THE AQUATIC PLANT MANAGEMENT SOCIETY, INC.

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Newsletter No. 19

Aquatic Plant Management Society

Twenty-Fifth Anniversary Meeting • Vancouver, British Columbia

Welcome to British Columbia

British Columbia, Canada is SUPER, NATURAL (with an area bigger than Texas!).

When you come to the A.P.M.S. 25th Annual Meeting (July 21-24, 1985) in Vancouver, Canada's third largest city, you will be able to experience many varied delights of the Pacific seashores and mountains within this multi-cultural metropolis. The Hotel Vancouver, where the meeting will be held, is a central location from which visitors can *walk* to a beach, to beautiful Stanley Park, to the Vancouver Art Gallery (across the street), to the second largest Chinatown in North America and extensive shopping areas.

There are many pleasures and distractions in this friendly city.

British Columbia is proud to host the first A.P.M.S. meeting outside the United States. Hopefully our visitors will stay at least a few days longer than the Annual Meeting and take side trips to explore other parts of the province. Information on the wide variety of special attractions in Vancouver and in nearby areas will be available at the registration area. Car rentals and bus tours can be arranged easily. Also, a special mailing of tourism information on British Columbia will be arranged for all A.P.M.S. members so that side-trips can be planned in advance. Perhaps you may wish to visit Vancouver Island or travel through scenic mountains to the Okanagan Valley.

In addition to the usual range of excellent papers on diverse aquatic plant management problems, a special "International Symposium on Water milfoil (*Myriophyllum spicatum*) and Related Halagoraceae Species" will be held on July 23. Recognized experts will present invited papers on the taxonomy, biology and ecology of water milfoil and the adverse impact of *Myriophyllum* species on water resources. Contributed papers will round out the individual papers and a group discussion to identify future research needs will provide an appropriate review and summary.

Organizers of the meetings have planned a special evening for July 23. Following the International Symposium on Water milfoil; participants will be taken by bus to a salmon BBQ at the U.B.C. Museum of Anthropology. The museum is spectacularly located on the edge of the sea and houses artifacts of the Northwest Coast Indians and around the world. An optional tour of a botanical garden is also planned to whet your appetites!

On July 25 a Field Excursion to Cultus Lake is planned. Eurasian water milfoil control techniques used by the B.C. Ministry of Environment will be demonstrated, including operation of a diver-operated dredge, a barge-mounted rotavator, a harvester and applications of bottom barrier materials. This bus trip will take most of the day, travelling through the scenic Fraser River delta.

Since beautiful British Columbia apparently has been spared the introduction of *Hydrilla* so far, our visitors are kindly requested not to bring live samples to our meeting!

P.R. Newroth
Chairman
Local Arrangements Committee

POTOMAC RIVER HYDRILLA STUDY

In 1982, *Hydrilla verticillata*, an exotic aquatic plant, was positively identified along the Potomac River shoreline near the nation's capital. Surveys conducted by the U.S. Geological Survey have revealed rapid growth of the plant between 1983 and 1984 as well as the reappearance of several other aquatic plant species in the tidal freshwater portion of the river (Figure 1). Hydrilla has also been noted in several small lakes and ponds in suburban Maryland, Virginia, and in Washington, D.C. The appearance and rapid growth of hydrilla in the Potomac River is of particular concern to water resource managers in the Corps of Engineers and in other public agencies because of the plant's demonstrated aggressiveness in lakes and rivers in other parts of the U.S. and its potential for creating serious problems to public uses of the waterbody. If the plant continues to spread as anticipated, it could have serious impacts in the upper Potomac Estuary which is heavily used by recreational boating interests as well as for commercial fishing, navigation, and overall environmental and recreational enjoyment.

In recognition of this problem, the State of Maryland and Commonwealth of Virginia, who share a common political boundary along the Potomac River, made formal application to the Baltimore District, Corps of Engineers during the summer of 1984 to take immediate action to study the problem and develop a management and control program. Expressions of support by other government agencies and special interest groups have followed. The Baltimore District has responded with the initiation of the Potomac River Hydrilla Study. The study is being conducted under the authority of Section 302 of the River and Harbor Act of 1965 which enables the Corps to conduct planning, research, and control operations related to aquatic plant problems.

A reconnaissance level study was first conducted and completed by the Baltimore District in September 1984 which made a quick appraisal of the problem. It was found that over 600 acres of the Potomac was affected by hydrilla between Chain Bridge in Washington, D.C., and Quantico Creek, Virginia, and that hydrilla existed in sufficient abundance in selected areas along the river to constitute a known problem of economic importance. It was also learned that the Potomac River biotype was monoecious, and, therefore, produces both male and female flowers, making its potential to be a highly competitive and dominant species in the river even more possible. The study concluded that further federal involvement was warranted in conducting detailed studies leading to a State Design Memorandum (SDM) which would recommend management and control operations.

Activities on the SDM have been initiated. They include a determination and evaluation of hydrilla with respect to public uses of the Potomac River, identification of critical problem areas, benefit and cost analyses, and environmental and fish and wildlife studies among others. A public draft to include a full Environmental Impact Statement will be available in November 1985 for review and comment. A final report is scheduled for completion in March 1986 outlining a plan for action. A cooperative agreement must be developed between the Corps of Engineers and the affected States and the District of Columbia before any plan can be implemented. Law requires that any plan of action must be cost-shared using a 70 percent federal and 30 percent non-federal formula. Control and management of hydrilla may begin by the 1986 growing season if federal action is determined to be justified and a mutually acceptable cooperative agreement can be reached among all the affected parties.

