



AQUATIC PLANT NEWS

A newsletter of the Aquatic Plant Management Society, Inc. No. 39-40 May 1992
K.A. Langeland, Editor, University of Florida, Center for Aquatic Plants, 7922 NW 71st St., Gainesville, FL 32606

1992 APMS ANNUAL MEETING AND INTERNATIONAL SYMPOSIUM ON AQUATIC PLANTS

MARRIOTT HOTEL, DAYTONA BEACH, FLORIDA
JULY 12-16, 1992

FINAL INFORMATION AND PROGRAM INSIDE!

AQUATIC PLANTS AND FISH FIVE YEAR STUDY COMPLETED

The relationship between vegetation and fisheries is an important variable in the aquatic plant management equation for lakes that are important fisheries resources. Fisherman's opinions, as well as scientific studies, leave us with a great deal of confusion as to how much and when aquatic plants should be controlled.

A recently completed report, titled "Aquatic Macrophytes and Their Relationship to the Limnology of Florida Lakes" by Canfield and Hoyer at the UF, IFAS Department of Fisheries and Aquaculture provides new insight into the relationships between aquatic

plants and fisheries in Florida lakes. Sixty lakes were studied over a five year period. No relation between standing crop of harvestable largemouth bass and percent area covered with aquatic macrophytes was found. However, when fish biomass was adjusted for lake trophic state (chlorophyll a), maximum biomass tended to occur in lakes when 20% to 40% of the lake volume was occupied by aquatic macrophytes.

The report also suggests that decreased chlorophyll a concentrations and subsequent increase in water clarity will not be observed in a eutrophic

lake unless macrophyte coverage exceeds 30% to 50%. Removal of aquatic vegetation in lakes with less than 30% macrophyte coverage will probably have no noticeable effect on whole-lake trophic state parameters. Conversely, leaving a small fringe of vegetation for the purpose of water quality improvement will have little or no effect on the trophic state values for a lake.

For further information contact Mark Hoyer, Department of Fisheries and Aquaculture, Center for Aquatic Plants, University of Florida, 7922 N.W. 71st Street, Gainesville, FL 32606, 904/392-9617.

Letter to the Editor:

In newsletter #38 you reprinted an article from the "Aquatic Plant Management Quarterly" that summarized an article by Dr. Richard Mack about waterhyacinth's introduction into the US. By chance, I read Mack's article a few minutes before opening the APMS Newsletter and noticed discrepancies in the two.

Mack's article reports that waterhyacinth was repeatedly available in a German seed catalog for 20 years before the exhibition not that it was repeatedly sold.

Also, Mack's article stated that it was available as *P. crassipes* by at least 1884 from a US catalog not that it was sold before 1884. I assume that 1884 was the first catalog entry Mack found for it in the US but because he did not examine all the catalogs prior to 1884 he said at least 1884.

Mack was trying to emphasize that the seed trade may have helped introduce many of our weeds and at earlier times than presently thought. He never stated

that waterhyacinth was introduced prior to 1884.

It is interesting that his first date for an entry in a US catalog was 1884 and the exhibition was 1884. Perhaps the plants handed out in New Orleans were purchased from the catalog (?).

Gary Buckingham,
Research Scientist
USDA Quarantine,
Gainesville, Florida

"AQUATIC PLANT IDENTIFICATION VIDEOTAPE SERIES" COMPLETED

The University of Florida, IFAS, Center for Aquatic Plants is proud to announce completion of its videotape "Aquatic Plant Identification Series." The entire series consists of the following videotapes:

- Emerald Plants - Part I (VT-361), 19 plants.
- Emerald Plants - Part II (VT-369), 18 plants.
- Floating and Floating-Leaved Plants (VT-360), 14 plants.
- Submersed Plants - Part I (VT-362), 13 plants.
- Submersed Plants - Part II (VT-370), 11 plants.
- Grasses, Sedges, and Rushes - Part I (VT-363), 20 Plants.
- Grasses, Sedges, and Rushes - Part II (VT-371), 20 plants.

The programs are available in VHS, S-VHS, or Pal formats. All programs cost \$15.00 each (plus \$.90 for Florida residents). Make checks payable to University of Florida. Order from: IFAS Publications, Building 664, Gainesville, FL 32611-0001.

INTERNATIONAL CONTACTS DIRECTORY

The International Contacts Committee has produced a directory of international contacts, associated with aquatic plant management, including all international APMS members and many others. This list includes 311 people, representing 43 countries and has been arranged both in alphabetical order and by country. About half of the entries are contacts in Canada and Great Britain.

It is the intent of the committee to make this directory available to all

APMS members, particularly those planning to travel overseas. However, because of its size it is suggested that requests for international contacts be made by country rather than for the whole list. A copy of this directory will be available at the Annual Meeting in Daytona Beach for corrections or additional entries to be made. For further information prior to the July meeting, contact Alison Fox at tel: (904) 392-9613 or fax: (904) 392-3462.

AQUATIC USE OF SIMAZINE DROPPED

CIBA-GEIGY Corporation is making voluntary changes in registration of herbicide products that contain the active ingredient simazine, which will result in loss of all aquatic and non-crop uses. These application sites include aquariums, ponds, fish hatchery ponds, ornamental ponds, ornamental

fountains, swimming pools, agricultural noncrop areas, rights of way, industrial and farm storage sites, fencerows, etc. For further information contact Mr. Thomas Parshley, Regulatory Manager, Ciba-Geigy Corporation, Agricultural Division, P.O. Box 18300 (919/632-7207).

IN MEMORY

Gloria Rushing

Gloria Rushing died January 10, 1992. Gloria became an active member of APMS in 1979 and was very involved with the society's management. We will miss Gloria as individuals and as a Society and she

will remain in the minds of her APMS friends.

Memorials may be made to the Montgomery Hospice Society at 1450 Research Blvd., Rockville, MD 20850.

COASTAL WETLANDS BIOLOGIST POSITION

The Texas Parks and Wildlife Department is seeking to fill a Conservation Scientist I-IV, Coastal Wetlands Biologist position. The position requires a B. S. Degree with specialization in wildlife science, wetlands ecology or closely related field; minimum of one year TPWD relevant experience or two years outside relevant experience; experience in application of wildlife management principles and techniques, technical writing and implementing programs dealing with wildlife management; and experience in wetlands management. For additional information contact Brent Ortego 512/389-4773.

