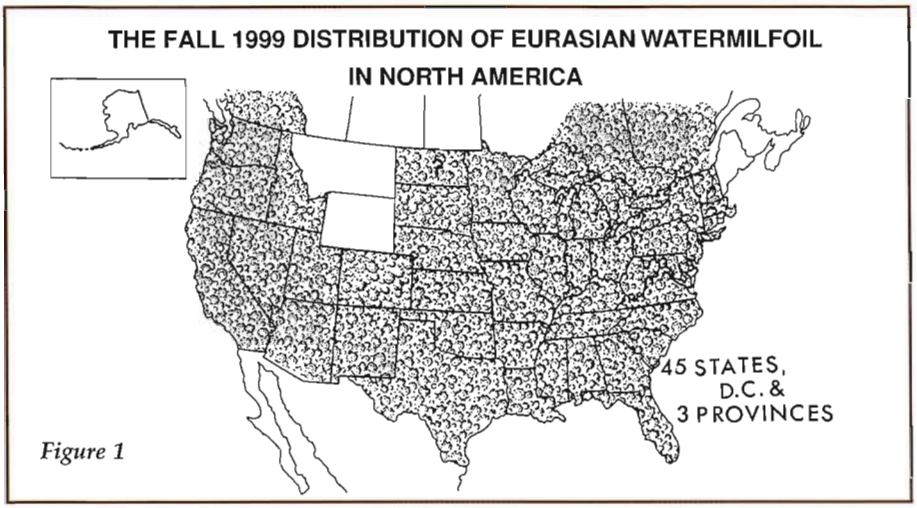

Figure 1

ping stems, and fondness for lake surfaces have let EWM dominate—sometimes replace—native plant species (Smith and Barko, 1990).

To manage EWM well—to duke it out with the devil— takes a planned attack (Engel, 1989). Control methods should be integrated and used wisely, even judiciously (Nichols et al., 1988). Early detection by lake managers and citizen volunteers can limit the spread of founder colonies and minimize both costs and damages. Herbicide use, hand removal, mechanical cutting, and mechanical harvesting (cutting and removing) have helped manage infestations (Madsen, 2000)...but to varying degrees of success. Herbicides can impact non-target plants, and cutters and harvesters are site specific but allow fragments to sink and drift ashore. Frustrated by a pest that seems forever to spread, managers have sought other forms of control.

Enter biocontrol. Why not let biological organisms control biological organisms? Find something that eats EWM and let it control the plant. That something proved to be a vegetarian weevil. Vermont scientists noticed the beetle in a pond and, after a decade of labor, helped develop a promising method of controlling EWM.

The Weevil Story

The Vermont Department of Environmental Conservation joined the biocontrol movement in 1989. Biologists had noticed a natural decline of EWM in Brownington Pond, 158 acres and 34 feet deep in northeastern Vermont. A closer look revealed three species of plant-eating insects on watermilfoil.

In 1990, the department received a five-year grant of about $500,000 from the United States Environmental Protection Agency's (EPA) Clean Lakes Program. The funds were used to learn whether the Brownington Pond insects caused EWM to decline and, if so, whether the beetles could control the weed in other Vermont ponds and lakes. Middlebury College, Vermont, became the center for this weevil work. News spread, and lake managers elsewhere waited anxiously for results.

After some preliminary work, research focused on one plant-eating species: a tiny beetle with a tyrannosaurus name, *Euhrychiopsis lecontei* (U-ryk-ee-op-sis le-kon-tee-eye) (Figure 2). The insect comes from a large family of land lubbers, including the Mexican boll weevil of cotton-chewing fame. Fortunately, the watery weevil from Brownington Pond is homegrown, a native of Vermont...and many other states. It has now been found in 35 of 52 Vermont lakes with EWM, 53 Wisconsin lakes (Jester, 1998), and scattered locations throughout the continent.

