



AQUATIC PLANT NEWS

A newsletter of the Aquatic Plant Management Society, Inc. No. 45 March 1994
Wendy Andrew, Editor, 10616 Bay Lake Road, Groveland, Florida 34736



1994 ANNUAL MEETING IS A FIESTA IN SAN ANTONIO



Why not bring the whole family for a fun-filled vacation to the world-famous Riverwalk in San Antonio, Texas? On July 10th, aquatic plant professionals will converge at the Hilton Palacio del Rio for the 34th Annual Meeting of the Aquatic Plant Management Society. The Texas APMS chapter doubles the fun by holding its 6th Annual Meeting in conjunction with the national meeting and will be featured in a special session.

San Antonio is a great spot for visiting and relaxing. The Riverwalk is tucked away in the downtown area so it's close to everything but separated from the noise and bustle of the business community. The old section of the Riverwalk was built as a WPA project during the Depression and has handcrafted stonework, exotic landscaping and huge old trees that keep the area cool and shady. Add the outdoor cafes, restaurants and shops that line the banks, the restored original village (La Villita), mix with

the casual, friendly atmosphere, and you will find this a distinctive area for a vacation or for listening to aquatic plant presentations. And, if eating, drinking and talking with new and old friends get too tiresome there are the many other attractions along the river. Within easy walking distance are: a three-story shopping extravaganza; Omni theater; paddleboat rental; Hertzberg Circus Museum; Institute of Texan Cultures (notwithstanding disparaging remarks by Midwest members); and the Tower of the Americas. Remember, the Alamo is the other San Antonio landmark, located about 2 blocks from the hotel.

Keeping up the tradition of memorable Awards Banquet sites was quite a challenge - come and decide for yourself if Texas hits the mark. Entitled "A Texas Ho-Down," Tuesday evening will be a real crowd pleaser at a hill country ranch. There will be great food and some sampling of activities that contribute to the Texas mystique. In the

works for Sunday before the President's Reception is an optional field trip to nearby San Marcos/New Bransfels. Viewing highlights include Texas wild rice (federally-listed endangered aquatic), glass-bottom boats at Aquarena Springs (with Ralph, the swimming pig), Southwest Texas State University and Comal Springs. Field trip planning is centered on minimal cost, optimal enjoyment, and unique, rare and unusual mixed in good measure. Stay tuned for more details.

Mark your calendars: July 10-13, APMS, San Antonio. The registration for the meeting is the same as last year: Participant is \$75 pre-registration and \$90 late; Spouse/child is \$50 pre-registration and \$65 late. Rooms at the Hilton Palacio del Rio are \$104/single and \$114/double. Call 210/222-1400 for reservations. Contact Joyce Johnson (512/389-4858) if you need more information about local site arrangements or the general area.



THE ALAMO - Shrine of Texas Liberty. The present building is the old chapel of Mission San Antonio de Valero, founded in 1718 by the Franciscan padres. In 1836, during the war for Texas independence, the Alamo was the scene of one of the most heroic events in the history of our nation. All of the 189 defending Texas soldiers were killed here while being besieged by Mexican troops under General Santa Anna. The now renowned battle cry, "Remember the Alamo," later carried the Texans to victory.

Photo courtesy of San Antonio Convention & Visitors Bureau, P.O. Box 2277, San Antonio, Texas 78298, (210) 270-8700.

1994 SCHOLARSHIP GRANT

The South Carolina Aquatic Plant Management Society is once again seeking applications for its annual scholarship grant. If an appropriate applicant is found, the Society will award its fourth annual \$1000 grant at its Annual Meeting in August 1994. Grant funds may be used by the recipient to cover any costs associated with education and research activities.

Eligible applicants must be enrolled as full time undergraduate or graduate students in an accredited four year college or university in the United States. Coursework or research in the area of aquatic plant management or aquatic ecology related to the Southeast is also required.

