Aquatics

Summer 2000

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

Crystal Blue™

PREMIUM AQUATIC CHEMICALS

Your Pond & Lake are Our Priority!

- Highest Quality for Professional Applicators
- Compare Our Ingredients with any Other Brand
- Environmentally Safe for Fish & Livestock
- The high Concentration creates a deep blue effect.

NOW AVAILABLE AT...

TSC TRACTOR SUPPLY CO®

VISIT OUR WEBSITE

www.tractorsupplyco.com

OR CALL FOR THE LOCATION NEAREST YOU 615-366-4600

NOW IN FLORIDA

FT. PIERCE • ST. CLOUD
CHIEFLAND • LAKE WALES
LEESBURG • SEBRING
AVON PARK • EUSTIS
OKEECHOBEE

Letter to the Editor

As we conclude the 20th century and the first 100 years of Invasive Plant Management, we are at an opportune time to evaluate what we have done over the past 100 years. We must determine what will sustain us over the next 100 years and how we can build bridges into the future. These bridges must be paved with ideas and be comprised of the many invasive plant management programs uniting to take us from how we operate today to how we need to operate in the future to achieve the vision of preserving the real and natural Florida.

It is evident there isn't one invasive plant effort or program in Florida that can exist in isolation from other programs dedicated to invasive plant control. Therefore, in February the Bureau of Invasive Plant Management invited land managers, planners, biologists, educators, conservationists, nursery representatives and many more to meet at the Invasive Plant Summit 2000 at Palm Coast. One of the goals for the Summit was to build bridges to the future by bringing together the many players involved in invasive plant management; and have them jointly identify and focus on possible outcomes that would better manage, and reverse the rapid spread of aquatic and upland exotic plants in Florida. The four areas of focus where: management priorities, research and outreach, prevention and assessment tactics, and restoration efforts. As a result of everyone's participation at the Summit, many ideas were generated that will assist in our efforts to achieve our vision. The results of the Summit are being put together to create a document that will represent the discussions at the summit and ideas of how to make some of those discussions a reality.

I am grateful to all those who participated and the organizations they represent. I look forward to the continued joint efforts of the many programs in the state dedicated to invasive plant control and I am confident we can continue to show the nation how best to control invasive plants.

Bill Torres

Butterweed (*senecio glabellus*) creates a spectacular burst of color along the shady banks of Sugar Mill Run at Florida Caverns State Park.

Photo by Mark Ludlow

Aquatics

Summer 2000/Vol. 22, No. 2

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

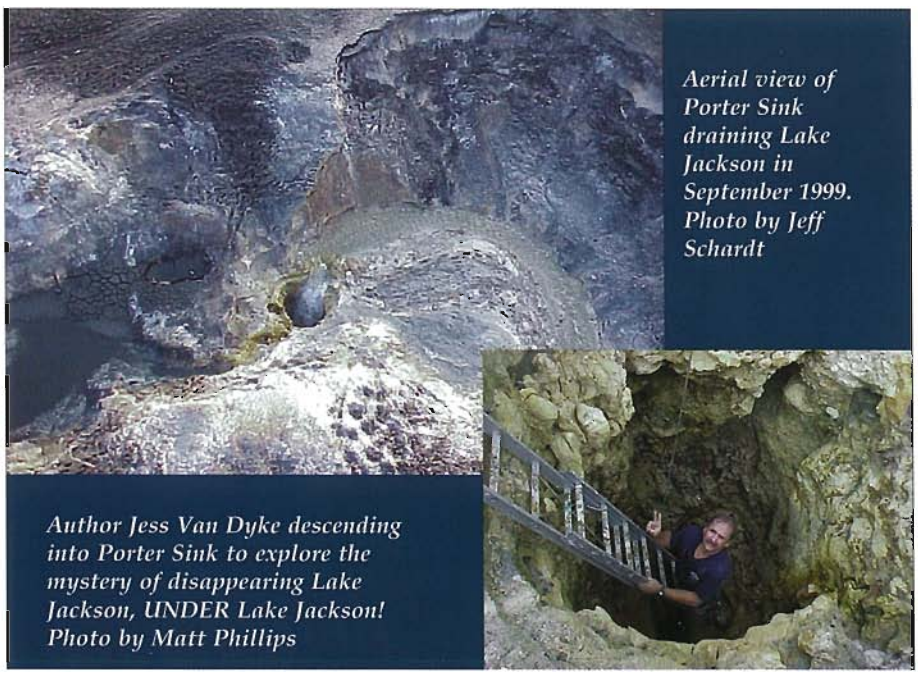
Aquatic Plant Management in a Disappearing Lake

Photo by Jeff Schardt

By
Jess Van Dyke, DEP,
and Judy Ludlow, DEP

Introduction – A lake disappears

At sunset on September 16, 1999, most of Tallahassee's 4000-acre Lake Jackson quickly disappeared down an 8-foot wide sinkhole to the amazement of a crowd of onlookers. The periodic swallowing of Lake Jackson by the sinkhole, known as Porter Sink (Figure 1), has been documented since the late 1800s. Always coinciding with long-term rainfall deficits, such natural drawdowns last occurred in 1957 and 1982. This most recent event followed a drought that caused a steady lowering of the water level which divided the lake into isolated pools as ridges on the lake bottom became exposed. The last remaining area of a large pool connected to Porter Sink in the central portion of the lake drained quickly on the afternoon of September 16, 1999, trapping fish, birds, and alligators in the sink area. As word spread about the lake's draining, many people joined opportunistic wading birds easily catching the trapped fish by hand. Daring young men walked away with huge stringers of trophy bass. At dusk, the remaining water and fish had disappeared down Porter Sink. On May 6, 2000 another sinkhole, called Lime Sink, drained more of the lake's remaining water. Though shallow pools still occurred in portions of the lake, more than 90% of the 4000-acre lake had vanished!



Aerial view of Porter Sink draining Lake Jackson in September 1999. Photo by Jeff Schardt

Author Jess Van Dyke descending into Porter Sink to explore the mystery of disappearing Lake Jackson, UNDER Lake Jackson! Photo by Matt Phillips

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.

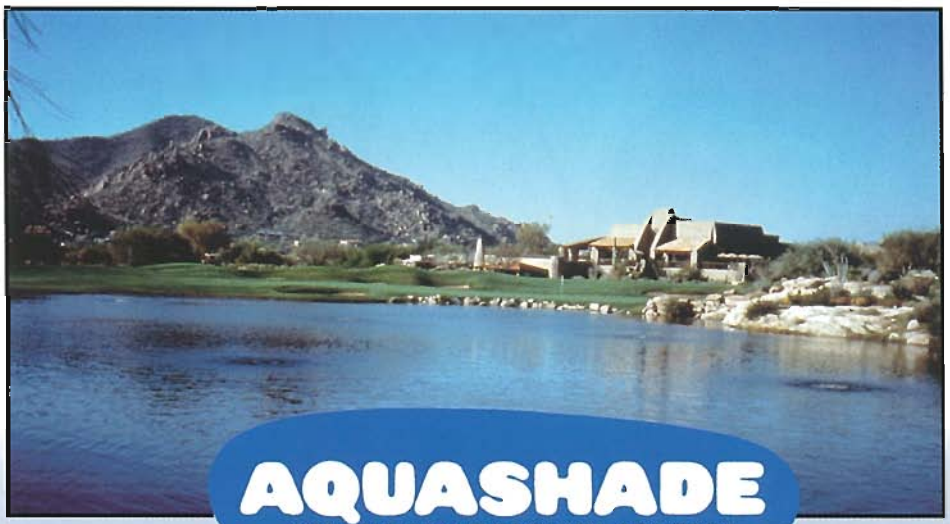
Get in touch with an aquatic weed specialist, aquatic applicator, or call Elf Atochem at 1-800-438-6071.

elf atochem

ATO

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

AQUASHADE COLORS WHILE IT CONTROLS AQUATIC PLANTS.