So what else did the Brown-

ington biologists discover? Both crawling larvae and leaf-hopping adults ate EWM: the larvae after hatching from eggs, the adults after pupating and landing on the shoots. The density of EWM in Brownington Pond was related to the density of weevils: when weevil numbers were up, plant density was down (Creed and Shelton, 1993, 1995). More weevils meant more milfoil munching and thus less milfoil. But weevils, young and old, did not have to devour whole plants to control the EWM population. Controlled experiments showed that weevil-damaged stems were less viable than undamaged stems: less apt to grow and spread. By chewing the stem tips (apical meristems) larval and adult weevils slowed plant elongation (Figure 3). By eating side shoots (lateral meristems) the weevils suppressed branching. By damaging food channels within the stems, the insects slowed root production. By tunneling into stems, larvae can deplete EWM's carbohydrate reserves which might impair the plant's ability to survive winter. As stems and roots wore out, weevil-infested EWM had trouble replacing parts.

Figure 2. Eurasian watermilfoil weevil (Euhrychiopsis lecontei)

Figure 3. Right, adult weevil (Euhrychiopsis lecontei) on Eurasian watermilfoil meristem

Photos by R.M. Newman Lab, University of Minnesota

Laboratory experiments, offering weevils a choice of EWM or up to 16 native plant species, showed that weevils attacked only watermilfoil plants, including northern watermilfoil (*Myriophyllum sibiricum*): a less pesky native resembling EWM (Sheldon, 1997).

Since 1993, the department has stocked over 100,000 weevils in Vermont lakes and has helped lake associations rear their own weevils. Now something else is spreading: interest in weevil research and stocking. Weevil programs have sprouted in Illinois, Massachusetts, Michigan, Minnesota, New Jersey, New York, Ohio, Washington and

Wisconsin. Citizens can even buy laboratory-reared weevils to help manage EWM.

Researchers and lake managers across North America are hoping that native weevils can provide cost-effective, long-term control of EWM without harming native plants and other non-target organisms. But questions remain. Will control last? Do fish eat the weevils? Can weevil control be integrated with other control methods? Does nutritional value of EWM effect weevil growth and survival? Such concerns and mixed research results—EWM declining in some lakes but not in others—point to more research needed before weevils become part of every lake doctor's bag of EWM remedies.

Learn more about EWM and its weevil worries by searching the internet using the keyword "milfoil" or by visiting these websites: http://aquat1.ifas. ufl.edu, or www.fw.umn.edu/research/milfoil/milfoilbc.html.

Future Exotics?

In the coming decades, lakes in North America could be invaded by exotic plants even more aggressive that EWM. Consider hydrilla (*Hydrilla verticillata*), a relative of our native elodea (*Elodea canadensis*) and spreading like a superweed: not a mere Dracula but a green cloaked Darth Vader! Unlike EWM, hydrilla produces resting tubers and buds to aid its spread and winter survival. Other warrior weeds that have become established and are invading new territory as well include flowering rush (*Butomus umbellatus*), spiny naiad (*Najas marina*), Egeria (*Egeria densa*), water chestnut (*Trapa natans*), and giant salvinia (*Salvinia molesta*).

State agencies must continue to organize against these invaders, to build a national network of exotic species control. More money, education, citizen involvement, trained professionals, and interagency coordination are needed to strengthen this management network to keep these exotics not just at bay but out of our waters.

So this EWM update, coming at the start of a new millennium, is meant not just to inform but also to alert. We wish to sound an alarm, to issue a clarion call to action. Given how unprepared Americans were for EWM's arrival, states should plan now to fight these new invaders. A superweed, one much worse that EWM, could soon come to a shore near you!

References are available on request.

Acknowledgements

We thank John W. Barko, Richard W. Couch, Robert P. Creed Jr., Laura L. Jester, John D. Madsen, Stanley A. Nichols, and Sallie P. Sheldon—as well as dozens of other watermilfoilers—for contributing so much to our understanding of EWM: its spread and biocontrol.

[1]Sandy Engel, retired from the Wisconsin Department of Natural Resources, welcomes correspondence at P.O. Box 648, Woodruff, WI 54568, 715-358-2961.