Research and development activities headed by the U.S. Army Engineer Waterways Experiment Station for the Baltimore District are also underway to support preparation of the SDM and to assure the availability of current technology on future operational programs. The R&D effort includes field demonstration projects on the river involving mechanical harvesting, diver operated dredge, bottom-placed barrier materials, and hand pulling. Monitoring and laboratory studies have also been initiated relative to the growth and spread, reproduction, competition, and effects of control on the monoecious hydrilla. Over $1 million dollars of federal funds have been proposed to conduct the R&D effort over 4 years.

Some of the major issues which must be addressed during preparation of the plan include acceptability of control and management measures by the various agencies and the public, acceptable institutional arrangements for plan implementation given the many levels of government (two states, District of Columbia, and several county jurisdictions) affected by the problem, and competing water resources needs among special interest groups. While hydrilla is recognized to represent a known problem, there also exists a concerted effort to protect reestablished submersed vegetation which is an indicator of an improved environmental condition to the Potomac River and the Chesapeake Bay. Ultimately, a balance must be struck by judiciously managing the abundance of nuisance weeds such as hydrilla in highly utilized areas and nurturing the return of more beneficial species in the system.

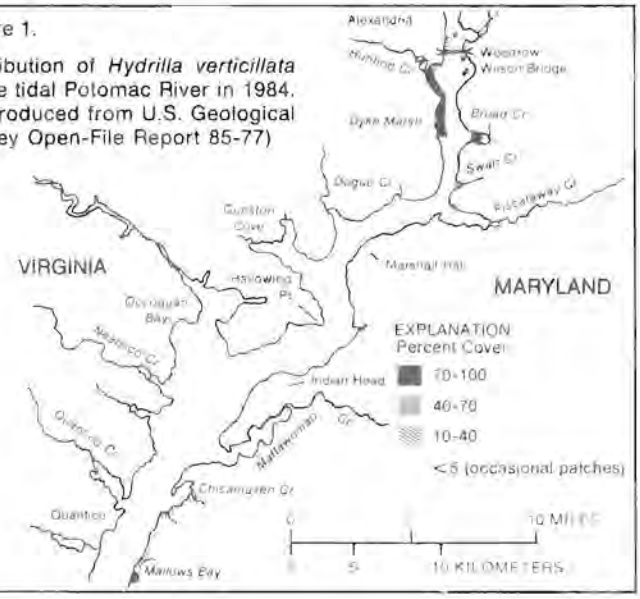
Robert S. Pace
Project Manager
Baltimore District,
Corps of Engineers
(301) 962-4710

Editor's Note: Interested readers can keep up-to-date on the Potomac River Hydrilla situation by receiving Potamic SAV News.

Write: Potomac SAV News
Department of Environmental Programs
Metropolitan Washington Council of Governments
Suite 200, 1875 Eye Street, NW
Washington, DC 20006

Figure 1.

Distribution of *Hydrilla verticillata* in the tidal Potomac River in 1984. (Reproduced from U.S. Geological Survey Open-File Report 85-77)



Harvester negotiates docks at old town hydrilla site in Potomac River.

Commonwealth Declines Corps' Offer To Test Diquat for Hydrilla Control

Virginia's Department of Commerce and resources said "no" in February to a request by the U.S. Army Corps of Engineers to test the herbicide Diquat's effectiveness in controlling hydrilla (*Hydrilla verticillata*) in the Potomac River. Hydrilla is a nonnative aquatic plant that has infested waters in many areas of the South. The fast-growing plant was accidently introduced into the Potomac in 1979 or 1980, and has since spread to over 600 acres of the river between Alexandria and Quantico.

The Corps had, for the second time, proposed tests of Diquat's effectiveness in controlling the weed at two locations in the Potomac—near the Old Town Yacht Club in Alexandria and downstream at the Belle Haven Marina in Fairfax County. The first proposal for tests using the herbicide in fall 1984 was withdrawn after the Corps failed to obtain permission from either Virginia or Maryland. Robert Pace, Corps project manager for the Potomac-hydrilla study, told *Water News*, "Unless we receive concurrence from both states, we won't carry out the project." Maryland has also refused the Corps' latest proposal for chemical tests.

Virginia's Deputy Secretary of Resources Richard Cook, who drafted the Commonwealth's official response to the Corps, said the reply followed recommendations of the State Water Control Board and the Council on the Environment. "We're not trying to say we think Diquat is unsafe," explained Cook, "It's just that this is no time to add another chemical to the Chesapeake Bay."

Cook pointed out that alternative, though perhaps more costly, means of controlling hydrilla are available. He acknowledged problems the weed causes for boaters, but said, "Our main concern is accelerating the cleanup of the bay." He added, "We're not sure whether hydrilla is good or bad—it could come back and help us." Possible benefits of hydrilla are increased food and shelter for aquatic life and improved clarity of the water, according to Cook.

In a related matter, the State Water Control Board (SWCB) is forming an interagency technical committee on hydrilla. The committee will include representatives from the SWCB, the Commission on Game and Inland Fisheries, the Council on the Environment, and Virginia Marine Resources Commission who will share and coordinate information about the plant. The committee's first meeting will be held April 2 at 9 a.m. in the SWCB's Richmond office.

Reprinted from
Water News
Virginia Water Resources Research Institute
Vol. 16:4, April 1985

Hydrilla Increases its Range in North Carolina

A 1981 survey in North Carolina identified hydrilla in 13 locations, all within Wake County and all within the Neuse River drainage basin. Soon after, hydrilla was discovered in Hyco Reservoir, in the Roanoke River Drainage basin. During 1982 and 1983 several new infestations were located within Wake County but no major new infestations were located until recently.