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

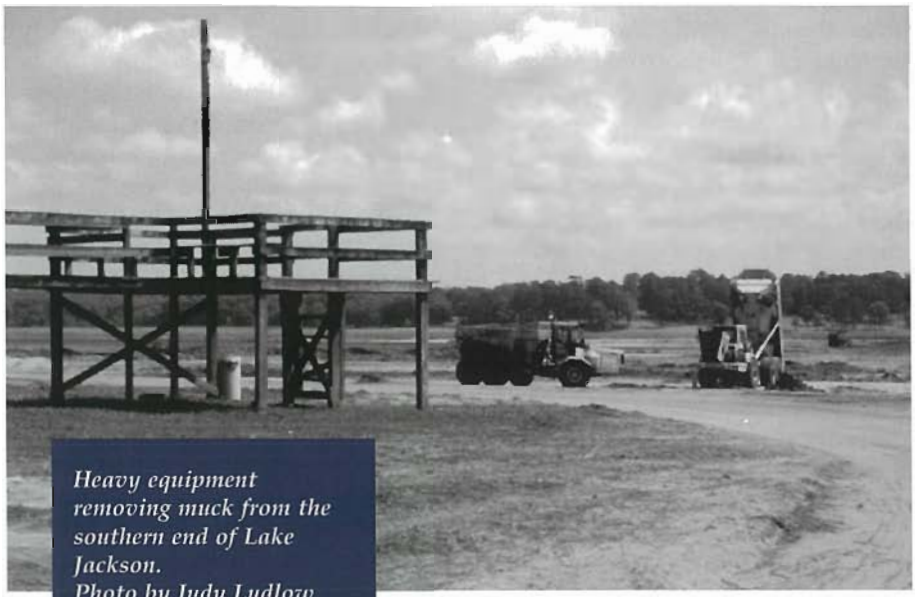
applied biochemists
a division of Laporte Technologies & Biochem, Inc.

QUALITY PRODUCTS FOR WATER QUALITY

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

Lake Restoration – Opportunity Knocks

Local lake managers saw a great opportunity in this apparent tragedy. Watershed development beginning in the 70's, including the construction of an interstate highway, and two malls, caused a thick layer of polluted sediments to accumulate in the southern portion of the lake. The resulting nutrient pollution finally reached a threshold in the mid-80's that created frequent exotic plant problems and bluegreen algae blooms. In 1994, the North West Florida Water Management District's (NWFWMD) Surface Water Improvement Management Plan for Lake Jackson had emphasized the need to remove this nutrient-rich, organic muck. Sediment removal from a dry lake bottom is much more cost efficient than hydraulic dredging in a full lake, and for a project this big, cost efficiency was paramount. Years ago in anticipation of low water conditions, local lake managers with the Florida Fish and Wildlife Conservation Commission (FWC), Leon County, the Department of Environmental Protection (DEP) and the Northwest Florida Water Management District began planning to take advantage of the next natural drawdown. This team of experts, known as D.I.R.T. (Drawdown Interagency Restoration Team), initiated a cooperative restoration project as part of an overall effort to reduce nutrient cycling. D.I.R.T.'s specific goal was to efficiently remove the polluted sediment overlaying the lake bottom in the southern half of the lake. Additionally, plans are underway to retrofit the stormwater systems in Lake Jackson's watershed.



Heavy equipment removing muck from the southern end of Lake Jackson. Photo by Judy Ludlow

As with the project's design, obtaining funding for this ambitious task was a collaborative effort. Leon County contributed $2 million to kick off the project and added another $2.46 million during the second phase, FWC spent $400,000, the NWFWMD provided funding in excess of $600,000, and DEP provided $250,000. Amazingly, the first piece of heavy equipment rolled onto the lake bottom the day before the sinkhole went dry and the work has been nonstop since then. If dry conditions persist and additional funding becomes available, muck removal will continue through the summer of 2000. The focus of the first phase was to restore the two southern arms of the lake, Meginniss Arm and Fords Arm (Figure 1). These areas receive stormwater runoff from the most heavily urbanized portions of the lake's watershed. The project's concept is relatively simple — a one to three foot thick layer of organic material is scraped from the lake bottom with bulldozers, track excavators, and other equipment and trucked from the lake bottom to upland disposal sites. By the end of April 2000, about 1 million cubic yards of aquatic plant biomass and associated muck had been removed, and funding was available to remove an additional 380,000 cubic yards. To put this in perspective, the volume of organic sediment removed from Lake Jackson is sufficient to cover an entire football field with a mound over 800 feet tall!

Aquatic Plant Management – a dynamic situation

The density and composition of Lake Jackson's aquatic plant community has changed through time. In the mid-1950s, for example, floating and emergent vegetation was relatively sparse, with the exception of a fringe of maidencane (*Panicum hemitomon*). By the early 1960s, however, plant populations reportedly expanded but remained composed of native species. Plant coverage increased further during the 1980s, particularly in the more nutrient-rich southern and western portions of the lake. Non-native species, such as water hyacinth (*Eichhornia crassipes*) and hydrilla (*Hydrilla verticillata*), were well established by this time. The presence of these invasive plants in Lake Jackson has had a number of implications to this renowned bass fishing lake. Native plants, fish and wildlife, water quality, aesthetics, and a variety of recreational pursuits could all be threatened by unmanaged invasive plants. Leon County, in turn, could lose economic and quality-of-life benefits associated with a lake recognized as an Aquatic Preserve and Outstanding Florida Water. The economic benefits alone have been estimated to be $10,000,000 per year to the local economy. Invasive aquatic plants, however, have been managed on Lake Jackson since the 70's.

As a result of these control efforts, the populations of water hyacinth on Lake Jackson are at maintenance control levels. During 1999, for example, private contractors working for the DEP Bureau of Invasive Plant Management treated only16 acres of water hyacinth on Lake Jackson. The level of hydrilla in Lake Jackson, however, is more dynamic. Hydrilla has been documented in Lake Jackson at least since 1974 and expanded dramatically during the mid-1980s. Its biomass increased greatly in 1986 and has since presented a serious lake management problem. Hydrilla has been managed on Lake Jackson regularly since 1987 using the herbicide fluridone. Low rates of fluridone have been successfully employed in late winter to suppress hydrilla without harming the diverse, native submersed plant community. Managers are currently concerned that when the lake re-fills, hydrilla tubers will quickly germinate gaining a competitive edge over the native submerged plants on the bare lake bottom. So, in addition to muck removal efforts, a contingency plan has been developed to control hydrilla growing in any remaining shallow water in the lake. Hopefully, this will prevent dense hydrilla colonization of deep areas when the lake re-fills. Additionally, hydrilla will be aggressively treated upon the reflooding of the lake.

Conclusion

The removal of the undesirable aquatic plants and associated nutrient-rich organic muck from Lake Jackson will unquestionably have positive short- and long-term impacts on the lake's ecology. A reduction of the source of nutrients that are cycled between the water, the sediment and plant biomass should substantially retard the growth of many types of undesirable plants in Lake Jackson. A significant reduction of invasive aquatic vegetation will in turn enhance the aquatic ecology of the entire lake system. The success in anticipating and exploiting the opportunity presented by Lake Jackson's recent natural drawdown was no accident. Many planning, permitting, and funding hurdles were surmounted prior to an unpredictable, natural event. This clearly demonstrates the importance of close cooperation between the state and local agencies in implementing a large-scale lake restoration program. As in many endeavors, teamwork is the key, and D.I.R.T. is a team. Also crucial is a dedicated, highly motivated team leader. Tyler Macmillan of the Northwest Florida Water Management District is largely responsible for the on-going success of the Lake Jackson Restoration Project.

The authors thank Tyler Macmillan and Paul Thorpe of the North West Florida Water Management District for providing information necessary to complete this report.