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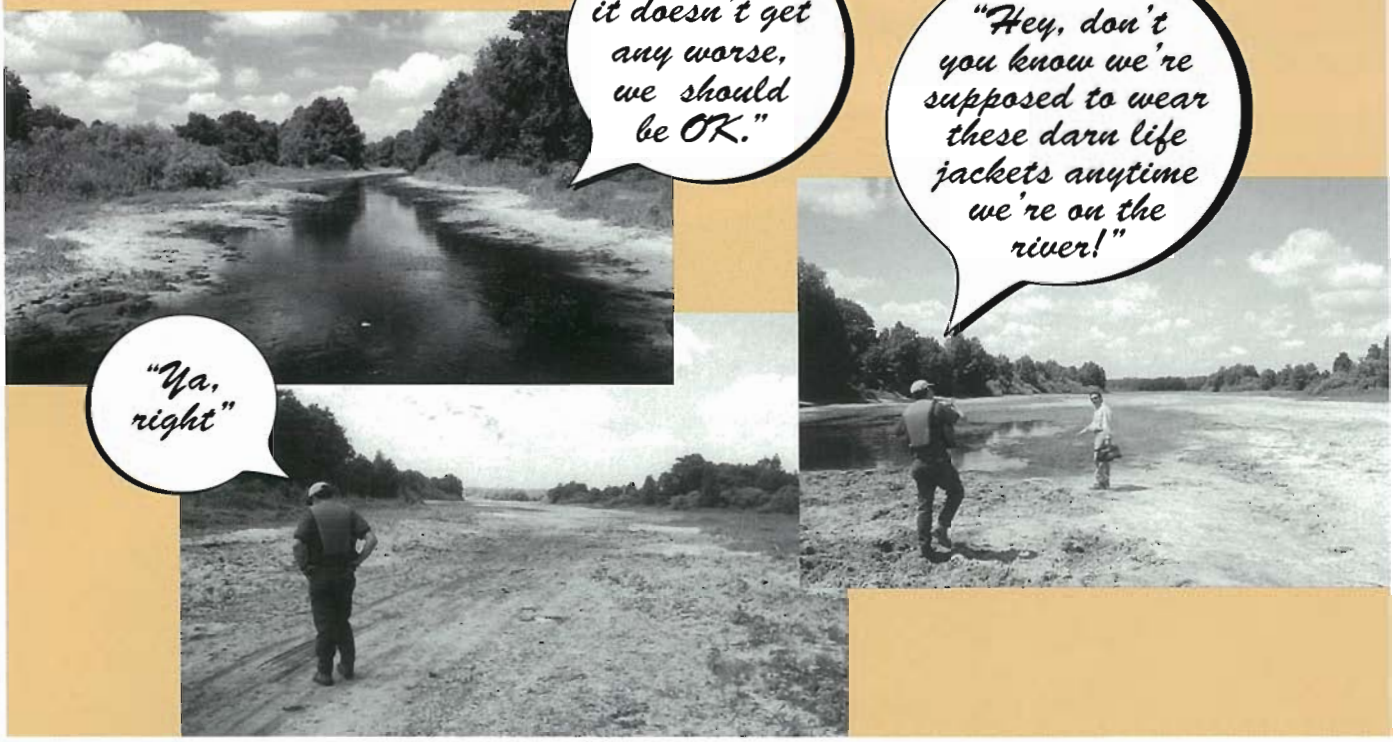
Scenes from Drought Stricken Withlacoochee River, Citrus & Sumter Counties, Florida. Photos by Jim Kelley