NCSU ASSISTANTSHIP AVAILABLE

An assistantship is available beginning in the fall semester, 1992, in the area of Weed Science. The successful applicant is expected to pursue the M. S. degree in either Horticultural Science or Crop Science at North Carolina State University. Research emphasis will be on the effects of aquatic herbicides in irrigation water on horticultural crops and tobacco. For more information contact D. W. Monks at (919) 515-5370 or S. H. Kay at (919) 515-5645.

NOMINATIONS FOR 1992 OFFICERS AND DIRECTORS

The following slate of nominations for 1992-93 Officers and Directors of the Aquatic Plant Management Society was submitted by the nominations committee at the January Board of Directors Meeting.

President: Joe Zolczynski

Vice President: Steve de Kozlowski

Editor: Bill Haller

Newsletter Editor: Ken Langeland

Directors: Alison Fox

Dick Hinterman

There was concern expressed over whether there is a by law that prohibits two "skis" in a row. There being no such prohibition found, the slate was approved by the Board.

LATE REGISTRATION FORM

APMS THIRTY-SECOND ANNUAL MEETING and
INTERNATIONAL SYMPOSIUM ON THE BIOLOGY AND CONTROL OF AQUATIC PLANTS
Daytona Beach, Florida, USA: 12-17 July 1992

Please type or print.

LAST NAME: _____ FIRST NAME: _____

ORGANIZATION: _____

TITLE: _____

ADDRESS: _____

STATE, MAIL CODE, COUNTRY: _____

BUSINESS TELEPHONE: _____

All fees and costs indicated on this form should accompany the form when mailed to the Secretariat, APMS Inc., PO Box 2695, Washington DC 20013-2695, USA. The basic registration fee includes coffee/tea breaks, President's reception, Beach party, Symposium dinner and the Proceedings of the Symposium.

Full registration \$200.00 _____

Spouse, partner, child over age 12 \$100.00 _____

Student presenting paper or poster
(all meals and social functions included) NO CHARGE

Regular student registration - no presentation \$25.00 _____

(no meals or social functions except breaks)

Extra function tickets (for use by non-registrants)

President's reception \$25.00 _____

Beach party \$35.00 _____

Symposium dinner \$50.00 _____

Proceedings \$40.00 _____

APMS membership dues

Active \$35.00 _____

Student \$5.00 _____

Sustaining \$200.00 _____

APMS Scholastic Endowment (donations appreciated) _____

TOTAL AMOUNT OF REMITTANCE ENCLOSED \$ _____

All payment to be made only in American dollars by either bank or personal check on a US bank (payable to APMS, Inc.) or by credit card. For payment by credit card please provide information indicated below:

Check one: VISA _____ MC _____ AMERICAN EXPRESS _____

CARD NUMBER: _____

Expiration date: _____ NAME ON CARD: _____

SIGNATURE _____ DATE _____

Third and Final Circular and Tentative Program

THE AQUATIC PLANT MANAGEMENT SOCIETY, INC.

presents

THE THIRTY-SECOND ANNUAL MEETING

and

INTERNATIONAL SYMPOSIUM ON THE BIOLOGY

AND MANAGEMENT OF AQUATIC PLANTS

July 12 - 16, 1992

Marriott Hotel

Daytona Beach, Florida, USA

SEND Forms and Correspondence to:

Secretariat: Bill Rushing

APMS Inc.

P.O. Box 2695

Washington D.C. 20013

INTRODUCTION

Plans for the 32nd Annual Meeting of the Aquatic Plant Management Society and International Symposium on the Biology and Management of Aquatic Plants are progressing well and we are encouraged by the large number of registrations.

This third circular has been sent to all APMS members and all respondents to the second circular. You should find included with this document:

Tentative program

Late registration form

Manuscript preparation guide for the Journal of Aquatic Plant Management (enclosed for non-APMS members only).

REGISTRATION INFORMATION

If you have not already registered you can either send the enclosed "Late Registration Form" to the Secretariat or register at the meeting. Registration by mail prior to the meeting is preferred by the Secretariat and will simplify your arrival at the meeting.

Registration fees should accompany the enclosed registration form or will be due at the beginning of the meeting. The registration fee includes coffee/tea breaks, president's reception, beach party, symposium dinner and the proceedings.

Full registration	\$200.00
Spouse, partner, child over age 12	\$100.00
Children 12 or under	No charge
Student presenting paper or poster (all functions included)	No charge
Student not presenting paper or poster (no functions included except coffee/tea breaks)	\$25.00

The option to purchase extra or individual function tickets will be available at the registration desk.

All payment is to be made to the Secretariat in American dollars by either bank check or personal check (within the USA), or by credit card: AMEX, MC, VISA. Payable to APMS Inc.

SPONSORS AS OF MAY 1, 1992

American Cyanamid, Inc.

ATOCHEM, North America.

Brewer International Chemical Inc.

Environment Canada.

Florida Aquatic Plant Management Society.

Helena Chemical Company.

Imperial Irrigation District.

Monsanto Agricultural Chemical Company.

Rhône-Poulenc.

South Carolina Water Resources Commission.

South Florida Water Management District.

Tennessee Valley Authority.

University of Florida, Center for Aquatic Plants.

U.S. Department of Agriculture, Agriculture
Research Service.

U.S. Department of the Interior, Bureau of
Reclamation.

VALENT

INSTRUCTIONS FOR CONTRIBUTORS

INSTRUCTIONS FOR PRESENTATIONS

Speakers will be allowed 15 minutes for their presentation which must **include** a few minutes for questions. This timing will be strictly enforced. Facilities for projecting standard (2 x 2 inch) slides and overhead transparencies will be provided. Kodak slide carousels will be available for each session or you may use your own provided that it is clearly marked with your name. A room for previewing slides will be available.

A tentative program is enclosed with this circular. The final program and abstracts will be included in your registration package. Speakers should contact their session chair as soon as possible at the meeting to indicate their presence and to discuss their audio-visual aid needs.

INSTRUCTIONS FOR POSTERS

The poster session will be held on Wednesday afternoon in a room adjacent to the exhibitors' area. Presenters of posters will be expected to be in attendance at that time but will be encouraged to mount their material on Tuesday evening so that it may be viewed throughout Wednesday. Posters should be prepared to fit an area of wall space approximately 2m by 2m and can be attached with pins or velcro hooks. Presenters of posters should ensure that all material (especially tables and figures) can be easily read from a distance of at least 1m. The Program Committee member responsible for organizing the poster session will be introduced at the beginning of the meeting.