During fall and winter of 1984-85 hydrilla was located in Woodlake, Moore County, and in 3 ponds in Randolph County. This expands hydrilla's range in North Carolina into the Cape Fear and Yadkin drainage basins. Woodlake is 1200 acres in surface area and has about 800 acres hydrilla coverage. The lake is an impoundment of Crains Creek which drains into Little River and thence into the Cape Fear River. Hydrilla mats were observed floating downstream just below the spillway suggesting additional infestations downstream. The Randolph County infestation is the most westerly hydrilla location in the state; and the proximity to Asheboro water supply lakes is a concern.

We are apparently observing a similar rapid spread of hydrilla as has been observed in other southeastern states.

Ken Langeland

IMPORTANT DATES

July 28 - August 1, 1985—Plant Growth Regulator Society of America, 40th Annual Meeting, Boulder, CO.

August 26-30, 1985—6th International Symposium on Aquatic Macrophytes, Silkeborg, Denmark.

October 9-11, 1985—Midsouth Aquatic Plant Management Society, Jackson, Mississippi.

October 15-17, 1985—Florida Aquatic Management Society 1985 Annual Meeting, Holiday Inn, Plant City,Florida.

November 24-30, 1985—10th Conference of the Asian-Pacific Weed Science Society, Chiang Mai Orchid, Chiang Mai, Thailand.

September 15-19, 1986—7th International Symposium on Aquatic Macrophytes, Loughborough, Leicestershire, England.

Arsenal Herbicide Labeled for Non-Irrigation Ditch Banks

Arsenal® herbicide is labeled for non-irrigation ditch banks and other similar areas.

American cyanamid is investigating arsenal's potential uses in aquatic situations. Trials conducted by university and USDA personnel have indicated that arsenal is extremely effective on several aquatic species including water hyacinth (*eichhornia crassipes*), water lettuce (*pistia stratioites*), and several other floating or emerge species. Arsenal is active on several species that are semi-aquatic including paragrass (*panicum purpurascens*), torpedograss (*panicum repens*), and alligator weed (*alternanthera philoxeroides*).

Arsenal is labeled for use on railroads, highways, industrial sites, and other non-crop areas.

For more information contact your local american cyanamid representive or

John C. Rabby
American Cyanamid
4243 Brookside Dr.
Pensacola, FL 32503
(904) 432-9386

CIBA-GEIGY Continues to Contest EPA's Revised Simazine Labeling

Company's Algicide Not Affected

Last year the Environmental Protection Agency ordered that all ground-applied agricultural chemicals containing the active ingredient simazine be classified as Restricted Use Pesticides and carry a groundwater advisory.

CIBA-GEIGY Corporation is contesting the EPA's actions, contending that the federal agency did not comply with proper regulatory procedures and legal requirements in ordering the label changes.

Two CIBA-GEIGY herbicides are involved: Princep, used in corn and other crops, and Pramitol 5PS, used for bare ground weed control in non-crop areas. However, Aquazine, the company's algicide for control of algae and certain weeds in ponds, is not involved in the regulatory action.

The company is concerned that if it adopts the EPA label-change orders without due process of law, a precedent will be set for future regulation in the same manner.

Also, CIBA-GEIGY believes that the nature of the chemical and existing scientific evidence do not provides justification for the label changes.

To obtain due process of law, the company asked the Federal District Court in the District of Columbia to require that the EPA hold a hearing before implementing the label changes. After the complaint was filed, but before the court had acted, the EPA deferred its order for restricted use classification. The agency left open the possibility that it would request the classification change later, following the procedure that the company requested.

After failing to reach a compromise on the wording of the groundwater advisory, the company said it would begin using — although under formal protest — the EPA's groundwater advisory. Also, the company is continuing to pursue the matter of the groundwater advisory in court.

R. Clark
Ciba Geigy

Changes Requested in Federal Noxious Weed Act

The Federal Noxious Weed Act of 1974 has been in effect since 1975. It was passed with the intent of limiting the spread of weeds, including aquatic weeds, into or through the United States. Because of certain circumstances and details in the law, the interstate movement of weeds has not been regulated as strongly as some weed scientists and others would like to see. Because of limitation, some minor changes have been suggested for the Noxious Weed Act. This would help regulate the movement of weeds as the law was intended. We feel that it would be beneficial to the United States and to our industry if the following was considered and the suggested change was made in the Act:

"According to the legislative history of the Federal Noxious Weed Act, the authority to restrict the interstate movement of listed noxious weeds under Section 4 of the Federal Noxious Weed Act is limited unless certain action is taken pursuant to Sections 5 and 9 of the Act."

"It is necessary to be able to take action to restrict the interstate movement of noxious weeds regardless of whether action is taken under Section 5 or 9 of the Act. There may be occasions when it is necessary to take action to prevent the spread of noxious weeds in cases where there are no funds available for activities under Sections 5 and 9 of the Act. Therefore, we would like authority to issue permits in accordance with Section 4 of the Act without the limitations of Sections 5 and 9 of the Act as stated in the legislative history.

"Appropriate amendatory language that could be considered for this purpose is as follows: 'permits may be issued concerning the movement of noxious weeds into or through the United States or interstate, regardless of whether any action is taken under Sections 5 and 9 of the Act.'"

It would be helpful if our members contacted their congressmen and suggested that the above change be made in the Federal Noxious Weed Act of 1974.