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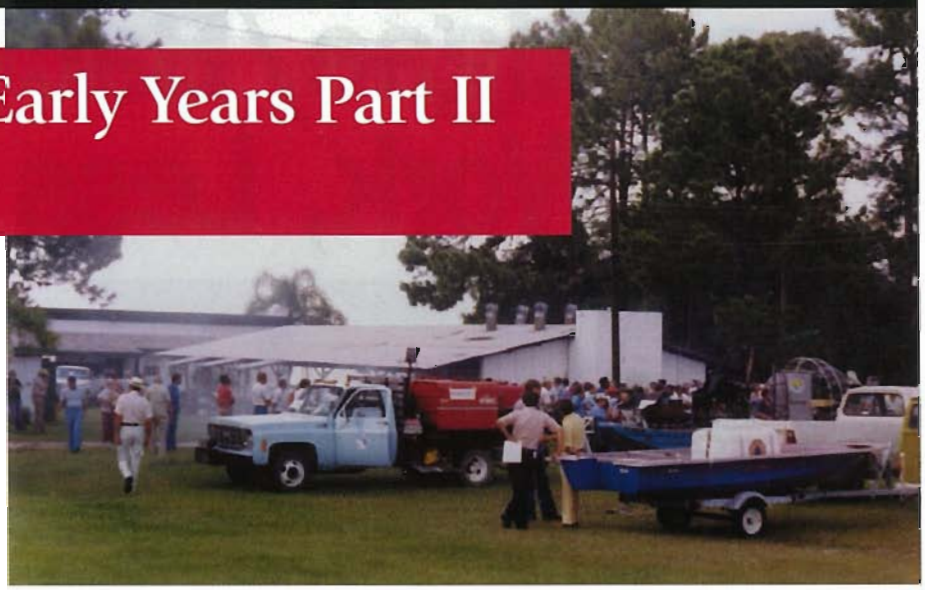

FAPMS 1979 3rd Annual Meeting - BBQ festivities.

This is a continuation of the early history of the Society. Part 1 can be found in the Summer 1999 issue of *Aquatics*. The purpose of writing this history is that we tend to take what we have for interagency cooperation, regulations, and agency structure for granted. In fact, it was not always so good, and we have the efforts of those who came before us in the Society to thank for our current situation.

1978

In 1978 the officers were:

President – Les Bitting (Old Plantation WCD)
Vice President – Harold Brown (H. F. Brown, Inc.)
Secretary – Gordon Baker (SFWMD)
Treasurer – Porter Lambert (SWFWMD)
Newsletter Editor – Vernon Vandiver (UF)
Directors – Charles Hargrove (Rodia), Clarke Hudson (Chevron), and Bill Maier (DNR)
The Board selected the following chairman: Legislative – Clarke Hudson, Program – Pete Pederson, Membership – Harold Brown, and By-laws – Herb Cummings.

The biggest issue in 1978 was the publication of *Aquatics*. A company that had presented a proposal to the Board was rejected since they wanted ownership of the *Aquatics* name and logo. The Board felt that the name and logo should remain the property of the Society. Negotiations with this company were suspended and the Board proceeded with trademarking *Aquatics*. In June, a special board meeting was called since another publishing company had been contacting potential advertisers in the name of *Aquatics*. The Board drafted a disclaimer that was sent to all potential advertisers and later selected Southeastern Printing Company to serve as the publisher.

The 2nd annual meeting was held in Orlando at the Howard Johnson's Motor Lodge on Lee Road, October 5-7, 1978, with 248 registrants. Membership was reported at 307. Bob Blackburn served as local arrangements chairman and for the first time made arrangements for indoor displays. Because the Society had gotten so quickly involved in legislative activities the President asked the Board for their opinion. The answer was that the Society should play an active role in determining legislation and the rules that impact Society members.

1979

In 1979 the officers were:

President – Harold Brown (H.F. Brown, Inc.)
Vice President – Bill Haller (UF)
Secretary – Joe Joyce (USACE)
Treasurer – Porter Lambert (SWFWMD)
Newsletter Editor – David Sutton (UF)
Directors – Carlton Layne (EPA), Tom Drda (GFC), Clarke Hudson (Chevron), and Bill Maier (DNR)
The Board selected the following chairman: Nominating – Pete Pederson, Membership/ Publicity – Bill Haller, By-laws – Henry Simmons, Legislative – Les Bitting, Program – Bob Gates, Local Arrangements – Nick Sassic.