EXHIBITOR INFORMATION

Exhibitors are invited to set up displays as space will be available at the symposium for commercial exhibitors to promote their products and provide information to symposium delegates. If you are interested in an exhibitor's booth please contact Paul Myers as soon as possible for information on availability and associated costs. Non-profit agencies and societies are also encouraged to set up educational displays. Contact: Mr. Paul Myers, c/o Applied Aquatic Management Inc. PO Box 1437, Eagle Lake, FL 33839. Tel:(813) 533-8882.

INSTRUCTIONS FOR PUBLICATION

The proceedings of this symposium will be published as a special issue of The Journal of Aquatic Plant Management at no cost to the authors. Presenters (including those with posters) must hand in their paper at the registration desk upon arrival. These papers will then be submitted to the editorial committee for peer review. Submission of a paper does not guarantee acceptance.

Paper Instructions: Scientific papers should have a maximum of 10 double-spaced, typed pages with two figures and two tables or combination thereof. Further details of style are presented in January issues of the Journal or in the "Manuscript Preparation Guide" enclosed only for non-members. The \$30 page charge is waived. Reprints will **not** be available. Each registrant will receive a copy of the Proceedings after printing and additional copies may be purchased at that time.

STUDENTS

Further details concerning the Student Paper Competition (oral presentations only) and judging criteria will be sent to contestants prior to the meeting. There will also be several posters presented by students.

Students who are not presenting a paper or poster may register at a reduced rate. To be eligible for the student rate you must be registered as a full-time student at a recognized educational institution within the six months prior to the meeting.

An informal social function will be arranged by President Stocker and the Student Affairs Committee early in the meeting to introduce students and associated faculty to members of the APMS board and the plenary speakers. Further information on this event will be provided before the meeting.

PLACEMENT NOTIFICATION

A notice board will be prominently displayed near the exhibitors' area upon which information about job and course vacancies relevant to aquatic plants may be placed. Please bring any such information with you, particularly considering the future interests of students who will be attending the meeting.

HOTEL INFORMATION

A special conference room rate has been obtained at the Marriott Hotel on the beach front at Daytona Beach, Florida. The room rates are as follows:

\$ 80.00 per night for 1 or 2 adults
\$ 90.00 per night for 3 adults
\$100.00 per night for 4 adults
Under 18 FREE
(all rates + 9% Tax)

Reservations will be confirmed on a first-come, first-served basis. Reservations must be received by the Marriott no later than June 20 (1992) and must include at least one night's room rate by either USA check or credit card. Reservations can be made by telephoning the hotel at (904) 254-8200 or by writing to: Marriott Hotel, 100 N. Atlantic Avenue, Daytona Beach, FL 32118. Mention the Aquatic Plant Management Society Meeting and give credit card number. Any rooms not reserved by that date will be released from the blocks originally set aside for the meeting. The Marriott will continue to take requests after June 20, but cannot guarantee that space at the conference rate will be available.

The Marriott will accept reservation changes or cancellations if requested in writing at least 72 hours before the date for which the reservation was made. After that date, any hotel charge for unused accommodation will be billed to the participant.

DIRECTIONS TO THE MARRIOTT HOTEL

Arrival by car:

Reservations should be made in advance for rental cars, both to guarantee car availability and because advance bookings are usually cheaper. Overseas visitors should enquire with their travel agents as to whether a "Fly and Ride" package is available from their country that may be more economical than the normal local rates.



From Daytona Beach airport (10 minutes)
or Orlando by Interstate 4 (1 hour):
Take Highway 92 east to A1A (cross Halifax River). Turn left on A1A. Go one mile to Daytona Beach Marriott, across the street from the large Ocean Center Convention and Civic Complex.

Arrival by airplane:

The Daytona shuttle bus service has a desk at the luggage claim area of the **Daytona Beach Regional Airport**. The shuttle will stop at the Marriott Hotel as requested for a fare of \$7.

Two booths at the **Orlando International Airport** will be staffed on Sunday July 12, 1992, by APMS members, to welcome visitors and provide information about the airport facilities. It is about an hour's drive from Orlando International Airport to Daytona Beach and there are various limousine (shuttle bus) services which will make that journey at considerably less expense than a taxi. Typical limousine fares would be \$35 one way and \$65 round-trip and leave Orlando hourly. Some information about limousine services will be available at the APMS booths at the airport. Families or groups arriving together should check prices for advanced bookings on car rentals because these may work out to be cheaper than limousine fares.

LOCAL ARRANGEMENTS

There will be a booth at the meeting from noon on Sunday until noon on Tuesday at which information about local activities will be available. Members of the Local Arrangements Committee will be identified at the beginning of the meeting and please do not hesitate to ask them questions about local sites or customs; if they don't have all the answers they should know where to find them!

The Central Florida area has numerous family oriented attractions, most within 100 miles of the symposium site at Daytona Beach. The local arrangements committee has gathered information on several of these attractions and has suggestions for reasonably priced accommodations in the Orlando/Disney area. There are plenty of things for the family to do while you attend the meetings. If you are considering spending a week or so prior to, or after the symposium in the central Florida area, you will have to make your own arrangements. For further information contact Ms. Wendy Andrew, 2379 Broad Street, Brooksville, Florida 34609, USA. Tel: (904) 796-7211 ext. 4537.

SCIENTIFIC POST-SYMPOSIUM TOURS

Tour 1. North-central Florida aquatic plant control. Thursday, July 16 - Saturday, July 18, 1992.
Deposit of \$100 required; total expected costs (including deposit) no more than \$250.

Tour 2. Scientific tour of south Florida and the Everglades. Thursday, July 16 - Monday, July 20, 1992.
Deposit of \$150 required; total expected costs of \$300 sharing a room and \$400 for single room.

There are a few spaces available on each of the post-symposium tours. Please refer to the second circular for further information about these tours or contact Ken Langeland for Tour 1 and Alison Fox for Tour 2 at: Center for Aquatic Plants, 7922 NW 71st Street, Gainesville, FL 32606. Tel:(904) 392-9613. Fax:(904) 392-3462. If you are interested in either tour please contact Ken or Alison as soon as possible.

Detailed itineraries and further information on expenses will be sent to those who have already registered for these tours soon. Those going on the tours will be required to attend an organizational meeting near the beginning of the symposium.

GENERAL INFORMATION FOR OVERSEAS PARTICIPANTS

MEDICAL INSURANCE

Ensure that you have got adequate medical insurance prior to arriving in the USA. There are no free medical services available to overseas visitors and all medical materials or procedures can become very expensive. Contact the Marriott Hotel for any advance information about local doctors and medical facilities.