Vernon V. Vandiver

The Aquatic Plant Management Society, Inc.

The Board of Directors met in Houston, Texas on Sunday, January 13, 1985. Special recognition and a permanent record in the minutes were made in honor of Director William L. Maier, Jr., who died in August of 1984 shortly after the 24th Annual Meeting.

President Max McCowen expressed his appreciation to the various members who have worked diligently to carry out the business of the Society so far this year. Great expectations exist for an eventful 25th year, climaxing in the Annual Meeting in Vancouver, B. C. this July.

The Secretary-Treasurer reports that the financial condition of the Society is gradually improving with a few hundred dollars income over disbursements for the Annual Meeting and a grandual increase in membership. As of December 31, 1984 the overall assets were $10,-114.94 including savings and balances brought forward. The membership as of December 31 stood at 348 active, 117 subscription 15 commercial sustaining, 5 honorary, and 26 student members for a grand total of 511. Although the "new" Newsletter had not been mailed at the time of the Board Meeting, the Secretary-Treasurer would like to compliment Editor Ken Langeland and report the many positive comments received to date on the Newsletter.

Highlights of the committee reports were as follows:

- Consideration of additional honorary members was delayed until 1985-86.
- An article on liability is being considered for inclosure in the By-Laws.
- A renewal of interest has occurred in a Canadian Chapter of APMS; also some mention was made of interest in a Northeastern U. S. Chapter.
- A package deal is being considered for persons who would like to join APMS and several or all chapters.
- No changes have yet been made on the site of the 1986 meeting—its presently still the Sundial on Sanibel Island.
- Past President Bates and others are working on a Code of Ethics, a policy statement document, and an operations manual.
- The January issue of the Journal should be mailed by early March.
- Much ado is being made over the upcoming 25th Annual Meeting and milfoil symposium. Details will be related elsewhere in this Newsletter and in special mailings by the Office of the Secretary-Treasurer.
- Bill Haller has accepted another term as our representative for the Council of Agricultural Science and Technology (C.A.S.T.).

Under Other Business, Mr. J. Clarke Hudson was unanimously elected to fill the remainder of the term as Director created by the untimely death of William L. Maier, Jr.

Aquatic Person

John Gallagher

The sheik depicted in the accompanying photograph is truly one of the hereto before unknown wisemen from the East. He carries a great wealth of aquatic weed knowledge in the storehouse on his shoulders. Born of humble beginnings in the liberal center of the mid-atlantic states (New York City), he obtained his interest in aquatics early by being the first to swim (underwater no doubt) across the Hudson River at the Verrazanno Narrows. His early education in politics, debating, and his Suave and debonair native helped save Fay Ray from the grasp of King Kong as the Great Kong scaled the Empire State Building. His engineering skills which later contributed to the design of the microfoil boom and other herbicide application devices was gained as chief engineer on the construction of the Brooklyn Bridge. He apparently received his college degree from one of the great temples called Penn State, however all records of his education are lost to antiquity.

In a more serious vein, "Mr. Phenoxy" began his distinguished career in turf and aquatics in 1954 with Amchem Products Company. Few people can claim a 31 year history in Aquatic Plant Management; but John Gallagher can. He continues to be a prime source of information to everyone and we consider him as one of the founding fathers of Aquatics as we know it today. Few people can claim the presidency of two of the weed conferences (Northeast - 1968, Southern - 1982). In addition he received Distinguished Service Awards from both Conferences in 1979, 1980, and in 1983 he was awarded the Fellowship Award of the Weed Science Society of America. Most everyone knows John, or has at least heard of his exploits. We know of several young fellows that John has helped along with well timed suggestions and fatherly advice.

All these plaudits and aclaimations might lead one to believe that John is fixing to throw in the towel, no way! Aquatics gets in the blood, so after several more years at Union Carbide, rumor has it that he will return to College and earn his Ph.D. In addition he has committed to writing at least one book on Aquatic Weeds and doing a TV show on gourmet cooking. So to our Aquatic person of this issue, we ask, John what you doing in your spare time, mowing lawns?

Aquatics at SWSS and WSSA Annual Meetings

The SWSS aquatic program, a half-day session, had good representation from Florida and Texas. The subject matter would be familiar to APMS readers - hydrilla, the white amur, biological control of water hyacinth and a discussion of a potential new problem for Florida, Mimosa pigra.

The Lake Conroe project received considerable attention during the discussion period. It was generally agreed that the most important long-range information needed to complete the study was the impact of the white amur on the game fish community. The recreational aspects seemed to have received considerable benefit from the agreed upon overstocking which at the time was a political necessity.

The WSSA aquatic session, also a ½ day program, dealth with the same subject matter we are familiar with. We are still searching for a fail-safe biological weed control agent that would be acceptable to fisheries biologist; and we are still trying to characterize hydrilla to allow us to determine its spread capabilities

Reality vs. Public Fears

Bernalyn McCaughey, president of the Washington Pest Management Council, discussed the ever-present factor of public concern over water pollution with pesticides. Her answer to the concern factor when involved in a confrontation is to be sure that all references to the problem include all studies in any evaluation of hazards. Cite and be sure that studies cited to meet EPA specs.

Lars and Nate reviewed flurichloridone as a possible aquatic herbicide, citing milfoil control at 0.1 PPM with several other species showing control when treated with surface and subsurface applications. More work is proposed.

Finally, Bob Hilterbrand reviewed the ever-changing aquatic macrophyte bio mass of the Illinois ponds, studied over a 10 year span. Weed complex will change but under natural conditions the change is not readily predictable.