Applications must be received no later than June 1, 1994 and will be evaluated on the basis of relevant test scores (ACT,

SAT, GRE, etc.), high school and/or college grades, quality and relevance of research or coursework, a proposed budget, information obtained from references, and other related considerations. 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 on research activities at the Society's annual meeting.

Persons interested in applying for the scholarship grant should contact Danny Johnson, S.C. Water Resources Commission, 1201 Main Street, Suite 1100, Columbia, South Carolina 29201, or phone (803)737-0800 for additional information on application procedures.

CALLING ALL STUDENTS & FACULTY

■ There may appear to be a lot of classes, exams, and experiments to wade through before July but don't forget to start planning a paper for the Student Paper Contest at the 34th Annual APMS Meeting. The APMS strives to encourage graduate and undergraduate student participation in its meeting by providing free registration and accommodation to students presenting papers about their original research. Cash prizes are also awarded to the best student papers, and in the last few years books have been donated to all student speakers.

The APMS Annual meeting is an ideal opportunity for students to develop their presentation skills because the event is small and informal enough not to feel impersonal and critical. On the other hand, the meeting is sufficiently large and diverse to provide an interested audience, with members willing to discuss research ideas and offer practical advice. To be eligible for free registration, accommodation, and prizes, contestants must indicate their student status when submitting a paper title and abstract to the Program Chair. Free rooms (double occupancy) are only provided for students speakers and will be assigned by the Student Affairs Committee. Students deciding to share rooms with others who are not in the Student Paper Contest will be responsible for their own accommodation expenses.

■ Currently, the Student Affairs, Scholastic Endowment Fund, and Financial Committees are attempting to formulate a suitable policy for guiding the use of the Scholastic Endowment Fund. While the Society will continue to raise money for this worthy cause, the Board of Directors feel that it is time to start using the interest generated by the Fund to support student activities in APMS, particularly in continuing to encourage student participation at the Annual Meetings. If you have suggestions regarding the use of the Scholastic Endowment Fund or have questions about student activities in APMS, please contact Allison Fox, Student Affairs Committee Chair at Tel. (904) 392 1808; fax (904) 392 1840.

APMS Supports US Postal Service

In the last couple of months the US Postal Service has done very nicely, thank you, from business provided by APMS. With the arrival at the Center for Aquatic Plants in January of 2,000 copies of the 1992 International Symposium Proceedings (Volume 31 of the Journal of Aquatic Plant Management) a busy period of envelop filling, stapling, labeling, stamping, sorting, and delivery began. Thanks to valiant support for our Editor from Margaret Glenn, Paul Thayer, Patti Mikel, and Bobbi Goodwin,

over 1,200 copies were dispatched around the world. This included using at least 4,064 staples and licking 3,919 stamps (most envelopes needed four different stamps, of course!). Reprints were even bulkier than the Proceedings themselves, but at least there were only about 50 addresses on that mailing list.

In February, the International Contacts Committee acted upon a recommendation made by the Board of Directors in January 1993, by sending 10 complete sets of the

IN MEMORIAM

~ Bob Gates ~

Mr. Bob Gates died January 13, 1994 after a brief illness. Bob worked in aquatic plant management for 14 years as Director of Field Operations for the Southwest Florida Water Management District. He was a Charter Member of the Florida Aquatic Plant Management Society, and served on the Board of Directors. He was an active member of the Hyacinth Control Society and later the Aquatic Plant Management Society (APMS), for which he served as a Director (1969-70), Secretary/Treasurer (1970-71), and President (1971-72), and he was awarded Honorary Membership in 1984. I personally remember Bob for his friendliness, which made me feel like "I belonged" at the first APMS meeting which I attended.

In lieu of flowers, the family requests contributions be made to the "Summer Camp Scholarship Fund for Children," c/o Metropolitan Ministries, 2002 N. Florida Avenue, Tampa, FL 33602.

CAP To Begin Search For New Director

IFAS Vice President for Agricultural Affairs, Jim Davidson will soon appoint a Search and Screen Committee to conduct a national search for a new Director of the Center for Aquatic Plants. Until the new Director is searched, screened, and on board, Dr. Haller will remain in the acting role as Center Director.