ENTRANCE TO USA

All foreign visitors entering the USA must have a valid passport. The need for a USA visa, in addition to a passport, varies with country. Please check with your local travel agent or USA embassy.

CLIMATE & CLOTHING

The climate in July is hot and humid, the average daytime temperature being 30°C, and 23°C at night. Average humidity 85%. Remember to bring swimming apparel.

FOREIGN CURRENCY EXCHANGE

There is a bank that will exchange foreign currency just 2 blocks from the hotel. This bank is open from 07:30 to 16:00 Monday through Friday. Foreign currencies can also be exchanged at international airports.

TRAVELLER'S CHECK AND CREDIT CARDS

International credit cards such as American Express, Visa, Diners Club, and Master Card are acceptable at most establishments. Traveller's checks are widely accepted by leading banks, shops and hotels in major cities. The Aquatic Plant Management Society Secretariat will also accept AMEX, MC, and VISA for registration to the conference.

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PROGRAMS

SOCIAL PROGRAM

The **President's Reception** on Sunday evening will be held indoors and will be semi-formal (i.e. jackets and ties suggested). Hors d'oeuvres will be served with complimentary wine and beer, and a cash bar will be available.

Conversely, the **Beach Party** on Monday evening will be out-of-doors and informal, including volleyball and other beach games (e.g. shorts or swimsuits suggested). A picnic and drinks will be served on the hotel patio. Alcoholic beverages are not allowed on the beach.

The **Symposium Dinner** on Wednesday will include a buffet-style meal with cash bar, and the presentation of APMS awards. Informal dress representing your college, business or national affiliation is suggested (e.g. school colors, company logos, national costume).

PARTNERS (SPOUSE) PROGRAM

Depending on demand, trips can be organized, at cost to participants, to Central Florida attractions (e.g. Kennedy Space Center; St. Augustine). Partners will be asked to sign-up for such tours at the Local Arrangements booth, early in the meeting. An informal lunch will be arranged on Monday to allow registered partners and children to meet each other.

The Marriott provides baby-sitting services upon request. Rates and information about other childrens' activities can be obtained from the hotel by calling (904) 254-8200.

TENTATIVE PROGRAM

The APMS 32nd Annual Meeting and International Symposium on the Biology and Management of Aquatic Plants

Daytona Beach, Florida. 12-16th July, 1992.

While the program for oral presentations is almost complete, space is still available for additional posters. Please inform the Secretariat as soon as possible of any corrections needed to your program entry, or if you would like to submit a poster. The affiliation of only the presenting author is listed in the program but the affiliations of all authors will be included in the published abstracts. The final program and abstracts will be provided in your registration package at the meeting.

*This program is offered on a non-discriminatory basis,
without regard to race, color, national origin, sex, handicap or age.*

SATURDAY, 11th JULY

12:00 pm APMS Board of Directors Luncheon

1:30 APMS Board of Directors Meeting

SUNDAY, 12th JULY

1:00 - 5:00 pm Registration Desk, Editorial Desk, Local Arrangements and Exhibits Open

4:00- APMS Publications Committee Meeting

6:00 - 7:30 **President's Reception**

7:30 - 7:45 Session Chair Meeting

MONDAY, 13th JULY

7:30 am - 5:00 pm

Registration Continued

9:00 Call to Order; Announcements; Welcome Addresses

9:15 President's Address: APMS President Randall Stocker

Plenary Session Chair: Randall Stocker

9:30 One Hundred Years of Aquatic Plant Management in the United States. **J. Lewis Decell**, Aquatic Plant Control Research Program, U.S. Army Corps of Engineers, Vicksburg, Mississippi.

10:10 **Morning Break**

10:40 Aquatic Weeds in Developing Regions. **Tomi Petr**, Fishery Resources Officer, Food and Agriculture Organization of the United Nations, Rome, Italy.

11:20 The Ecophysiology of Aquatic Plants. **George Bowes**, Botany Department, University of Florida, Gainesville, Florida.

12:00 **Lunch**

1:10 Environmental Problems in Post-Communist Central Europe. **Jan Kvet**, Czechoslovak Academy of Sciences, Institute of Botany, Trebon, Czechoslovakia.

1:50 Ecology and Management of Aquatic Weeds. **Clive Howard-Williams**, New Zealand Crown Research Institute, Taupo, New Zealand.

2:30 **Afternoon Break**

Session I

General Papers **Chair: Clarke Hudson**

3:00 Aquatic Plant Management - Development Perspectives and Needs. **Tom Brabben**, The World Bank, Washington, DC.

3:15 Ten Years of Information Services. **Victor Ramey**, University of Florida, Gainesville, Florida.

3:30 Nonindigenous Aquatic Nuisance Species Act of 1990; The Aquatic Nuisance Task Force. **W.E. Roper**, U.S. Army Corps of Engineers, Washington, DC.

3:45 The Long Water - Kissimmee River. **Charles E. Graves**, South Florida Water Management District, Okeechobee, Florida.

4:00 The Aquarium Plant Industry, an Opportunity for International Cooperation. **Don Bryne**, Suwannee Labs, Live Oak, Florida.

4:15 Process and Progress of Aquatic Herbicide Re-Registration by the USEPA. **Fred Kerpel**, U.S. Environmental Protection Agency, Atlanta, Georgia.

4:30 - 5:15 Aquatic Plant Management Society Business Meeting

6:30 **Beach Party**

* = Student Presentation; TBA = To Be Announced; Bold = Presenting author

Session IIA

Herbicide Effects

Chair: Kurt Getsinger

- 8:00 Inhibition of Propagule Formation and Propagule Dormancy by Mariner Herbicide in Hydrilla verticillata, Potamogeton nodosus: Implications for Long-Term Macrophyte Management. **L.W.J. Anderson**, U.S. Department of Agriculture, Agriculture Research Service, Davis, California.
- 8:15 Hydrilla Control Trials in Florida with Mariner (Bensulfuron Methyl) Herbicide. **Ken Langeland**, University of Florida, Gainesville, Florida.
- 8:30 * Use of Hollow-Fiber Dialysis Tubing for Measurement of Diffusive Flux of Bensulfuron-Methyl in Sediments. **Mark D. Sytsma** and **L.W.J. Anderson**, U.S. Department of Agriculture, Agriculture Research Service, Davis, California.
- 8:45 Efficacy of Bensulfuron Methyl on Eurasian Watermilfoil. **L.S. Nelson**, M.D. Netherland and **K.D. Getsinger**, U.S. Army Corps of Engineers, Vicksburg, Mississippi.
- 9:00 * Sensitivity of Floating Aquatic Weeds to Imazapyr in the Water Column. **Chad R. Coley** and **Stratford H. Kay**, North Carolina State University, Raleigh, North Carolina.
- 9:15 * The Influence of Cultural Factors and Glyphosate on the Control of Torpedo Grass (Panicum repens L.). **B.E. Smith**, D.G. Shilling and **W.T. Haller**, University of Florida, Gainesville, Florida.
- 9:30 * Evaluation of Myriophyllum sibiricum in Axenic Culture as a Bioassay for Predicting Effects of Pesticides on Non-Target Aquatic Plants. **Roxana D. Roshan**, **Gerald R. Stephenson** and **Roger F. Horton**, University of Guelph, Guelph, Canada.
- 9:45 Copper Residues in the Environment - What Are We Looking For? **Edwin F. Koldenhoven**, Griffin Corporation, Valdosta, Georgia.