John Gallagher

CHAPTER REPORTS

Florida - APMS

The Florida Aquatic Plant Management Society, established in 1976, is expanding not only in membership, but also in its role of promoting activities which will enhance the profession.

In addition to our annual meeting, publication of "Aquatics," membership on the Aquatic Plant Advisory Council, and involvement in legislative and administrative matters pertinent to the membership, in 1985 the Society will cosponsor the annual Aquatic Research Review Conference at the University of Central Florida and the Advanced Aquatic Short Course at the University of Florida.

Also, we are pleased to announce the establishment of the William L. Maier, Jr. Memorial Scholarship Fund. Criteria for candidates are under consideration.

We look forward to seeing you in July!

Clarke Hudson, President

MidSouth - APMS

The MidSouth Chapter of the Aquatic Plant Management Society held its third annual meeting on October 10-12, 1984, in Mobile, Alabama. The meeting had eighty-three registered participants and included an aquatic plant identification workshop, twenty-five presentations on technical research, agency updates, and private industry reports, as well as a tour of the Mobile Delta. The fourth annual meeting of the MidSouth Chapter is scheduled for October 9-11, 1985, in Jackson, Mississippi. Members from the parent Society and other Chapters are invited to attend and share information on aquatic plant management.

David Webb

Midwest - APMS

The Midwest Aquatic Plant Management Society held its fifth annual meeting on March 18-21, 1985, in Fort Wayne Indiana. The meeting was convened jointly with the Indiana Chapter of the American Fisheries Society. The program featured papers ranging from the status of grass carp in Indiana to septic tank leachate detectors in New Jersey. There were also plant and algae identification sessions and an applicators panel at which several "secrets" of aquatic weed control were revealed. Invited speaker John Osborne, University of Central Florida, presented a paper on the current status of the grass carp, hybrid grass carp, and triploid grass carp, William Haller, University of Florida, gave an informative and entertaining paper on the biology and control of *Hydrilla*. This paper received considerable attention as it appears that *Hydrilla* has the potential to invade the southern regions of the MAPMS membership area. Nearly 150 people attended the 1985 conference.

President's Report

"Go West, young man," therefore the 25th Anniversary Annual Meeting of the Aquatic Plant Management Society will be held July 21-25, 1985, at the Hotel Vancouver, Vancouver, British Columbia, Canada.

The call for papers has been made by Lars Anderson, Vice President and Program Chairman, and an excellent program is being planned. As part of the program, on Tuesday, July 23, an International Symposium on Watermilfoil will be held with several scientists of international reputation participating. At the Board of Directors Meeting held in January, our secretary-treasurer, Bill Rushing, reported that reduced airfares had been arranged

CHAPTER REPORTS

Membership in the Midwest Aquatic Plant Management Society increased another 10% from the same time last year. The MAPMS membership area now encompasses the New England states south to Massachusetts and westward to the Great Plains States.

The MAPMS has an increasingly active government affairs committee chaired by Jim Schmidt. This committee submitted a MAPMS policy statement regarding the use of herbicides for aquatic plant control that was adopted by the membership during the annual meeting. Copies may be obtained by writing Jim Schmidt, Applied Biochemists, Inc., 5300 W. County Line Road, Mequon, WI 53092 or Richard Bauer, MAPMS Secretary/Treasurer, Aquatic Consultants, Inc., 7150 Summerdale Drive, Dayton, OH 45424.

MAPMS officers for 1985-1986 are:

David Eisentrout, President
Carole Lembi, Vice President/President Elect
Richard Bauer, Secretary/Treasurer
Douglas Pullman, Editor
Nick Gowe, Past President
Russell Lemons, Director
Donald Pennings, Director
Russell James, Director
James Schmidt, Director

The Midwest Aquatic Plant Management Society publishes a newsletter, which features articles on a broad range of topics, relating to aquatic weed science.

If you are interested in joining the Midwest Aquatic Plant Management Society or desire more information regarding MAPMS, please contact:

The Midwest Aquatic Plant Management Society
c/o Richard Bauer
7150 Summerdale Dr.
Dayton, OH 45424

(submitted by G. Douglas Pullman, Aquatic Biologist, Dow Gardens, 3/29/85)

Western - APMS

The Western Aquatic Plant Management Society (WAPMS) was formed in 1981 to serve as a forum for advancing the science, technology, and operation of aquatic plant management programs in the western United States, Canada, and Mexico.

The society has quarterly newsletters and an annual meeting (1985 Phoenix, AZ, 1986, Sandiego, CA).

The society is here to serve the needs of water managers, researchers, industry, field applicators, and agencies involved in aquatic plant management.

There are currently 230 members and 5 contributing corporations.

Tom McNabb

and with the very favorable U.S. dollar over the Canadian dollar, this will make the cost of accommodations much lower than you would expect. The Local Arrangements Committee Chairman, Peter R. Newroth, has promised the beautiful scenery of the Canadian Rockies as well as a salmon barbecue, that you will not want to miss.

Plan now to encourage new members to join APMS, Inc. Let's all plan to attend, participate, and help celebrate our 25th Anniversary Meeting in Vancouver — this is our society.

Max C. McCowen
President

Letters to the Editor

Dear Editor:

I am an avid waterfowl hunter and photographer in North Carolina. I, along with my many naturalist and hunting companions, am always looking for ways to improve waterfowl habitat in North Carolina and other natural areas along the Southeastern coast. I was therefore overwhelmed with excitement when I recently read that hydrilla, an easy to propagate and establish aquatic plant, is far superior for attracting waterfowl than any native vegetation in Florida.