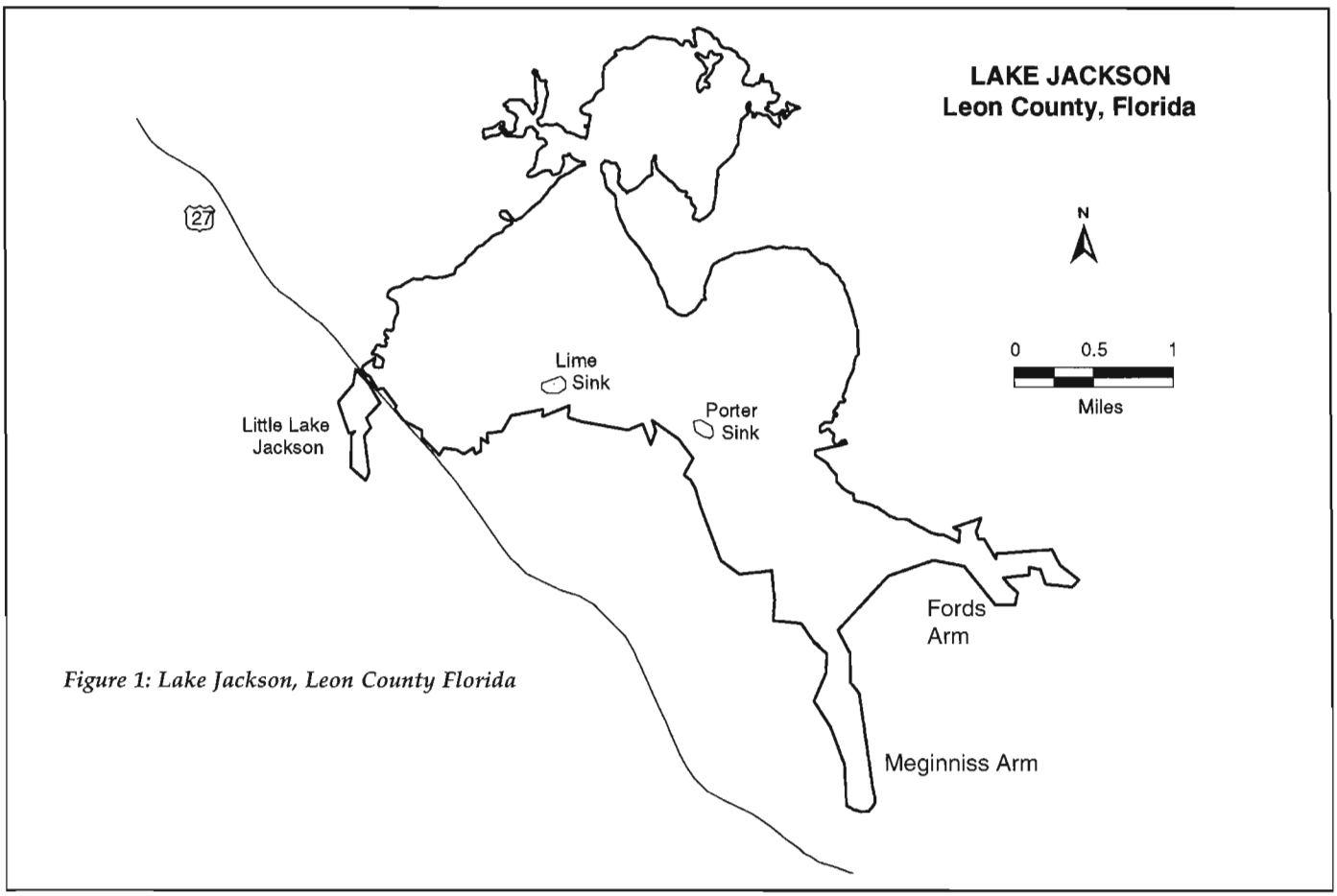
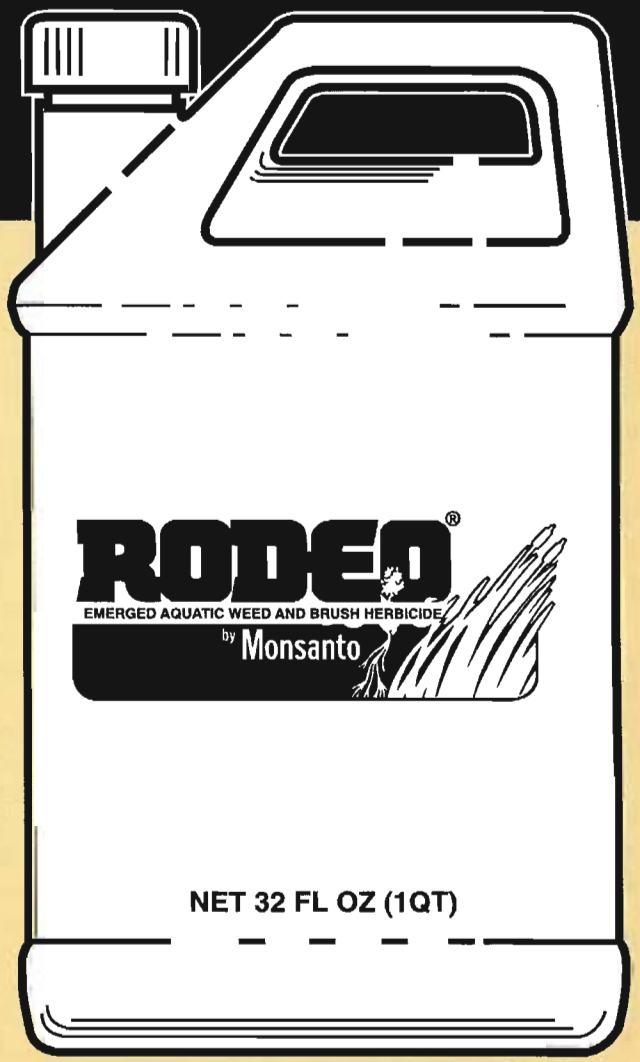


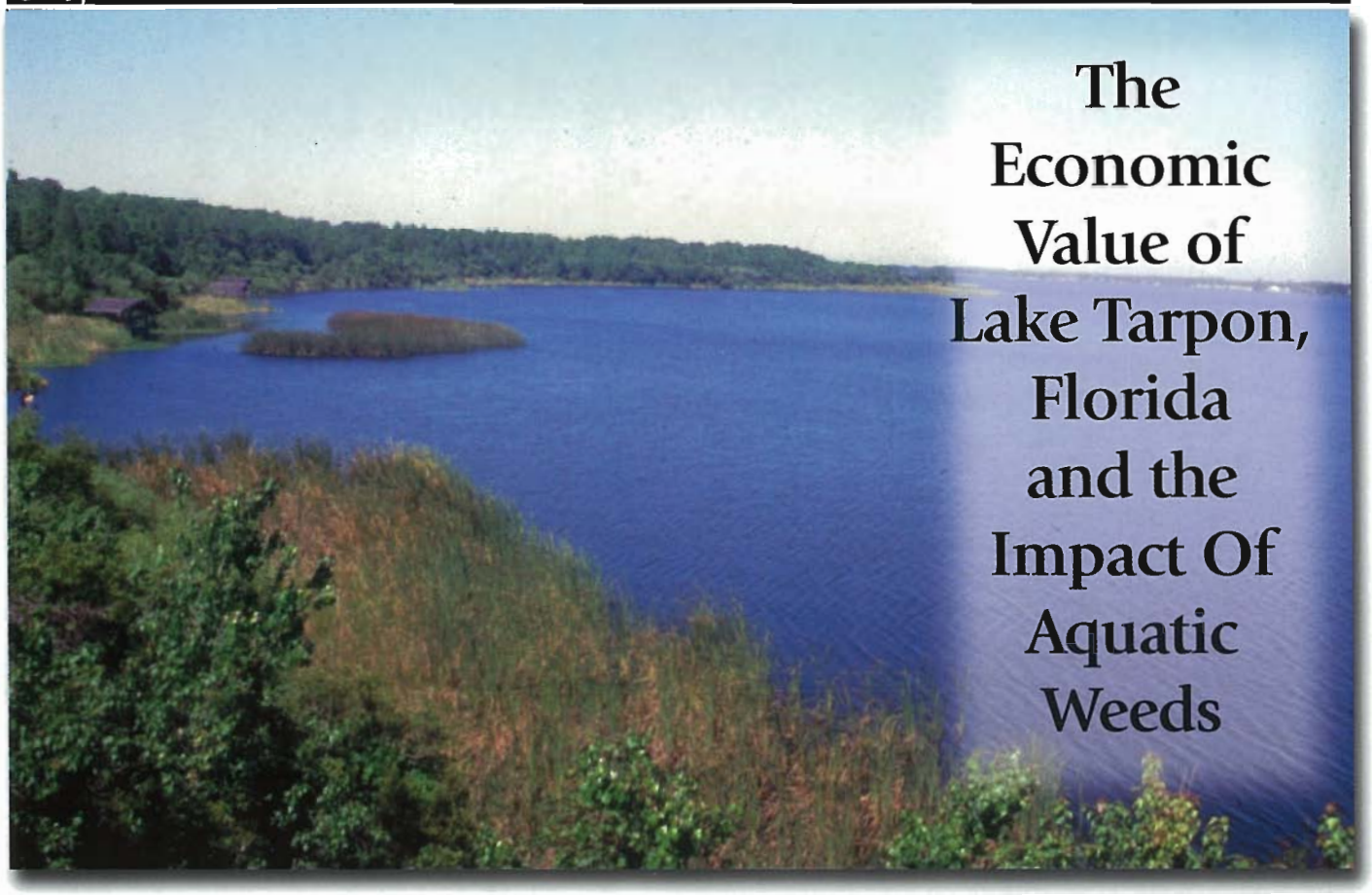
Figure 1: Lake Jackson, Leon County Florida