FINAL CALL FOR PAPERS

1994 APMS ANNUAL MEETING

The Program Committee is accepting requests for papers for the 34th Aquatic Plant Management Society Annual Meeting to be held in San Antonio, Texas on July 10-13, 1994. The Committee will consider papers on all aspects of aquatic plant biology, ecology, and management. Presentations should be 15 minutes in length. Carousel slide projectors and overhead projectors will be provided. Any special presentation equipment must be provided by the speakers and indicated on the paper submission form.

Because this meeting will be held in conjunction with the Texas APMS, a special session is planned that will focus on aquatic plant management activities and research in the Lone Star State. The Committee is also planning to have a special session on federal and state efforts to prevent the introduction, sale, and distribution of noxious aquatic plant species. We are encouraging the submission of papers that address both these topics. If you wish to be included in one of these sessions, please note that on your paper submission form.

Please complete the paper submission form below exactly the way you want it to appear in the program and attach a short abstract (not exceeding 100 words). **All papers must be submitted prior to April 15, 1994!** It's an easy deadline to remember, but unlike the IRS we provide no time extensions.

If you have any questions, please contact:

Steve de Kozlowski

Program Chairman

at 803-737-0800

(FAX 803-765-9080).

Paper Submission Form

for the 1994 APMS Annual Meeting

(Deadline for submission is April 15, 1994)

TITLE: _____

ORGANIZATION: _____

ADDRESS: _____

CITY/STATE/ZIP: _____

TELEPHONE : _____ FAX: _____

ABSTRACT: Please attach, 100 words or less

() REGULAR () STUDENT

Special Sessions: () Texas Session () Prevention Session

AUDIOVISUAL EQUIPMENT NEEDS:

() SLIDE PROJECTOR

() OVERHEAD

() SPECIAL EQUIPMENT PROVIDED BY SPEAKER

SEND TO: Steve de Kozlowski, Program Chairman
S.C. Water Resources Commission
1201 Main Street, Suite 1100
Columbia, SC 29201

SEE YOU
IN TEXAS!

"BASS AND GRASS"

WHAT DOES IT MEAN TO AQUATIC PLANT MANAGERS?

Tune in to a Saturday morning fish'n program and you'll hear about "bass and grass." Pick up just about any fish'n magazine and you read about it. Bass anglers believe in a positive relationship between aquatic vegetation and largemouth bass abundance; and this can bring aquatic plant managers and anglers into direct conflict.

Who is B.A.S.S.?

B.A.S.S. was founded in 1967 and has grown to 550,000 plus members and a chapter federation of over 2,300 clubs in 45 states. In addition to sponsoring and promoting largemouth bass tournaments and largemouth bass fishing, B.A.S.S. has become involved in addressing environmental issues that affect the future of their sport. Memoranda of agreement have been negotiated by B.A.S.S. to provide a framework for cooperative activities and research necessary to maintain and enhance productive warm-water sport-fisheries resources. These memoranda have been made with several agencies, including Alabama Power Company, U. S. Department of the Interior Bureau of Reclamation, and U. S. Fish and Wildlife Service. B.A.S.S. has also appointed environmental directors, who serve in each of the 45 affiliated states. Their assignment is to promote conservation and resource involvement among chapter organizations and members. They attend at least one workshop per year where they focus on current issues that face the sport and resources that support it.

How Have APMS and B.A.S.S. Interacted to Date?