Since hydrilla performs so well for attracting and sustaining waterfowl in Florida we would like to begin a program of establishing hydrilla in as many lakes and rivers along the Southeastern coast as possible. We would greatly appreciate assistance from members of your society in locating good supplies of hydrilla for this project. If you can offer assistance please inform me of the quantity of hydrilla that you can supply and any suggestions that may improve the project by writing to:

Rudd E. Ringneck
c/o Editor, APMS Newsletter

Dear Rudd E.:

Wildlife biologists and aquatic weed specialists receive many letters similar to yours. Your interest in improving waterfowl habitat is admirable but you must use extreme caution when considering the introduction of exotic species into new areas. Native vegetation has provided adequate waterfowl habitat since the day that there were ducks.

Most importantly learn what is known about the biology and ecology of the plant under consideration, and weigh the potential benefits and detriments. Hydrilla is known to have severe detrimental impacts on aquatic habitats, including loss of valuable fisheries; and millions of dollars are spent annually for hydrilla management.

Remember too that interstate transport of certain noxious plant pests, *INCLUDING HYDRILLA*, is illegal.

Editor

FEDERAL AQUATIC PLANT MANAGEMENT WORKING GROUP

November 26-28, 1984

Galveston, Texas

SUMMARY OF DISCUSSION

2,4-D Labeling

Efforts to expand existing 2,4-D labels and tolerances to accommodate use by other Federal agencies have not been successful to date. The Environmental Protection Agency (EPA) is continuing review of the label and tolerances "in-house" and reportedly is not ready to grant these proposed revisions. The U.S. Bureau of Reclamation (USBR) has sent an official request for expedient review and this will be followed by an official request from the U.S. Army Corps of Engineers (USACE). The objective now is to hopefully secure label and tolerances so that control programs can be initiated for FY 1985. Reportedly, revised labels have been drafted and sent to the drinking water review group in EPA where additional delays are anticipated. John Gallagher of Union Carbide is continuing to tract the progress of the 2,4-D label expansion.

Control Release (CR) Herbicide Tests

The USACE will be continuing CR research in 1985 and 1986 primarily with 2,4-D and fluridone. More complete summaries about CR testing will be published in the Proceedings of the Annual Aquatic Plant Control Research Program (APCRP) in June 1985. About 1,000 pounds of Poly GMA 2,4-D will be formulated for field testing in 1985. Member agencies can possibly collaborate in field testing of the CR formulation if interested. Dr. Howard Westerdahl, USACE, Waterways Experiment Station, is project leader for CR testing.

Potomac Hydrilla Infestation

The hydrilla infestation on the Potomac River and the remedial control measures implemented in 1984 will be reported in more detail in the APCRP proceedings in June 1985. Basically, minimal *control* of hydrilla was made in the 1984 growing season because of the limitations imposed on herbicide and mechanical control testing. The Federal agencies, primarily USACE, National Park Service, and EPA are continuing to coordinate efforts with the Hydrilla Regional Advisory Committee (HYDRAC) and various other local organizations. The USACE is now reviewing various research proposals relating to study of hydrilla on the Potomac River.

Water Hyacinth - Sacramento Delta

The USDA-ARS reports that the water hyacinth problem in the Sacramento Delta has abated and is currently under maintenance control.

Hydrilla - California

Hydrilla continues to spread into the middle one-third of the Imperial Valley and coordination of control and research efforts are now being funneled through the Hydrilla Technical Advisory Committee (Dr. Randall Stocker, Lead Scientist). The advisory committee is currently drafting an Environmental Impact Report to support large-scale release of triploid grass carp and also preparing a plan to stop the rapid spread of hydrilla in the central portion of the irrigation district by the use of acrolein. The 1985 goal is to stock most of the canals in the western one-third of the Imperial Irrigation District with triploid grass carp. Various chemical investigations, such as plant growth regulators and control release formulations, are being coordinated in order to avoid duplication of effort.

Herbivorous Fish Studies

A proposal has been submitted to the California Department of Fish and Game Commission by the USDA,ARS for initiation of feeding preferences and growth rate studies for the grass carp in 1985. A recent study of a grass carp release in a cold water canal in Eastern Colorado by the USBR indicated control of elodea and some sago pondweed was achieved in a 4-5 month period (July-November). It was also noted that a high survival and recovery rate occurred; 871 fish were released in a 3-mile canal and 848 were recovered. This study also demonstrated the successful treatment of tapeworm infestations in grass carp. Triploid grass carp are reportedly now permitted in Eastern Colorado.

Studies are being planned by the USBR and the Hydrilla Technical Advisory Committee relating to use of barriers to limit movement of grass carp. Swinging gates have reportedly been successful in allowing debris to pass in canals yet limiting the movement of grass carp *upstream*. These barrier investigations will be coordinated closely with Tennessee Valley Authority (TVA) fisheries biologists who have conducted extensive barrier tests with other fish species.

Major projects involving study of the grass carp for aquatic weed control are in various stages of completion at Lake Conroe, Texas (Texas A&M); Imperial Valley California (USBR and Imperial Irrigation District); Washington State (University of Washington, USDWS, USACE); Guntersville Reservoir (TVA); and Lee County, Florida (Lee County Hyacinth Control District). Status reports of these projects will be provided to FAPMWG member as they become available.

Bryozoan Control

The USBR expressed an interest in studies by other agencies relating to control of biofouling organisms such as bryozoans. USBR staff will contact TVA staff concerning previous TVA studies on control of similar biofouling organisms.