Session IIB

Photosynthesis and Aquatic Plants

Chair: Mark Rattray

- Seasonal Variation in Photosynthetic Capacity of Eelgrass Leaves in Relation to Leaf Age, Chlorophyll *a* and Nutrient Content. **Jens Borum**, University of Copenhagen, Copenhagen, Denmark.
- * Chlorophyll Fluorescence of Elodea canadensis: The Response of Photosynthetic Electron Transport to Limiting CO₂ Concentrations. **Lucina C. van Ginkel**, **Philip R. van Hasselt** and **Hidde B.A. Prins**, ECOTRANS, Haren, The Netherlands.
- Morphological and Photosynthetic Characteristics of Potamogeton obtusifolius Mert. & Koch, Grown at Different Depths. **S.C. Maberly**, Institute of Freshwater Ecology, Ambleside, England.
- * Physiological Plasticity in Elodea nuttallii (Planch.) St. John. **J.I. Jones**, **J.W. Eaton** and **K. Hardwick**, University of Liverpool, Liverpool, England.
- Inorganic Carbon Transport and the Internal Limiting Factor for Photosynthetic Production in Submerged Macrophytes. **Sven Beer**, Tel Aviv University, Tel Aviv, Israel.
- Inorganic Carbon Constraints on Growth of Submerged Macrophytes. **Tom Vindbaek Madsen** and **Mette Vadstrup**, Aarhus University, Risskov, Denmark.
- What Induces Hydrilla to Shift Between C₃- and C₄-Like Photosynthesis? **J.B. Reiskind**, **M.R. Rattray** and **G. Bowes**, University of Florida, Gainesville, Florida.
- Ecological Significance of C₄-Like Photosynthesis in Hydrilla. **W.E. Spencer**, **R.G. Wetzel** and **J.A. Teeri**, University of Michigan, Ann Arbor, Michigan.

10:00

Morning Break

Session IIIA

Utilization of Aquatic Weeds

Chair: Steve de Kozlowski

- 10:20 * **Yield and Nutritive Value of Leaf Protein of Aquatic Weeds from North India. V.N. Pandey**, University of Gorakhpur, Gorakhpur, India.
- 10:35 **The Use of Dry Water Hyacinth (Eichhornia crassipes (Mart.) Solms) as a Substratum for Growing Plants on the Raft. Rajanee Virabalin**, Chulalongkorn University, Bangkok, Thailand.
- 10:50 **Effects of Aquatic Plants on the Environment: The Use of Water Hyacinths and Other Aquatic Plants for Nutrient Reduction in Lakes. David L. Haselow**, John R. Shuman and William F. DeBusk, Aquatic Plant Technology, Cocoa, Florida.
- 11:05 **Nutrient Removal Potential of Several Aquatic Weeds. Yoko Oki and Akihide Fushimi**, Okayama University, Okayama, Japan.
- 11:20 **Leaf Protein Concentrate from Water Hyacinth (Eichhornia crassipes (Mart.) Solms). Boonthida Kositsup, Rajanee Virabalin and Hunsa Punnapayak**, Chulalongkorn University, Bangkok, Thailand.
- 11:35 **Use of Aquatic Weeds for Pollution Control and Wastewater Treatment Under Jamaican Conditions. P.V. Devi Prasad**, The University of the West Indies, Kingston, Jamaica.
- 11:50 **Control and Utilization of Cattail (Typha latifolia L.). M. Siriworakul and P. Benyasut**, Royal Irrigation Department, Nonthaburi, Thailand.

12:05

Session IIIB

Nutrition and Aquatic Plants

Chair: Kenneth Mantai

- Injection of Nutrients Into a Sand Rooting Media for Culture of Dioecious Hydrilla. David L. Sutton**, University of Florida, Ft. Lauderdale, Florida.
- Interrelationships Between Rooting Depths of Submersed Macrophytes and Sediment Nutrient Availability. Dwilette G. McFarland and John W. Barko**, U.S. Army Corps of Engineers, Vicksburg, Mississippi.
- * **The Role of Hydrosol in recolonization of Native Macrophytes. Arthur W. Dunn and John H. Rodgers, Jr.**, University of Mississippi, University, Mississippi.
- * **Effects of Eutrophication on Ranunculus penicillatus subsp. pseudofluitans (Syme) S. Webster and Potamogeton pectinatus L.: An Experimental Study. A.J. Spink, K.J. Murphy, S.M. Smith and D.F. Westlake**, University of Glasgow, Glasgow, Scotland.
- Responses of Aquatic and Marsh Plants to Hypereutrophic Conditions in Central European Fishponds. J. Pokorny, J. Kvet and S. Husak**, Czechoslovak Academy of Sciences, Trebon, Czechoslovakia.
- * **Nutrient and Aquatic Plant Status of Freshwater Lochs in the Shetland Islands. M. Hennessy and K.J. Murphy**, University of Glasgow, Glasgow, Scotland.