During 1979, several important items were discussed on the state level which were: applicator recertification procedures, the state wide organizational structure for the aquatic plant management program, the need for subclassification of Class III waters for aquatic plant control permitting, and placing the aquatic plant control permitting function with the water management districts. These issues culminated in the American Assembly Conference on Aquatic Weed Control September 25-27, 1979, which resulted in 26 recommendations and several changes. These changes were: 1) DNR should be the State's lead agency in permitting weed activities, 2) GFC would not pursue operational activities but would be solely responsible for grass carp permitting, and 3) an advisory council would be established to provide input to DNR as the lead agency.

The name *Aquatics* was secured as the property of the Society and was registered with the Secretary of State along with the logo. The *Aquatics* logo was modified to make the "A" in the shape of Florida, and the first issue was published in March 1979. Bill Maier served as the editor until the December 1980 issue.

Much also changed within the structure of FAPMS during this year. The name of the legislative committee was changed to the governmental affairs committee at the request of the chairman, Harold Brown. An awards committee was created and John Adams appointed chairman. This committee would collect door prizes for the annual meeting and develop criteria for the "Applicator of the Year" award which would be presented at the

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annual meeting. It was discovered that the bylaws had undergone several changes without being reprinted. Copies of the by laws were furnished to the membership, and a procedure established so that changes could be followed in the future. A procedure list was created for the program and local arrangements committees. The committee on state standards for application, chaired by Joe Schweigart, began to develop a proper application technique guide patterned after the certification manuals. When Porter Lambert was unable to finish out his term, Tom Minter was appointed as interim Treasurer.

Dee Brown started the process of obtaining IRS tax exemption status for the Society. The reason for this so that the Society would qualify for a lower postage rate. Dee found that no tax returns had been filed since the formation of the society. The category of tax exempt status was discussed at length because of the Society's legislative involvement and the selling of ads for *Aquatics*. Dee Brown also served as the Society's first historian and designed the Society logo, which is still in use today.

The 3rd annual meeting was held at the Howard Johnson's in Orlando, October 3-5, 1979 with the theme "Applicator Operating Decisions." Some of the presentations were "Maybe I Should have Read the Label" by Carlton Layne, "Preliminary Results of Melaleuca Control Studies at Lake Okeechobee" by Randall Stocker, and "Investigation of Ferric Citrate for Control of Hydrilla" by Gordon Baker. A panel composed of field applicators also answered questions. The board passed a resolution supporting the recommendations made in the final report of the America Assembly Conference and made recommendations for representatives to the advisory council. This resolution was sent to Governor Graham. The first presidential award was given to Jay Landers, former interim director of DNR, since he was instrumental in establishing the American Assembly Conference.

By year's end, paid membership stood at 363. FAPMS was beginning to have a national impact with the announcement that South Carolina was forming a state chapter based on by-laws similar to FAPMS. A finalized copy of the Society's proposed State Standards for Aquatic Weed Control was submitted to DNR for inclusion in the State Plan.

1980

In 1980 the officers were:

President – Bill Haller (UF)
President Pro Tem – Joe Joyce (USACE)
Secretary – Clarke Hudson (Chevron)
Treasurer – Carlton Layne (EPA)
Directors – John Adams (SFWMD), Tom Drda (GFC), Bill Maier (DNR), and Nick Sassic (Orange Co)
The committee chairmen were: Nominating – Les Bitting, Governmental Affairs – Harold Brown, Awards – Danny Riley, By-laws – Elroy Timmer, Membership – Joe Joyce, Local Arrangements – Bill Moore, and Program – Jim McGehee.

The January Board meeting was a milestone in FAPMS history. Dr. Elton Gissendanner, executive director of DNR and Col. Robert Brantley, executive director of GFC

met with the Board and answered questions about DNR/GFC aquatic plant control agreement. The main concerns of the Board were that a strong advisory council will be established and that former GFC hyacinth control personnel would be offered other positions. Col. Brantley positively addressed both concerns.