The APMS was represented at two Regional Environmental Workshops for B.A.S.S. state federation environmental directors in 1992 and a national B.A.S.S. meeting in 1993. APMS representative, Dick Hinterman attended the regional meeting in Elk Rapids, Michigan discussing herbicide selectivity and dispelling the misconception that aquatic plant managers are "out to strip lakes of all plants." Mark Hoyer represented the APMS and the North American Lake Management Society at the regional meeting in Pt. Sebago Maine. Mark discussed research that he has been conducting on the relationships between aquatic macrophytes and the limnology of Florida lakes. Part of this research suggests that there is no significant relation between the number of harvestable largemouth bass and the abundance of aquatic macrophytes in a data set of lakes with surface areas under 300 acres. Mark was able to remain for a majority of the meetings and tournament to continue conversations relating to "bass and grass" and herbicides. Doug Powell and I represented the APMS at the B.A.S.S. national workshop in Pine Bluff, Arkansas. Doug is Reservoir

Ecologist for Alabama Power, who has been conducting habitat enhancement programs in cooperation with B.A.S.S. We discussed herbicide toxicity and regulation, and many other topics with Environmental Directors and Federation Presidents. All who have had the opportunity to interact with B.A.S.S. environmental directors, federation presidents, and others have come away optimistic that problems between aquatic plant managers and anglers can be resolved.

Those of you who were at the 1993 annual meeting know that Joe Z organized an informative session on "Fish and Aquatic Plant Interactions." The session opened with an invited talk from Al Mills, who expressed B.A.S.S.' interest in interaction with APMS to "put to rest an era of mistrust and confrontation." Al Mills applauded our technical expertise in handling aquatic weed problems but indicated that better public relations are necessary. He also indicated that B.A.S.S. wishes to sign a memorandum of under-



standing with APMS to initiate future relations. Listening to the research papers presented in this session made evident the range of differing opinions relative to interactions between aquatic vegetation and fisheries, and indicated the need for continued research in this area. The paper presented by Doug Powell, "Alabama Power's Reservoir Habitat Enhancement Program," was instructive, not only on methods of habitat enhancement, but more importantly on the value of good public relations. In Doug's words: "The project is more people management because the fish get along fine."

Some Issues and Answers

Concerns of largemouth bass anglers over aquatic plant management can be separated into the following areas: 1) direct effects of herbicides on human health, fish, and other organisms, and 2) indirect effects of aquatic plant management on fish habitat when aquatic plants are removed.

Human health concerns are those that are commonly expressed for pesticides in general, such as the fear that herbicides cause cancer. The benign nature of aquatic herbicides with respect to fish, wildlife, and human health risks is well supported by research data and is well understood by aquatic plant managers. But it is understandable that anglers, who have been exposed to emotional and misrepresented media cov-

erage of pesticide issues, are skeptical. Overcoming this "pesticide paranoia" is an essential first step toward an understanding between aquatic plant managers and anglers.

Anglers have suggested that largemouth bass leave herbicide sprayed areas and that bait collected from herbicide treated water is rejected by bass. These responses have recently been studied, independently, by TVA, Florida Game and Freshwater Fish Commission, and University of Florida scientists. Studies have shown that fishing success has been at least as good in herbicide treated waters of natural lakes as compared to untreated areas. Also, radio-tagged bass have not moved away from home ranges or spawning areas in response to herbicide applications. And, bass have not been found to prefer untreated crawfish or golden shiners over those treated with up to 50 ppm 2,4-D. Current thinking among scientists is that fish movements have occurred coincidentally to herbicide spraying or that observed fish movements have been in response to indirect effects related to dying plants.

Many largemouth bass anglers have a single-mindedness toward aquatic plant management - to maximize sport-fish production, and they perceive vegetation as a prerequisite for largemouth bass production. Hence, the commonly encountered sentiment "no grass, no bass." Aquatic plant managers, in contrast, must respond to the needs of various water-use groups and manage vegetation for a diversity of water uses. Management of aquatic plants for one set of management objectives, such as for navigation and drainage, where a minimum level of submersed vegetation is desirable, may be counter to management for angling, because of anglers' preference for vegetation.