Rodeo® Gets Results.

Make It Beautiful.

Rodeo® herbicide controls emerged aquatic weeds and brush, including annual and perennial grasses and broadleaf weeds—roots and all. Rodeo has no water restrictions when used as the label directs. As a member of the Roundup®-branded family of products, Rodeo is trusted by professionals and homeowners alike. For more information about Rodeo, call Monsanto at 1-800-332-3111.





The Economic Value of Lake Tarpon, Florida and the Impact Of Aquatic Weeds

Photo by John Rodgers

by
Dr. Harry McGinnis,
Director and Professor, A.L. Burruss Institute of Public Service
Kennesaw State University
and
Dr. Frederick W. Bell
Department of Economics
Florida State University

This is a summary of the 112-page report, prepared under a contract from the Florida Department of Environmental Protection

INTRODUCTION

Lake Tarpon is the largest freshwater lake in Pinellas County, Florida encompassing 2,534 acres with a watershed of 60 square miles. This lake is a natural resource that offers many opportunities for recreation, such as boating and fishing, while at the same time providing vital habitat for many species of plant and animal life. Lake Tarpon is famous for its largemouth bass and provides recreational services for all or parts of eight counties in west central Florida.

These recreational services provide an inducement for Pinellas, Hillsborough, and Pasco Counties' residents to spend money on goods and services related to recreation on the lake and also entice people from other surrounding counties and even distant states to visit, thereby injecting money into parts of the tri-county economy. To identify the exact economy impacted, the researchers constructed a 10-mile radius around Lake Tarpon (Figure 1). Zone 1 is called the Economic Impact Area (EIA) to indicate that those living in this area together with tourists have an economic impact on this area induced by the existence of Lake Tarpon. In effect, the lake is a tourist attraction with an economic impact multiplied throughout the local economy.

One purpose of this study was to quantify the economic impact of Lake Tarpon on the EIA discussed above. Another purpose of this report was to place a dollar value on recreational benefits from Lake Tarpon. Such values are now assuming enormous practical use in assessing environmental damages (e.g., oil spills such as the Exxon Valdez) and justifying expenditures on pollution control projects. In this context, we can use the dollar value of recreational benefits to justify government programs to protect lake resources. Lastly, and of great importance, we examined the role of aquatic weeds in the economics of lake management.

Methods

Five elliptical zones were drawn around Lake Tarpon (Figure 1). Zone 5, the most distant zone from the lake, has a radius of 50 miles from the lake. Each zone was

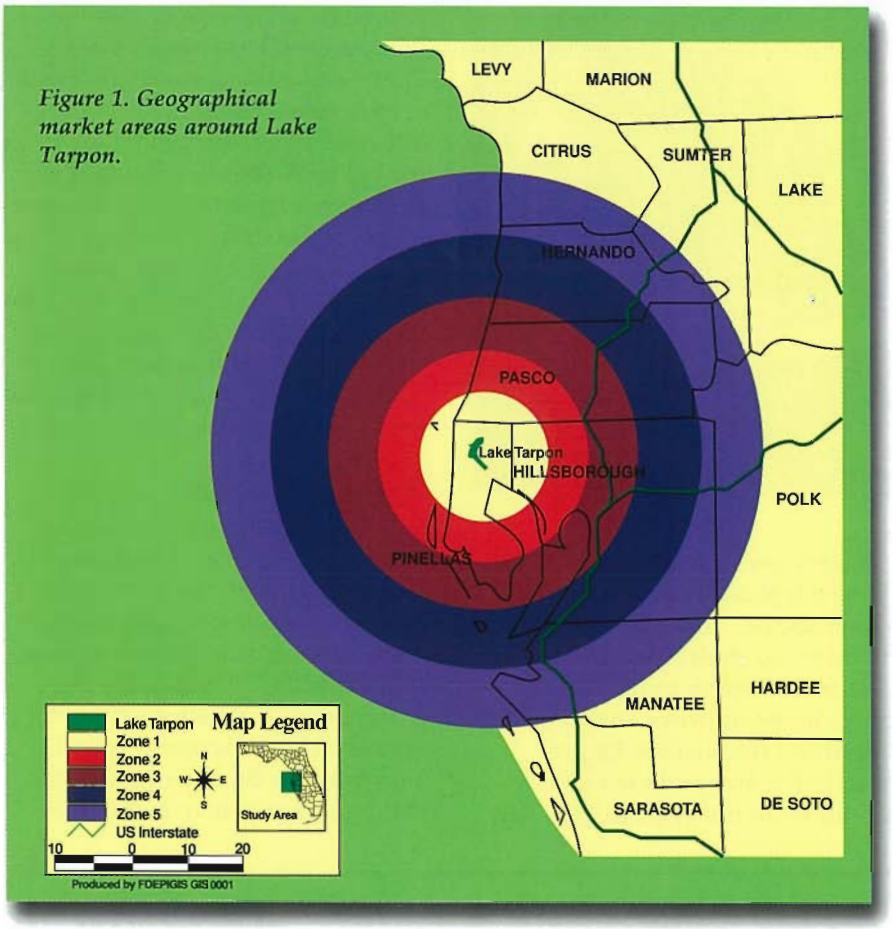


Figure 1. Geographical market areas around Lake Tarpon.

defined as a geographical market area served by Lake Tarpon with Zone 1 being the Economic Impact Area (EIA) or a ten-mile radius around the lake. There are eight counties covered in Zones 1 - 5. Within these five (5) market areas, 976 completed interviews were made from the Burruss Institute's Telephone Survey Research Lab, using a process of random selection of households and adults within the household. Of the total completed interviews, 96 (9.8%) individuals used the natural resources of Lake Tarpon over the last 12 months (1997). Nearly 3 million people live in the market area (Zones 1-5) served by Lake Tarpon. In addition, 88 completed interviews were made beyond Zone 5 with five individuals indicating they had visited Lake Tarpon in the last 12 months. Thus, the total calls were 1,064 with 101 or 9.5% of the respondents indicating visitations to Lake Tarpon within the last 12 months. Only about 3% of all individuals visiting Lake Tarpon

Two Pinellas county parks provide recreational opportunities for visitors to Lake Tarpon. Photo by John Rodgers

came from areas beyond a radius of 50 miles (i.e. beyond Zone 5).