TBA

Lunch

TUESDAY, 14th JULY 1:00 - 3:00 pm

Session IVA

Biocontrol Mechanisms

Chair: Wendy Forno

- 1:00 Managing Filamentous Algae Growth Using Grass Carp and Algicides. **Richard Couch**, Oral Roberts University, Tulsa, Oklahoma.
- 1:15 Capture of Grass Carp From Vegetated Lakes. **S.A. Bonar**, S.A. Vecht, C.R. Bennett, G.B. Pauley and G.L. Thomas. University of Washington, Seattle, Washington.
- 1:30 Procedures for Introducing Biocontrol Agents of Noxious Plants Into the U.S. **Alfred F. Cofrancesco, Jr.**, U.S. Army Corps of Engineers, Vicksburg, Mississippi.
- 1:45 Impact of Early-Season Migrations of Alligatorweed Stemborers on Alligatorweed Populations in North Carolina. **Stratford H. Kay**, North Carolina State University, Raleigh, North Carolina.
- 2:00 The Impact of Temperature on the Development of Hydrellia pakistanae Life Stages, **Ramona H. Warren**, U.S. Army Corps of Engineers, Vicksburg, Mississippi.
- 2:15 Rearing and Releasing Hydrellia pakistanae and Hydrellia balciunasi, Biological Control Agents of Hydrilla verticillata. **Jan Freedman**, U.S. Army Corps of Engineers, Vicksburg, Mississippi.
- 2:30 Effect of Australian Insects on the Growth of the Paperbark Tree, Melaleuca quinquenervia, A Serious Wetland Weed in Florida, USA. **Joe Balciunas**, U.S. Department of Agriculture, Agriculture Research Service, Townsville, Australia.
- 2:45 Attachment and Infection of Fungal Pathogens on Submersed Aquatic Plants. **Edwin A. Theriot**, U.S. Army Corps of Engineers, Vicksburg, Mississippi.

3:00

Session IVB

Aquatic Macrophyte Communities

Chair: Moshe Agami

- Assessment of Vegetation in Two Rivers Entering Lake Superior Using Low Altitude Aerial Infrared and Color Photography Coupled with Image Analysis. **P.F. Lee**, Lakehead University, Thunder Bay, Canada.
- Changes in Plant Community Structure Following Liming of an Acidified Adirondack Lake. **P.A. Bukaveckas**, E.R. Weiher and C.W. Boylen. Institute of Ecosystem Studies, Millbrook, New York.
- Changes in the Plant Community of Chautauqua Lake, N.Y., Between 1937 and 1991. **Janice Alm Bowman** and **Kenneth E. Mantai**, State University of New York, Fredonia, New York.
- * Seasonality of Community Composition and Biomass for Selected Submersed Aquatic Macrophytes, Lake Okechobee, Florida. **Margaret S. Hopson** and Paul V. Zimba, University of Florida, Gainesville, Florida.
- * Environmental Factors Affecting Submerged Macrophyte Communities in Regulated Waterbodies in Egypt. **M.M. Ali**, A. Hamad, I. Springuel and K.J. Murphy, University of Glasgow, Glasgow, Scotland.
- * The Distribution, Ecology and Conservation of Luronium natans (L) Raf. in Britain. **N.J. Willby** and J.W. Eaton, University of Liverpool, Liverpool, England.
- Potential for Re-Establishment of Macrophytes in a Shallow Coastal Lagoon in New Zealand. **P.J. Gerbeaux** and K.F. O'Connor, Lincoln University, Christchurch, New Zealand.
- Ecological Differentiation of Populations of Utricularia minor L. and Utricularia intermedia Hayne. **P. Kosiba** and J. Sarosiek, Wroclaw University, Wroclaw, Poland.

Afternoon Break

Session VA

Herbicide Physiology

Chair: Kathleen Bowmer

- 3:20 * Conductivity: A Measure of Membrane Injury of Aquatic Plants. **Paul G. Fader** and John H Rodgers, Jr., University of Mississippi, University, Mississippi.
- 3:35 * Methods for Evaluating the Activity of Aquatic Herbicides. **G.E. MacDonald**, D.G. Shilling, T.A. Bewick and W.T. Haller, University of Florida, Gainesville, Florida.
- 3:50 Interactive Effects of Photoperiod and Fluridone on Hydrilla verticillata. **D.G. Shilling**, G.E. MacDonald, R.L. Doong and W.T. Haller, University of Florida, Gainesville, Florida.
- 4:05 Effects of Fluridone on Carotenoids, Chlorophyll and Anthocyanins in Hydrilla verticillata. **R. L. Doong**, G.E. MacDonald and D.G. Shilling, University of Florida, Gainesville, Florida.
- 4:20 AHAS, A New Enzyme Target in Aquatic Plant Herbicide Control. **M.R. Rattray**, D.G. Shilling and G. Bowes, University of Florida, Gainesville, Florida.
- 4:35 Peroxidase Levels as Indicators of Herbicide-Induced Stress in Aquatic Plants: Techniques for Analysis. **S.L. Specher**, A.B. Steward and J.M. Brazil, AScl Corporation, Vicksburg, Mississippi.
- 4:50 Leaf Disk/Shoot Section Contaminant Bioassay Systems for Aquatic Macrophytes. **D.A. Francko**, Miami University, Oxford, Ohio.

Session VB

Macrophyte/Algal Interactions

Chair: Joseph Caffrey

- Macrophyte Stands as a Habitat: Environmental Factors and Structure. **U. Wyche**, R. Zoufal, P. Christoff-Dirry, and **G.A. Janauer**, Institute Plantphysiology, Vienna, Austria.
- Change in Submerged Macrophytes and Filamentous Algae in Green Lake, Wisconsin, from 1921. **Mary Jane Bumby**, Green Lake Sanitary District, Green Lake, Wisconsin.
- Seasonal Relationship Between Southern Naiad and Associated Periphyton. **Ernesto Lasso de la Vega**, J.R. Cassani and H. Allaire, Lee County Hyacinth Control District, Fort Myers, Florida.
- * Relationships Between Submerged Macrophytes and Algae in Freshwater Lochs of Differing Trophic Status. **S.J. Marrs**, K.J. Murphy and P.J. Dominy, University of Glasgow, Glasgow, Scotland.
- Aquatic Macrophytes versus Phytoplankton in Lakes: A Practical Management Guide. **Mark V. Hoyer** and Daniel E. Canfield, Jr., University of Florida, Gainesville, Florida.
- The Biogeography of Lynghya wollei. **Barbara J. Speziale**, Clemson University, Clemson, South Carolina.
- Comparison of Macrophyte Versus Epiphyte Productivity Rates in Lake Okeechobee, Florida. **P.V. Zimba**, University of Florida, Gainesville, Florida.

5:05 **End of Session**

7:00- WORKSHOPS

1. Environmental Factors Affecting Plant Growth. - John Barko and Pat Chambers, Co-Chairs.
2. Carbon Fixation and Concentrating Mechanisms. - George Bowes and Tom Madsen, Co-Chairs.
3. New Frontiers in Biocontrol. - Al Confrancesco and Wendy Forno, Co-Chairs.
4. Distribution and Spread of Aquatic Plants. - Randy Westbrook and Don Schmitz, Co-Chairs.