At the state level there were also changes. GFC repealed chapter 39-8 FAC, effective October 23, 1980 which transferred aquatic plant control permitting to DNR and GFC personnel found new positions within GFC or with the water management districts and DNR. DNR began drafting 16c-20 Aquatic Plant Control permitting rule, to replace the GFC rule in August. Several herbicides, Silvex, Fenac, Dalapon, and Amtrole lost their 24(c) label registrations since fish or water tolerance limits had not been established and EPA had recently ruled that these tolerance were necessary for continued aquatic registrations. This left applicators without any labeled products for aquatic grasses and cattails.

The first meeting of the Aquatic Plant Technical Advisory Council was held in July. The council was established to review and make recommendations to DNR on control operations and research. Harold Brown (H. F. Brown, Inc.) was elected chairman, with Dr. Arnett Mace (UF) to serve as vice chairman and Dr. Alva Burkhalter (DNR) to serve as secretary. Joe Joyce represented the Society. The advisory council became concerned about the lack of herbicides available for use on grasses and cattails in water and recommended pursuit of Section 18 (emergency exemption) from EPA for two herbicides, Roundup and Sonar.

On the national political scene, the Friends of the Earth had petitioned EPA and the FAA to change the rules concerning aerial pesticide applications so that written permission would be required from all adjacent landowners prior to treatment. A successful letter campaign by many Society members helped to stop this proposal. FAPMS joined the Council for Agricultural Science and Technology (CAST) at $50 per year in order to keep up with changes in herbicide application and labeling on a national level. EPA started funding a research program to develop an integrated aquatic weed management program.

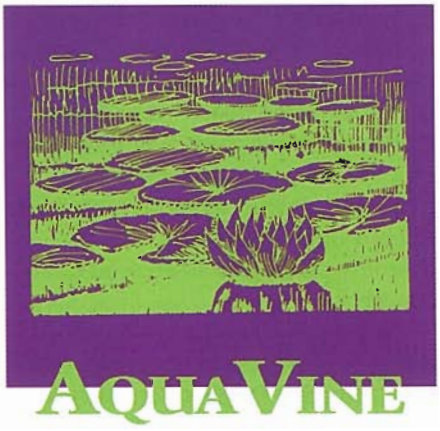
The quarterly Society newsletter received a facelift. New additions were printing the presidential address, treasurer's report, meeting minutes and committee reports. The logo and colored ink were used for the first time. David Tarver was appointed as the newsletter editor by the Board. The decision was made to send *Aquatics* to APMS and other state chapters. This necessitated the creation of two mailing lists, one for active members and a complimentary list. The AquaVine column was added to *Aquatics* to provide information on current events in the aquatic plant industry.

Other changes happened within the membership. The paid membership reached 455 by mailing membership solicitations to all

certified aquatic applicators in the state. Bill Maier suggested that the Society conduct a "motto contest" with the prize being free registration to the meeting, which was approved by the Board. A total of 75 submissions for the motto contest were received. Len Bartos from SWFWMD submitted the winning motto, "Preserving Florida's Water Heritage". Another chapter, the Midwest APMS started up this year. Hygrophila and Limnophila were mentioned as new plants for control efforts.

The 4th annual meeting was held at the Howard Johnson's on Lee Road, October 29-31, 1980 with a registration of 300. To assist with planning efforts for the meeting the Board established a pre-registration fee of $15 and $25 for registration at the meeting. A new award, the "Applicator of the Year" (also known as "Aquatic Plant Manager of the Year") was established and the first recipients were Louis German and Philip Jones of SWFWMD. The first photo contest was held but had few participants. The banquet was a memorable BBQ, cooked by FAPMS members including the president, on the shores of Lake Apopka. A number of by-law changes were passed by the membership including the increasing the number of directors to nine and transferring the newsletter duties to secretary. The first Society merchandise sold were baseball caps with the logo.