Results

Using population information from the Florida Department of Environmental Protection's GIS system, the data yielded by the telephone survey enabled the research team to establish the percentage of the population within each of the five zones that visited Lake Tarpon in the last 12 months. As distance lived from the lake increased, the visitation rate decreased significantly (23% in Zone 1 to 5% in Zone 5). It was estimated that 314,943 people recreated at Lake Tarpon in 1997 and that spending or sales related to Lake Tarpon amounted to about $50.4 million in the EIA in 1997. This generated nearly $9 million in wages and 711 jobs. This is called the economic impact of Lake Tarpon on the EIA surrounding the lake.

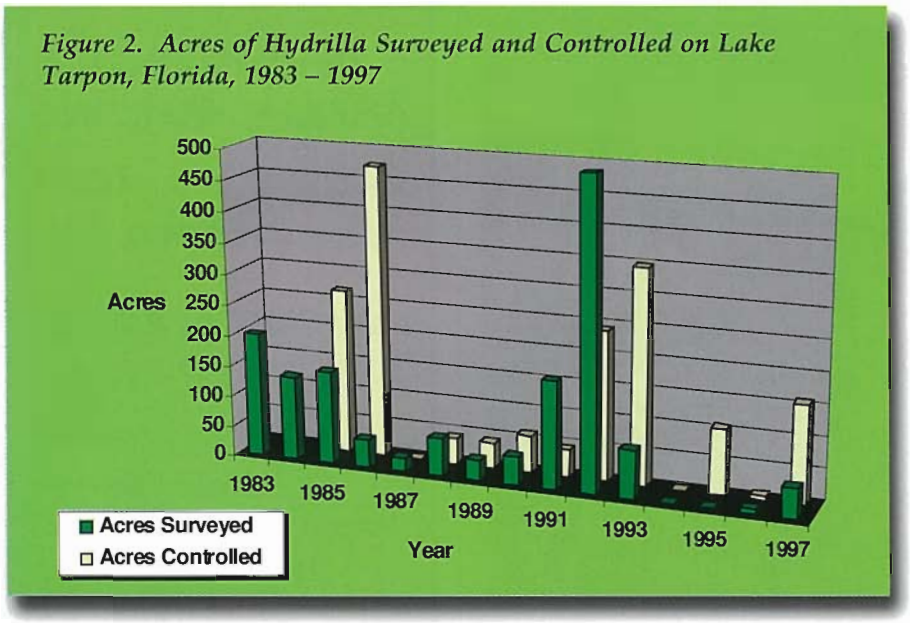
Separate from the economic impact of the lake is it's recreational value. The recreational services (e.g., picnicking, boating, etc.) of Lake Tarpon are by and large free to the public except for selective license fees (e.g., fishing license). Economists call these recreational services "non-market goods" that are not bought and sold in any market, yet may have substantial value. In 1997, all users of Lake Tarpon derived nearly $7.6 million in recreational value.

Non-users were also interviewed by the telephone survey as discussed above. These non-users are important to analyze since they may have an interest in using the resource in the future or simply want the natural resources to be preserved. The two main reasons by non-users for not visiting Lake Tarpon were: unfamiliarity with the lake, or the lake is too far away. There was no socioeconomic difference between users and non-users of Lake Tarpon except that the latter tended to be somewhat older than the former. Based on days of use at Lake Tarpon during 1997, users had more activity picnicking, wildlife observation/photography, and fishing than all other activities. About 5% of the recreational fishermen at Lake Tarpon depend on the lake for their regular food supply.

Impact of Aquatic Weeds

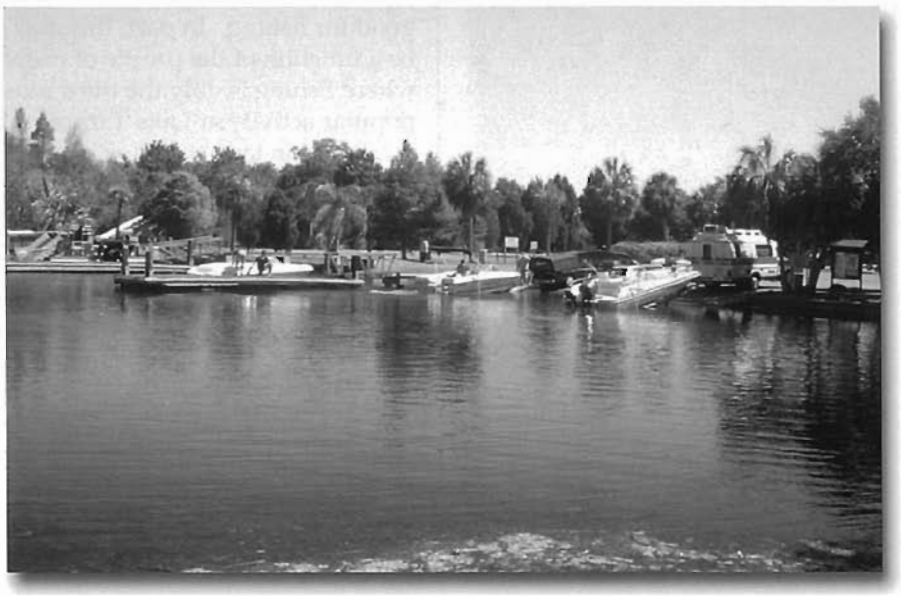
It has been clearly established that Lake Tarpon is of immense economic importance to the region it serves. This importance can be easily eroded by a deterioration in water quality, including the encroachment of aquatic weeds. We examined hydrilla management data from the Bureau of Invasive Plant Management over the 1987-

Figure 2. Acres of Hydrilla Surveyed and Controlled on Lake Tarpon, Florida, 1983 – 1997



1997 fiscal years (Figure 2). Surveys of hydrilla distribution seem to indicate that the management of hydrilla has been successful during this period. At the time of the survey, however, (late 1997), 50% of the users of Lake Tarpon felt that aquatic weeds (*any* aquatic weeds in their opinion, not just invasive hydrilla) were a serious problem. Respondents were equally divided on whether the problem was along the shoreline (i.e. cattails) or in the middle of the lake (i.e. hydrilla, coontail, etc). For those that used Lake Tarpon, only one in four felt aquatic weeds were, in general, good for fishing. In part, this may be a function of the profile of users where fishing is only the third most popular activity at Lake Tarpon measured in terms of days recreated.

About two-thirds of all lake users felt that aquatic weed control is a necessary part of lake management, but one in four users had no opinion regarding this question. If weed control is effective, then some users may not be aware that aquatic weeds are a problem. Hydrilla was identified by users as being at the heart of the weed problem; however, over 65% of the respondents did not know the type of aquatic weed that was the problem, despite a major effort by the Bureau to reduce the incidence of hydrilla. Over the last year (1997), only one in four users noticed any change in the incidence of aquatic weed infestation at Lake Tarpon. This response could indicate that the aquatic weed program has caused no noticeable



Many visitors enjoy boating and fishing on Lake Tarpon. Photo by John Rodgers

change, that other environmental factors influenced aquatic weed communities, or it may reflect the thesis that respondents are generally unaware of the aquatic weed situation.

Most users (over 60%) felt that aquatic weeds manifest themselves below or sometimes on the surface of Lake Tarpon, but do not cover the lake with mats that endanger boating. However, one in four users responded that even mild aquatic weed infestation (i.e., on or below the surface, but not thick mats) might cause them to choose other lakes in the area for recreation.