The problems escalate when misinformation and misconceptions are perpetuated through the media. An example was the perceived association between poor catches during the Bassmaster Invitational held on Lake Harris (Lake Co., FL) in January, 1992. Quoting uninformed sources and misquoting university faculty, sportswriters laid blame on agencies "that have been determined to kill every last sprig of vegetation in the eight lakes" and suggested that "herbicides stressed the fish and left them susceptible to disease." In a nationally televised program of the Bassmasters, the following misleading statements were made: "The habitat here has changed. The Harris Chain of Lakes is becoming weed-free as a result of chemical treatment. What this means to the future of fish and wildlife is an unanswered question but the results so far, from the standpoint of the bass fishery is not good."

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MONOECIOUS-DIOECIOUS HYDRILLA POPULATION OVERLAP IS FOUND IN NORTH CAROLINA

By Chad Coley and Stratford Kay,
N.C. State University

Both monoecious and dioecious biotypes of hydrilla are found in the United States. The southern states are plagued with the pistillate dioecious hydrilla, while North Carolina and Virginia suffer from monoecious hydrilla infestations. In Burnt Mill Creek, Wilmington, NC, a hydrilla population has existed since 1978 and was assumed to be the dioecious biotype. During the fall of 1992 while conducting a hydrilla acreage survey Chad Coley found a unique hydrilla colony growing among monoecious hydrilla in Lake Gaston, NC and VA. It was further noticed that both the Burnt Creek and Lake Gaston colonies overwintered in a vegetative state, while the monoecious biotype in

Lake Gaston senesced.

These two suspected dioecious hydrilla populations were examined to determine their correct biotype and were compared with known populations of monoecious hydrilla from North Carolina and dioecious population from Florida. A growth chamber study was conducted in the NCSU phytotron in the spring of 1993 where tubers from the plants were planted in glass aquaria and grown under a nine hour photoperiod to induce flowering and tuber production. Both staminate and pistillate flowers appeared on the known monoecious plants after approximately three months. During the same period, only pistillate flowers appeared on the known and suspected dioecious plants. Morphologically, the dioecious and suspected dioecious plants

appeared more robust and had shorter internodes than the monoecious plants. Tuber production was limited in all plants, but tubers produced by the dioecious and suspected plants were characteristically larger, whitish, and smooth; those produced by monoecious plants were smaller, brown, and scaly.

Using gel electrophoresis and RAPD assay techniques, Fred Ryan, UC-Davis, compared tuber proteins and DNA from the two suspected dioecious hydrilla populations with those from the two biotypes. Results confirmed that the two hydrilla colonies were in fact dioecious plants. The confirmation of dioecious hydrilla in Lake Gaston is the first known overlap of the two biotypes within a single body of water in North America.

DR. JOE JOYCE NAMED TO NEW POSITION

It's official. Dr. (Joe) Joyce has moved to a higher level in IFAS administration. Joe has provided us with his dedicated leadership as Director of the Center for Aquatic plants for 12 years. He has been in a dual role for the last five years, being Director of the Center for Natural Resources as well. For the last six months

he has been serving as Interim Dean for Research. Recently, Joe applied for the position of Associate Vice President for Agriculture and Natural Resources, and Vice President Davidson announced that he was selected for this assignment effective February 11, 1994.

This is a tremendous opportunity for

Joe, and he will serve IFAS well in his new position, but we will, of course, miss him at the Center. Joe will remain as Secretary/Treasurer of the FAPMS Scholarship and Research Foundation and he has promised to "stay active in the Society because everybody's got to have their roots."

"BASS AND GRASS" continued from page 4

In reality, poor fishing success during the Invitational was not caused by aquatic herbicides applications. The real story on the Ocklawaha [Harris] chain is that native aquatic macrophytes have been declining for the last thirty years or so due to changing environmental conditions, probably decreased water clarity and water level stabilization. Actually, herbicide treatments to control hydrilla had not been done on Lake Harris since 1987. The bass fishery has been declining in Lake Harris for several years, and this may be related to declining habitat and to a disease which was affecting larger fish in the population prior to the Invitational. Similar misunderstanding and misuse of the facts has occurred elsewhere and this helps to widen the gap between bass fishermen and aquatic plant managers.