Dam Safety

Burrowing mammals, such as ground squirrels, are reportedly causing structural integrity problems with small earthern dams and irrigation canals in the Southwest. This topic will be referred to the dam safety coordinating committee in the Interagency Research Coordinating Conference by USBR.

Summer Drawdown

Plans are continuing for a summer (late July or early August) draw-

(continued on next page)

(continued from last page)

down of a large TVA impoundment in 1985 for aquatic weed control. Site inspections or collaborative studies may be arranged by contacting TVA staff.

Lyngbya Problems

The filamentous algae, *Lyngbya* sp (often combined taxonomically with *Oscillatoria* sp.) is causing major localized water utilization problems in South Carolina (Santee Cooper Project) and minor problems in TVA reservoirs. Agency representatives encountering similar problems with *Lyngbya* sp. or those familiar with effective algicides are requested to contact the working group chairman.

Leon Bates

Weed Science In The 21st Century

Warren Shaw, U.S. Department of Agriculture, ARS national program leader for weed science, has made some interesting predictions about weed science in the 21st century. In the future, Shaw thinks satellites and other space technology such as lasers will be used to measure weed infestations and will lead to a better understanding and control of weed populations. Biological control agents such as insects, mites, pathogens, nematodes, and fish will be used as weed control agents to attack selected target weeds. Controlled-release technology will be developed to dispense short-lived herbicides evenly over a specific period of time to improve chemical weed control. Allelopathic chemicals extracted from plants and microorganisms will be used to control many of the major weeds. Lasers will be used to precision-tune the droplet size of spray equipment to prevent drift. In addition, the coating of crop seeds with herbicides holds promise as a new approach for providing weed control while greatly reducing the amount of chemicals applied per acre.

Tom Bregger
NCSU, Crop Science

Pending Legislation of Interest

SENATE

S.309 Proxmire (D-Wis.) Makes it easier to remove from market pesticides with registrations that contain health and safety data gaps, limits EPA's ability to allow emergency use of pesticides; referred to Agriculture, Nutrition & Forestry.

S.21 Moynihan (D-NY) Consolidates all government trade-related responsibilities in Department of Commerce and gives that body a new name—the Department of Trade & Commerce; referred to Government Affairs.

S.57 (Danforth (R-MO) Makes R&D tax credit permanent, narrows definition of qualifying research, provides incentives for corporate support of university research; referred to Finance.

HOUSE

HR 320 Erdeich (D-Ala.) Establishes department of trade; refered to Government Operations.

HR 638 Barnes (D-MD) Restricts export of goods found to be hazardous to public health; referred to Foreign Affairs.

HR 695 Michel (R-IL) Gives directors of national labs authority to enter into cooperative research agreements with universities and corporations; referred to Judiciary, Science & Technology.

Let your congressional representatives know how YOU feel!

How Much Herbicide Did You Use?

For dealing with environmental concerns it is often helpful to explain the concentration of aquatic herbicide that is used in such a way that is easily understood by the public. The following comparisons, reprinted from "Ag Chem Age", should be helpful to applicators and others for their rapport with the public.

TRACE CONCENTRATION UNITS

UNIT	1 part per million	1 part per billion	1 part per trillion
LENGTH	1 inch/16 miles	1 inch/16,000 miles	1 inch/16 million miles (A six-inch leap on a journey to the sun)
TIME	1 minute/2 years	1 second/32 years	1 second/320 centuries
MONEY	1 cent/$10,000	1 cent/$10 million	1 cent/$10 billion
WEIGHT	1 oz salt/31 tons potato chips	1 pinch salt/10 tons potato chips	1 pinch salt/10,000 tons potato chips
VOLUME	1 drop vermouth/ 80 "fifths" gin	1 drop vermouth/ 500 barrels barrels gin	1 drop vermouth/ 500,000 barrels gin
AREA	1 sq ft/23 acres	1 sq ft/36 sq mi	1 sq ft in the state of Indiana
ACTION	1 bogey/3,500 golf tournments	1 bogey/s.t million golf tournaments	1 bogey/3.5 billion golf tournaments
QUALITY	1 bad apple/2,000 barrels	1 bad apple/2 million barrels	1 bad apple/2 billion barrels
RATE	1 dented fender/ 10 car lifetimes	1 dented fender/ 10,000 car lifetimes	1 dented fender/ 10 million car lifetimes

Report from Europe

The main news on the aquatic weed front is that good progress is being made with plans for the 7th International Aquatic Weed Symposium to be held at the Loughborough University, UK from 15 to 19 September 1986. At a meeting of the Organising Committee held in February it was reported that there had been 128 replies to the 1st Circular from potential delegates and 60 offers of papers or posters. This is most encouraging at such an early date but committee felt that the event still needs more publicity in the hope of improving the reason from chemical companies and those countries that have not attended these meetings in the past eg S.America, Philippines, China and Eastern Europe.

Facilities at Loughborough University are good and most delegates are expected to stay in the University residence but double accommodation is not available and those accompanied by their wives may wish to find alternative accommodation in the town. But one of the most pleasurable aspects of these symposia has been the opportunity they have provided for us to mix with colleagues from many different countries and so it is hoped that everyone will join in with the evening events and the excursion to places of interest to freshwater biologists.

There is still time for anyone wishing to offer a paper to send the title and a 10 line abstract to Dr. Max Wade, Department of Human Sciences (Ecology Group), Loughborough University of Technology, Loughborough, Leicestershire LE11 3TU, England.