Over the last ten years (1987-1997), nearly 43% of the users felt that aquatic weeds stayed at a constant level while nearly 33% noted substantial fluctuations. For those that observed fluctuations, only 6.9% attributed what they observed to variations in government control programs. Apparently, users did not link fluctuations in aquatic weeds over the last ten years to government control programs. Although one-half of the users may regard the aquatic weed conditions at Lake Tarpon as favorable, a plurality (45.5%) of all users would support an increase in funding or the size of the State of Florida's program in controlling aquatic weeds at Lake Tarpon. We asked respondents whether they would be willing to support a Lake Tarpon "activities stamp" that would be renewed each year for a $10 fee. This stamp would be used to augment the present funding for aquatic weed control on this lake. Nearly 60% of the users expressed a willingness to participate in this program. The $10 annual fee appeared to be the most popular since the suggestion of higher fees met with resistance; and, if Lake Tarpon were completely free of surface weeds due to increased State control activities, nearly one-third of the users would increase their visitation to the lake from one day to over 10 days per year. Users from Zones 1-5 visit the lake, on average, about 7.7 days per year with the present (1997) aquatic weed situation. Thus, it would appear that the use of Lake Tarpon and its user value might substantially increase with further reductions in aquatic weeds.

The authors wish to acknowledge the contributions of Terry Sloope, Assistant Director for Research, and Christine Storey, Survey Lab Director at the A.L. Burruss Institute of Public Service for their contributions to this study.

FAPMS 2000 ANNUAL MEETING

October 3-5, 2000
Cocoa Beach, FL

◆

Last Call For Papers!

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

Deadline For Paper Submission Is July 1, 2000

Submit Your Abstract To:

Cathy Widness
Department of Environmental Protection
3111-B13 Fortune Way
Wellington, FL 33414

Phone: 561-791-4720
Fax: 561-791-4722
Email: widnessc@mail.state.fl.us

◆

Reserve Your Room!

Be sure to reserve your room at the Holiday Inn Cocoa Beach, Florida by **September 1, 2000.** Call 407-783-2271 and mention the FAPMS Meeting for reduced room rates.

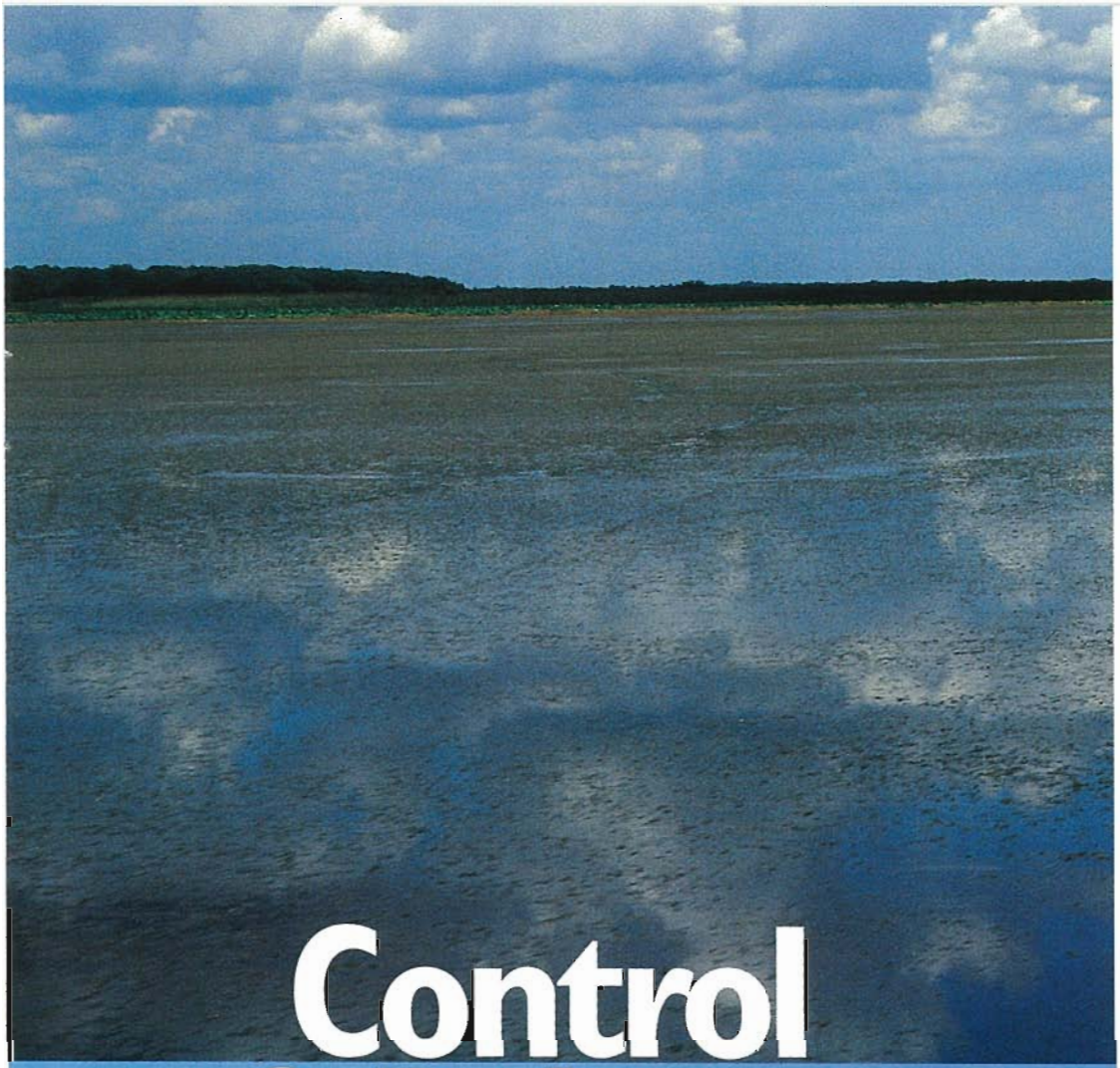
◆

Nominate the Applicator of the Year!

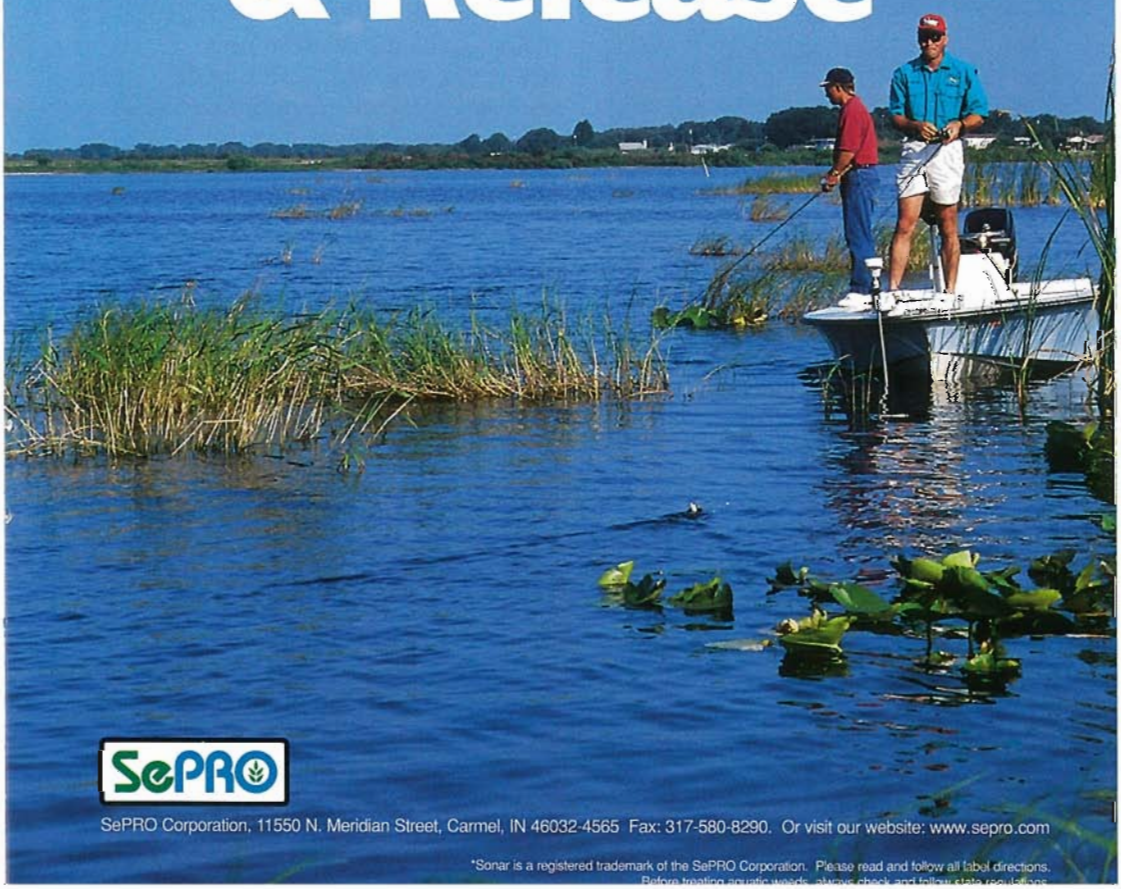
Call Jennifer Myers (Awards Committee Chair) at 863-533-8882 for a nomination form, or see the 2nd quarter FAPMS Newsletter

◆

See You at the Meeting!!