The question of how much vegetation (and what kind) is needed to sustain a largemouth bass population does not have a clear-cut answer. Fisheries biologists do not agree on whether a lake needs any vegetation at all to sustain a bass population, much less on how much. Fisheries biologists and anglers do

agree on the importance of considering anglers in developing aquatic plant management programs, but this importance should be tempered with scientific facts when available.

Where Do We Go From Here?

Communication, education, understanding, and compromise between aquatic plant managers, anglers, and other water user groups are essential to resolve conflicts. These ideals can be accomplished through interaction between aquatic plant managers and anglers through such forums as local bass club meetings, special public meetings, one-on-one contacts, etc. Aquatic plant managers must go out of their way to interact with anglers, members of other user groups and sportswriters. Compromise can be approached by representation of all user groups in the planning process, when developing management plans, through the use of task forces or committees. It is essential, though, that all representatives are familiar with the same set of facts; and this must be accomplished through education.

Education is a two-way street and anglers are eager to educate aquatic plant managers. We can benefit greatly by listening open-mindedly to comments made by anglers, who have a keen interest and many hours of field observations, on potential responses of fish behavior to herbicides. Programs can be adapted to accommodate the suggestions of anglers where feasible and many such observations can be developed into testable hypotheses, which can benefit research programs.

Interaction between aquatic plant managers and anglers can be facilitated by interaction between B.A.S.S. and the APMS. Endorsement by B.A.S.S. will lend credibility to information, related to aquatic plant management, provided for anglers by APMS; and the opportunity for APMS to review aquatic plant management related material from B.A.S.S. would be beneficial. For this purpose a memorandum of understanding between the two is being drafted for consideration by our Board of Directors.

THE AQUATIC PLANT MANAGEMENT SOCIETY, INC.

The Aquatic Plant Management Society, Inc. is an international organization of scientists, educators, students, commercial pesticide applicators, administrators and concerned individuals interested in the management and study of aquatic plants. The membership reflects a diversity of federal, state and local agencies; universities and colleges around the world; corporations; and small businesses.

Originally called the Hyacinth Control Society, Inc., when founded in 1961, The Aquatic Plant Management Society, Inc. is a respected source of expertise in the field of biological, mechanical, chemical and other methods of aquatic plant sciences. The Society has grown to include several regional and state chapters; and through these affiliates, annual meetings, newsletters, and the *Journal of Aquatic Plant Management*, members keep abreast of the latest developments in the field.

The objectives of the society are to assist in promoting the management of nuisance aquatic plants, to provide for the scientific advancement of members of the society, to encourage scientific research, to promote university scholarship, and to extend and develop public interest in the aquatic plant science discipline.

Application for Membership

NAME OF APPLICANT _____ SPOUSE'S NAME _____

HOME ADDRESS _____ ZIP CODE _____

CURRENT TITLE, BUSINESS OR INSTITUTION NAME, AND ADDRESS _____

_____ ZIP CODE _____

WORK PHONE _____ HOME PHONE _____

There are three regular classes of membership available to applicants, according to the Charter of the APMS which was adopted in 1961. These classes are:

- A. ACTIVE MEMBERSHIP \$ 35
- B. STUDENT MEMBERSHIP \$ 5
- C. COMMERCIAL SUSTAINING MEMBERSHIP \$500

AMOUNT OF REMITTANCE \$ _____

SIGNATURE OF APPLICANT: _____

Please check the following to indicate desired membership class and for additional information!

Membership Class:

- ☐ Active
- ☐ Student
- ☐ Commercial Sustaining
- ☐ Subscription

Please Send Information Regarding Regional Affiliates:

- ☐ Florida Aquatic Plant Management Society
- ☐ Mid-South Aquatic Plant Management Society
- ☐ Midwest Aquatic Plant Management Society
- ☐ South Carolina Aquatic Plant Management Society
- ☐ Western Aquatic Plant Management Society
- ☐ Texas Aquatic Plant Management Society

Send this form to: The Aquatic Plant Management Society, P.O. Box 2695, Washington, DC 20013-2695.