Session VIA

Field Trials of Herbicides

Chair: Don Riemer

- 8:00 Laboratory Evaluations of Fluridone Concentration and Exposure Time Requirements for Control of Hydrilla and Eurasian Watermilfoil. M.D. Netherland, **K.D. Getsinger** and E.G. Turner, U.S. Army Corps of Engineers, Vicksburg, Mississippi.
- 8:15 Concentration/Exposure Relations of Fluridone Associated with Hydrilla Management in the Withlacoochee River, Florida. **Alison M. Fox**, W.T. Haller and D.G. Shilling, University of Florida, Gainesville, Florida.
- 8:30 Impacts on Wetland Vegetation from a Large Scale Sonar™ Application. **Terence M. McNabb** and Thomas Clingman, Resource Management/Aquatics Unlimited, Kent, Washington.
- 8:45 Effects of Rodeo™ on Different Densities of Eichhornia crassipes. **Eric D. Gutierrez Lopez**. Instituto Mexicano de Tecnologia del Agua, Mexico City, Mexico.
- 9:00 Chemical Control of Emergent Aquatic Weeds in the Irrigation System in the Sudan. **H. Abdel Gadir**, Agricultural Research Corporation, Wad Medani, Sudan.
- 9:15 Fate and Persistence of Herbicides for Control of Hydrilla verticillata and Myriophyllum spicatum in Guntersville Reservoir. **John H. Rodgers, Jr.**, Arthur W. Dunn, Earl Burns, A. Leon Bates and David Webb, University of Mississippi, University, Mississippi.
- 9:30 Efficacy of Bensulfuron-Methyl on Aquatic Macrophytes in Two Central California Ponds. **Stuart D. Perry** and J. Robert C. Leavitt. University of California, Davis, California.
- 9:45 Label Update on RENOVATE and SONAR and Recent Sonar Research Results. **David P. Tarver**, DowElanco, Tallahassee, Florida.

10:00

Session VIB

Reproductive Mechanisms

Chair: Georg Janauer

- Seed Production in Monoecious and Dioecious Populations of Hydrilla. **Kerry K. Steward**, Department of Agriculture, Agriculture Research Service, Fort Lauderdale, Florida.
- * Mechanisms of Coexistence of Submerged Macrophytes in Temporary Marshes. Role of the Seed Bank and the Regeneration Phase. **Anne Bonis**, Patrick Grillas and Jacques Leprieux, Station Biologique Tour du Valat - CEFV-CNRS, Montpellier, France.
- Germination, Growth and Development of *T. Nymphaea* Species Conserved at the Botanic Gardens of Tel Aviv University. **Moshe Agam** and Melgorzata Walczak, Tel Aviv University, Tel Aviv, Israel.
- * The Significance of Germination Behaviour of Typha subulata on Weed Management. **María T. Sobrero**, Osvaldo A. Fernandez and **Mario Sabbatini**, University of Glasgow, Glasgow, Scotland.
- Vegetation, Seed Banks, and Seedling Establishment in Two Softwater Lakes: Obligate Sexual Reproducers Dominate. **John Titus** and Gary Sullivan, State University of New York, Binghamton, New York.
- Potamogeton pectinatus L. Propagule Growth and Approaches for Modelling Survival of Submerged Macrophytes. **Gerda M. van Dijk** and Jan H. Janse. National Institute of Public Health and Environmental Protection, Bilthoven, The Netherlands.
- Water Management Practices Influence Plant Reproduction and Macrophyte Community Composition in a Northern California Irrigation Canal. **David Spencer** and Greg Ksander, U.S. Department of Agriculture, Agriculture Research Service, Davis, California.
- * Turion Production by Hydrilla. **J.D. Miller**, W.T. Haller and M.S. Glenn. University of Florida, Gainesville, Florida.

Morning Break

Session VIIA

Aquatic Plant Management Programs
Chair: Fred Nibling

- 10:20 Exotic Aquatic Plant Management in Florida; History and Status. **Jeffrey D. Schardt**, Florida Department of Natural Resources, Tallahassee, Florida.
- 10:35 An Overview of the Aquatic Plant Control Operations Support Center. **Wayne T. Jipsen**, William C. Zattau, and Catherine A. Robbins, U.S. Army Corps of Engineers, Jacksonville, Florida.
- 10:50 Review of Benefits of the British Columbia Aquatic Plant Management Program. **P.R. Newroth** and M.D. Maxnuk, British Columbia Ministry of Environment, Victoria, Canada.
- 11:05 Aquatic Plant Control in the Kissimmee River: A Ten Year History. **Jacqueline C. Jordan** and L. Mitchum, Florida Department of Natural Resources, Royal Palm Beach, Florida.
- 11:20 The Invasion of South Florida by Melaleuca quinquenervia. **Dan Thayer** and Francois Laroche, South Florida Water Management District, West Palm Beach, Florida.
- 11:35 Water Related Projects of the Imperial Irrigation District. **Randall K. Stocker**, Imperial Irrigation District, Imperial, California.
- 11:50 TBA

Session VIIB

General Physiology
Chair: Stephen Maberly

- Carbonic Anhydrase Activity in Photosystem-Deficient Mutants of Chlamydomonas reinhardtii. **N.A. Pronina**, Russian Academy of Sciences, Moscow, Russia.
- Internal Gas Transport in Emergent Aquatic Macrophytes. **Hans Brix** and Brian Sorrell, Aarhus University, Risskov, Denmark.
- Oxygen Exchange by Entire Root Systems of Emergent Plants. **Brian K. Sorrell**, Philip T. Orr and Hans Brix, Murray-Darling Freshwater Research Centre, Albury, Australia.
- * Effects of Metabolic Products of Cellulose-Utilizing Organisms on Hydrilla verticillata Royle. **Brenda L. Pompey** and Dean Martin, University of South Florida, Tampa, Florida.
- Crust Composition on Leaves of Three Submerged Angiosperms. **Y. Waisel**, A. Stahel and J. Oertli, Tel Aviv University, Tel Aviv, Israel.
- Acute Toxicity of Plant Growth Regulators Using in vitro Cultures of Myriophyllum spicatum. **Kimion Bird**, University of North Carolina, Wilmington, North Carolina.
- Growth Regulator Effects on in vitro shoot regeneration of Crassula helmsii. **Michael E. Kane**, Nancy L. Philman and Carolyn A. Bartuska, University of Florida, Gainesville, Florida.