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."

SePRO PREFERRED Applicator

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

Sonar*

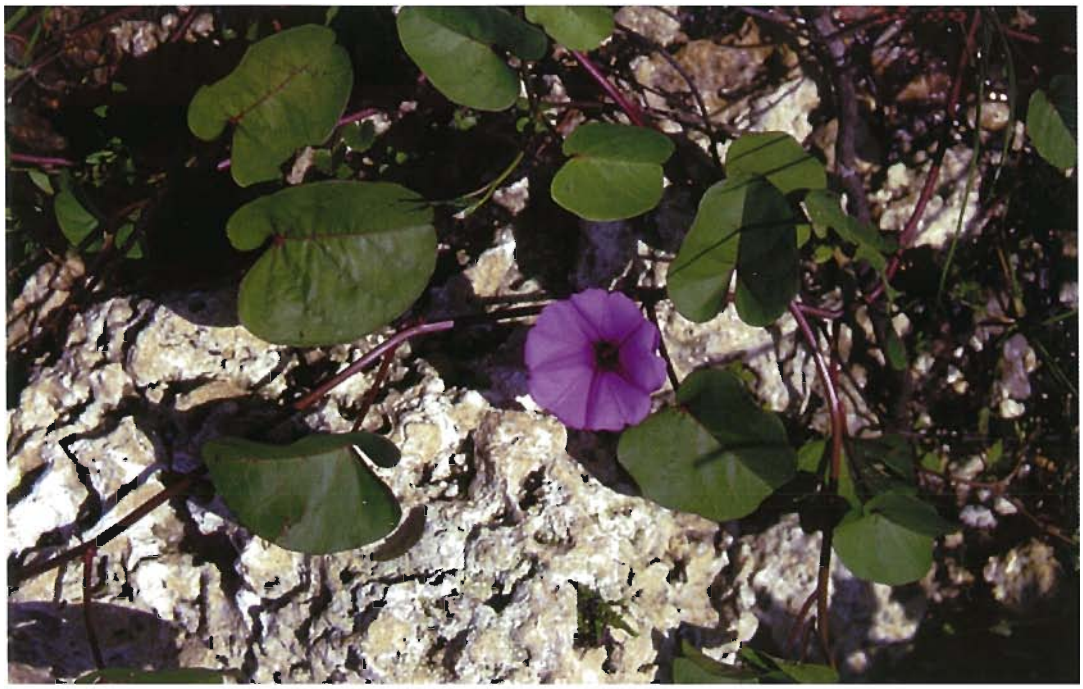
Restores Aquatic Habitats.

SePRO

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.

Ipomoea asarifolia (Convolvulaceae), Another Potential Exotic Pest in the United States



By
Kathy Craddock Burks,
Florida Department of Environmental Protection
and
Daniel F. Austin,
Florida Atlantic University

Known in Brazil as "salsa," *Ipomoea asarifolia* (Desr.) Roem.&Schult. is currently distributed in both the New and Old World tropics but is of uncertain origin. In 1994, a population of this species was discovered in Broward County, Florida, the first known occurrence in the United States. The vine was found growing across the surface of a pond along a canal within the South Broward Drainage District (SBDD). In August 1996, the site was revisited. The vine was well established around and in the small pond at a pasture edge and clamored up adjacent shrubs. It also appeared to have spread farther by runners among the mowed grasses down and along the canal bank.

. . . keep your eye out for this one in other locations!

The site has been dramatically altered since 1996 by urban development. By June 1999, much of the SBDD canal had been filled in and paved over. A large residential subdivision occupies much of the former pastureland. "Salsa" survived this massive disturbance, in fact the population extends now into an area of approximately 800 by 300 meters (about 8 by 3 football fields)!

How this introduction occurred is unknown. The site has a long history of disturbance. Seed or stem fragments could have arrived on farm or canal maintenance equipment; as a contaminate in feed, straw, or grass seed; in the gut of imported cattle or migratory birds; or for use as traditional herbal remedies. *Ipomoea asarifolia* is not known in cultivation in the United States, but is cultivated for ornament in Brazil as "salsa" or "Salsa-brava."

Documented habitats for this perennial species are largely wet sites. While little has been reported in the literature about *Ipomoea asarifolia* as a pest plant across its range, it is a recognized weed in Venezuela and Brazil. The plant is sensitive to frost, but grows in a wide range of moist soils and is easily propagated by stem fragments or seeds.

Given the spreading habit of this species, its apparent preference for wetlands, its adaptability to disturbance, its recognition as a weed in

Less Algae/Bacteria, Less Work, Less Copper.

South Florida, Fall 1998, one treatment.

EARTHTEC®
ALGICIDE/BACTERICIDE FOR LAKES, PONDS, RESERVOIRS, CANALS, LAGOONS AND OTHER WATER SYSTEMS

Manufactured by Earth Science Laboratories, Inc.
Phone (800)257-9283
Fax (501)855-5806
www.earthsciencelabs.com

ESL
clean water for the planet

some locales, and our experience with the Florida population, we view this introduction with alarm and will continue to monitor its occurrence. Steps are immediately being taken to confine any excavated fill to the current site and to plan a control effort.

We thank John Tobe for noticing the suspect morning glory and Jackie Smith for initially investigating the report, and providing, along with Joe Certain of SBDD, assistance in the field. See the journal article in *Sida*, volume 18, number 4, pages 1267-1272 (1999) for details and references. And keep your eye out for this one in other locations!

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.

SePRO PREFERRED Applicator

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**.

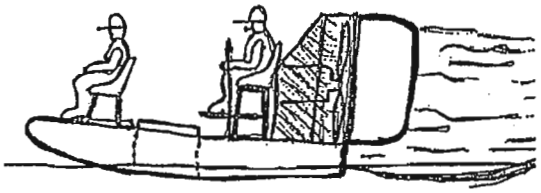
Nautique*
A New Solution

SePRO

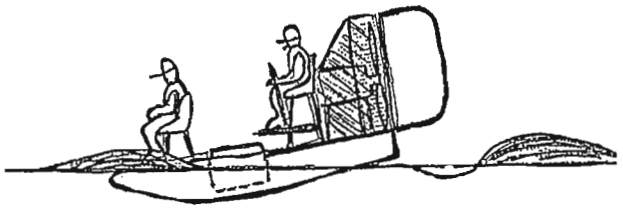
SePRO Corporation, 11550 N. Meridian Street, Suite 600, Carmel, IN 46032-4565 Fax: 317-580-8290.

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

Be careful out there...

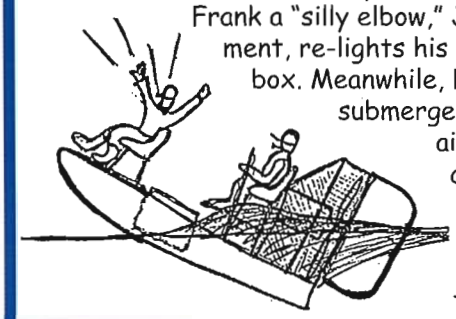


Fully loaded airboat suddenly looses power; forward motion ceases.