With best wishes,
T.O. Robson

Call for Papers in Aquatic and Biological Control for SWSS Annual Meeting

The Southern Weed Science Society will hold its 39th Annual Meeting January 14-16, 1986 at the Opryland Hotel, Nashville, Tennessee. Anyone wishing to present a paper related to aquatic weed management, biology or ecology, biological control of weeds, or new weed problems should submit a title to:

K. A. Langeland, Section Chairman
Weed Science Center
Box 7627
North Carolina State University
Raleigh, NC 27695-7627

7th INTERNATIONAL SYMPOSIUM ON AQUATIC WEEDS

to be held at

LOUGHBOROUGH UNIVERSITY OF TECHNOLOGY
LOUGHBOROUGH, LEICESTERSHIRE, ENGLAND

15-19 SEPTEMBER 1986

All those interested in receiving further details are asked to contact as soon as possible:

DR. MAX WADE
Department of Human Sciences (Ecology Group)
Loughborough University of Technology
LOUGHBOROUGH,
Leicestershire LE11 3TU
England

10th CONFERENCE OF THE ASIAN-PACIFIC WEED SCIENCE SOCIETY

Chiang Mai Orchid, Chiang Mai, Thailand
November 24-30, 1985

August 1, 1984

Theme and Programme: The theme for the Conference will be "Weeds and Environment in the Tropics".

The Programme for the Conference will include, Plenary Session, Concurrent Session, Poster Session and Symposium. The Plenary Session and Symposium will be based mainly on invited papers; the Concurrent and Poster Sessions will be open to all participants. For further information contact:

Miss Maneesa Teerawatsakul
Secretary, Working Committee for 10th Conference of APWSS,
c/o Botany and Weed Science Division,
Department of Agriculture,
Bangkhen, Bangkok 10900,
Thailand Phone: 579-4230

TWENTYFIFTH ANNIVERSARY MEETING

of the

AQUATIC PLANT MANAGEMENT SOCIETY

Vancouver, British Columbia

LAST CALL FOR PAPERS

1985 Annual Meeting

THE AQUATIC PLANT MANAGEMENT SOCIETY, INC.

You are invited to submit a title for a paper to be presented at the 1985 annual meeting of the Aquatic Plant Management Society, Inc., to be held July 21-25 at the Hotel Vancouver, Vancouver, British Columbia, Canada. Type title, authors, organization and location, exactly the way they are to appear on the program. If more than one author is listed, place an asterick after the name of the author who is to present the paper. Fifteen minutes will be allowed for each presentation. Projection equipment for 35 mm slides will be provided. Special requests for additional time or specialized projection equipment should be directed to the Program Chairman and will be considered on the merits of the individual request.

(PLEASE DETACH AND RETURN)

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Title ______________________________

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Author(s) ______________________________

Organization ______________________________

Address ______________________________

____

Abstract (75 words or less)

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Submit titles to: Dr. Lars W. J. Anderson
USDA Aquatic Weed Research
Botany Department
University of California
Davis, CA 95616

Submit titles for Student papers to:
Dr. D. F. Martin
Department of Chemistry
University of South Florida
Tampa, FL 33620

INTERNATIONAL SYMPOSIUM ON WATERMILFOIL (*Myriophyllum spicatum*) and RELATED HALAGORACEAE SPECIES AT THE

Twentyfifth Meeting of The Aquatic Plant Management Society

Tuesday, July 23, 1985 Hotel Vancouver, Vancouver, British Columbia, Canada

I. Introduction
- A. Recognition of invited speakers
- B. Announcements.

Invited Papers:

II. Natural History and Taxonomy of Problem *Myriophyllum* Species.
- A. Worldwide Distribution and Taxonomy
- B. Biology and Ecology of *Myriophyllum spicatum*
- C. Biology and Ecology of *Myriophyllum aquaticum*

III. Impacts of *Myriophyllum* species on Water Resources.

Invited Papers:
- A. Canada
- B. USA
- C. Europe
- D. Australia
- E. S. America

Break

Contributed Papers:

IV. Physiology and Reproduction
- A. Reproduction
  Photosynthesis
  Growth and Nutrition

V. Management Strategies
- A. Chemical
- B. Mechanical/Harvesting
- C. Utilization
- D. Biological

VI. Future Research Needs—Panel Discussion Group

End of Symposium

The Aquatic Plant Management Society, Inc.

The Aquatic Plant Management society, Inc., is an international organization of scientists, educators, administrators, and concerned individuals interested in the management and control of aquatic plants. The membership reflects a diverse collection of Federal, state, and local agencies; researchers, professors, and students from universities and colleges around the world; corporations; commercial applicators; and others dedicated to promoting research and sharing information about aquatic plants and the technology of aquatic plant management.

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

APPLICATION FOR MEMBERSHIP

There are three regular classes of membership available upon application made in accordance with the Charter adopted in 1961. These classes are:

A.	Active Membership	$ 25.00
B.	Student Membership	5.00
C.	Commercial Sustaining Membership	200.00

Name of Applicant _____ Spouse's Name _____

Home address * _____ Zip Code _____

Present title & Employer _____

Business Address * _____ Zip Code _____

Business Telephone _____ Home Telephone _____

Amount of Remittance $_____ Signature of Applicant _____

Membership Type: ACTIVE ___; COMMERCIAL SUSTAINING ___;

STUDENT ___; SUBSCRIPTION ___.

*Please indicate address to be used by our business office.

THE AQUATIC PLANT MANAGEMENT SOCIETY, INC.
PO BOX 16
VICKSBURG, MS 39180

GE-A0363-30-78-85

K D Getsinger
USAE WES
PO Box 631
Vicksburg MS 39180