There were several notable personnel changes. Mary Harris left the FDACS Pesticide Bureau Chief position for a faculty position with Louisiana State University. Phil Phillips retired from the FGC after 30 years of service as a spray pilot. Phil had the distinction as being the first person hired by the state for aquatic weed control (See *Aquatics* Vol. 19 #2) Mike Dupes joined the US Army Corps of Engineers in Jacksonville.



Meetings

FAPMS Board Meeting, October 2, 2000, Todd Olson 800-327-8745

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

The 7th International Conference on Wetland Systems for Water Pollution Control, November 11-16, 2000, Lake Buena Vista, Florida, Grosvenor Resort. Contact University of Florida IFAS at 352-392-5930 for more information.

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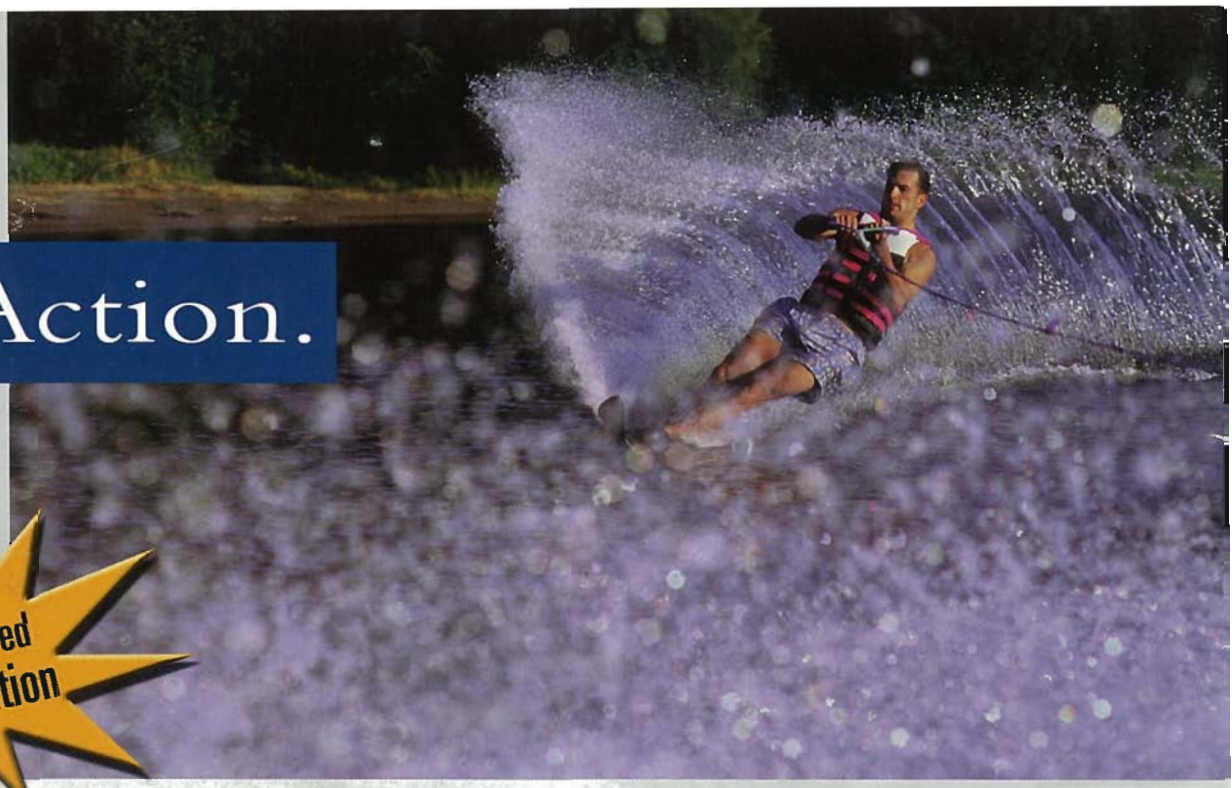

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