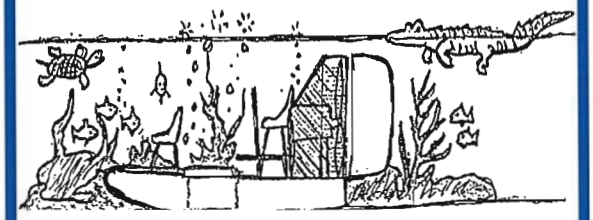


Bow plows into water shipping water over the front deck.

Bow recovers, shipped water runs towards the transom. Trailing wake comes in over the transom filling the airboat hull. Airboat sinks; total pandemonium ensues, Joe calls Frank a "silly elbow," Joe ignores the compliment, re-lights his pipe and grabs his lunch box. Meanwhile, Frank calls 911 on his submerged phone. The stricken airboat quickly slips into the clutches of Davie Jones accompanied by the loud shrieks of the survivors who are busy fighting off the circling alligators.



And its all over in Micro-Nano Seconds!!



Pictures and text by Dick Van Epp

FLORIDA AQUATIC PLANT MANAGEMENT SOCIETY

NEW AND RENEWAL MEMBERSHIP APPLICATION

Date _____

Name _____

Representing _____

Mailing Address _____

City _____ State _____ Zip _____

Phone _____ Fax _____

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

Membership includes four issues of aquatics and the newsletter.
Annual dues are $20.00

Mail check, payable to FAPMS:
Steve Weinsier
FAPMS Treasurer
120 Torchwood Ave.
Plantation, FL 33324

AQUAVINE

Meetings

FAPMS Board Meeting, July 11, 2000, Fort Myers, Todd Olson 800-327-8745

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.

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.

APHIS Proposes Rule Change

The US Department of Agriculture, Animal and Plant Health Inspection Service (APHIS) is "considering revising the noxious weed regulations issued under the Federal Noxious Weed Act in order to maximize their effectiveness." APHIS "believes changes may be necessary to improve control and limit the spread of invasive weed species that are not covered under the current noxious weed regulations." APHIS was accepting public comment through May 19, 2000. Check www.aphis.usda.gov for more information.

FAPMS SCHOLARSHIPS AVAILABLE!

The Florida Aquatic Plant Management Society Scholarship And Research Foundation Inc. Announces the availability of the following scholarships.

FAPMS DEPENDENT SCHOLARSHIP - provides a $1,000 to $1,500 scholarship to a deserving dependent of a FAPMS member. The scholarship is based on:

1. The applicant's parent or guardian having been a FAPMS member in good standing for at least three (3) consecutive years.
2. Financial need as determined by the application.
3. The applicant being a high school senior entering college the next academic year, attending junior college or be a college undergraduate.
4. An evaluation of the quality of the application and required essay by the Scholarship Selection committee composed of three FAPMS members and four Scholarship Foundation members.
5. **Submission of a completed application by June 15, 2000.**

GRADUATE SCHOLARSHIP (William L. Maier Jr. Scholarship) - provides up to $1,500 to a deserving graduate student who is :

1. Enrolled in an accredited Florida University or College.
2. A U.S. citizen.
3. Majoring in a field of study directly related to the management of aquatic vegetation for the ecological benefit of aquatic and wetland habits.
4. The quality of the application and required 500-1000 word essay as determined by the Scholarship Foundation's Board of Directors.
5. **Submission of a completed application by August 1, 2000.**

APPLICATOR EDUCATIONAL ASSISTANCE PROGRAM - provides up to fifty percent reimbursement of tuition costs for eligible FAPMS members who:

1. Work "full time" in the aquatic plant management profession as determined by the FAPMS Scholarship and Research Foundation Board of Directors and are attending college, community college or vocational/technical school to further their educational goals.
2. Have been a FAPMS member in good standing for at least one year.
3. Have paid tuition receipts to submit for reimbursement.
4. **Submit a completed application between August 15 and September 15, 2000 for the previous year.** The program year will run from August 1 to July 31 of each year.
5. Assistance will be awarded on a pro-rated basis by dividing the amount of funds available by the total amount of eligible tuition costs submitted by all applicants. For example, if the Board approves $1,000 for the program and $4,000 of tuition receipts are submitted each applicant would be reimbursed 25% of their tuition costs.

For further information or to request an application to apply for the above scholarships please contact Brian Nelson, 3287 Rackley Rd., Brooksville, FL, 34609, (352) 796-7211. **If requesting an application please specify which scholarship you want to apply for.**

The FAPMS WEBSITE!

If you have not already visited our society's website, please check it out at www.homestead.com/fapms/main.html. It is a work in progress and many thanks go to **Steve Smith** for his skill, hard work, and dedication to the FAPMS Website.

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

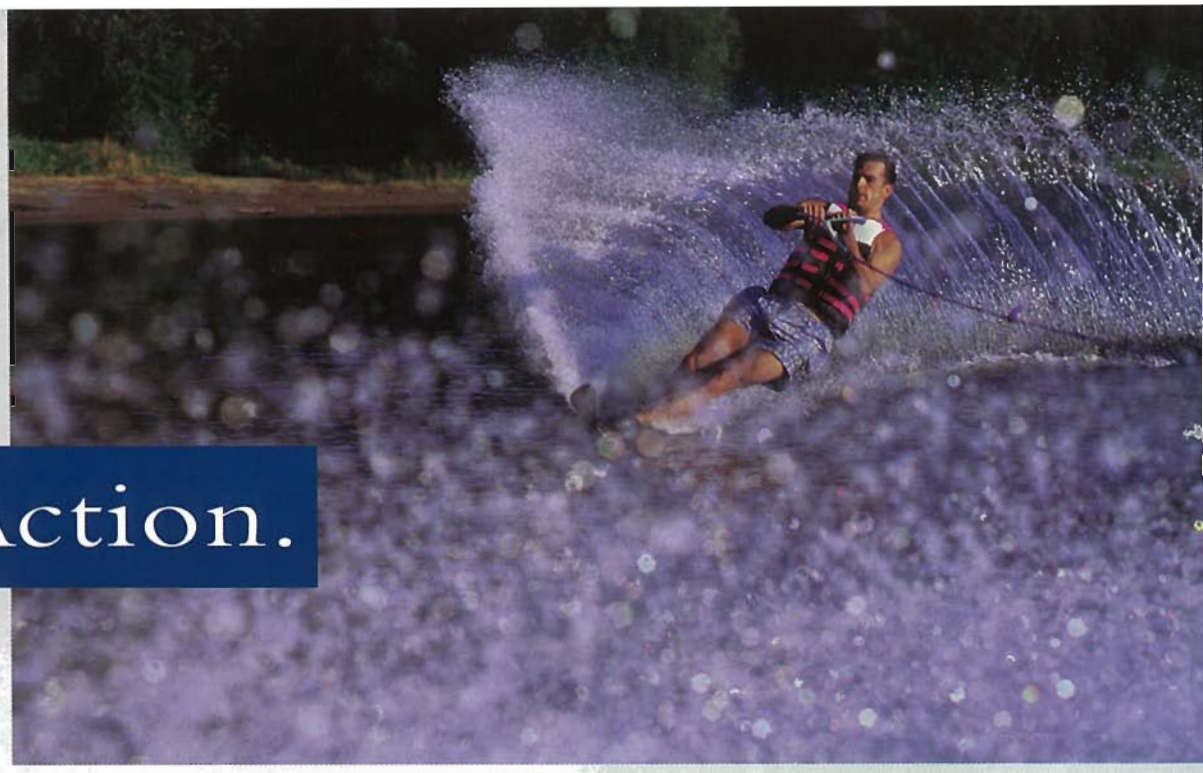
No threat to fish

No restrictions on recreational use

Helps nature take its course.

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

Always read and follow label directions. 5002-01-4/00



Fast Action.

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 Group Company.

ZPP-REW-004