12:05

Lunch

WEDNESDAY, 15th JULY 1:00 - 3:00 pm

Session VIIIA

General Management

Chair: Joe Zolczynski

- 1:00 Clever Aliens. **Kathleen H. Bowmer**, G. McCorkelle and G.R. Sainty, Center for Irrigation and Freshwater Research, Griffith, Australia.
- 1:15 Aquatic Plant Community Response (Percent Composition and Biomass Estimates) to the 1990 Extreme Drawdown, Muck Removal, and Discing Project on East Lake Tohopekaliga, Florida. **Mikel W. Hulon**, Edwin J. Moyer, Robert S. Butler and Robert W. Hujik, Florida Game and Freshwater Fish Commission, Kissimmee, Florida.
- 1:30 Lime Additions in the Control of Aquatic Macrophyte Growth in Hardwater Lakes. **P.A. Chambers** and E.E. Prepas, National Hydrology Research Institute, Saskatoon, Canada.
- 1:45 Harbor Regional Park-Machado Lake Bulrush Harvest/Mosquito Control Project. **Thomas J. McNabb** and David Attaway, Aquatics Unlimited, Martinez, California.
- 2:00 The Control of Algae by Decomposing Barley Straw. **J.R. Newman** and P.R.F. Barrett, AFRC Long Ashton Research Station, Reading, England.
- 2:15 Possibilities of Utilizing an Exotic Weed Lantana camara to Control the Growth of Water Hyacinth. **Manjula K. Saxena (nee Kulshrestha)**, University of Rajasthan, Jaipur, India.
- 2:30 Aquatic Weeds and Their Effect on the Hydraulic Efficiency of Open Channels. **Fakhry Kattab**, Water Research Center, Cairo, Egypt.
- 2:45 Weed and Silt Control in Mosquito Ditches. **Jonas Steward**, East Volusia Mosquito Control District, Daytona Beach, Florida.

3:00

Session VIIIB

Growth and Nutrition of Aquatic Plants

Chair: Peter Lee

- Root System Characteristics in Sympatric Floating-Leaved Macrophytes, Nymphaea tetragona Georgi and Brasenia schreberi J.F. Gmel. **Hideobu Kunii**, Shimane University, Matsue, Japan.
- Growth and Allocation Patterns in a Developing Mat of Waterhyacinth (Eichhornia crassipes). **John D. Madsen**, U.S. Army Corps of Engineers, Lewisville, Texas.
- Growth Responses of Alligator Weed to Temperature and Photoperiod. **P.J.M. Sale** and **K.H. Bowmer**, Center for Irrigation and Freshwater Research, Griffith, Australia.
- Nutrient Composition of Two Emergent Aquatic Plants. **Anjana Dewanji** and Shyam Matai, Indian Statistical Institute, Calcutta, India.
- * Variation in Nutrient Limitation and Storage Capacity of Marine Algae Representing Different Growth Forms. **M.F. Pedersen**, University of Copenhagen, Copenhagen, Denmark.
- Qualitative and Quantitative Changes in Nitrogen During Sprouting of Hydrilla Turions. **Frederick J. Ryan** and Deborah L. Holmberg, U.S. Department of Agriculture, Agriculture Research Service, Davis, California.
- Macrophytes in Lowland Streams: Effects of Organic Pollution. **C.M.L. Mesters**, Utrecht University, Utrecht, The Netherlands.
- The Role of Macrophytes in Heavy Metal Circulation in Shallow Coastal Areas. **Maria Greger** and Lena Kautsky, Stockholm University, Stockholm, Sweden.

Afternoon Break

Session IX

3:30 - 5:00 Poster Session

- * Strategy Analysis of Euhydrophyte Communities in European Riverine Wetlands. **V.J. Abernethy** and **K.J. Murphy**, University of Glasgow, Glasgow, Scotland.

U.S. Army Corp of Engineers Environmental Resources Research and Assistance Programs. **Robert C. Gunkel**, U.S. Army Corps of Engineers, Vicksburg, Mississippi.

Evaluation of an Interstitial Water Sampler for Analysis of Nutrients in Containers Used for Culture of Hydrilla. **William G.H. Latham** and David L. Sutton, University of Florida, Fort Lauderdale, Florida.

Genetic Variation in the Freshwater Angiosperm Myriophyllum alterniflorum DC. **S.C. Maberly**, S.A. Harris and R.J. Abbott. University of St. Andrews, St. Andrews, Scotland.

- * The Ecology of the Exotic Aquatic Plant Trapa natans Including Growth Habits and Seed Production. **B.A. Methe**, R.J. Soracco, J.D. Madsen and C.W. Boylen, Rensselaer Polytechnic Institute, Troy, New York.

- * A Physiological Basis for the Distribution of Aquatic Plants in Florida. **M.J. Moon**, M.R. Rattray, J. Reiskind and G. Bowes, University of Florida, Gainesville, Florida.

- * Chemical Ecology of Potamogeton pectinatus L. **J. Sarosiek** and P. Kosiba, Wroclaw University, Wroclaw, Poland.

Aerobic Biofermentation and Vermicomposting of Harvested Aquatic Plants From Lakes. **John R. Shumann**, David L. Haselow and Orville C. Thompson, St. Johns River Water Management District, Palatka, Florida.

- * Internal CO₂ Transport and Photosynthesis in the Emergent Aquatic Macrophytes Scirpus lacustris and Cyperus papyrus. **Alon Singer** and Sven Beer, Tel Aviv University, Tel Aviv, Israel.

Assessing the Potential of Sediments for Supporting the Growth of Rooted, Submersed Aquatic Plants. **R. Michael Smart**, U.S. Army Corps of Engineers, Lewisville, Texas.

Applications of Simulation Procedures in Aquatic Plant Management - **R. Michael Steward**, U.S. Army Corps of Engineers, Lewisville, Texas.

Nitrogen Fixing Aquatic Plant Azolla sp. Hybrid as Biofertilizer for Rice Crop. **R. S. Sundaram** and S. Kannaiyan, Tamil Nadu University, Coimbatore, India.

Isoetid Population Demography Over a Disturbance Gradient - **Jozef Szmeja**, University of Gdansk, Gdansk, Poland.

The Effect of Sulphide and Ferrous Iron on the Growth of Potamogeton pectinatus L. **L.C. Van Wijck**, C.J. De Groot and P. Grillas, Station Biologique Tour du Valat, Arles, France.

- * pH-Associated Plasticity and Local Adaptation in Three Isoetid-Form Aquatic Plants. **Evan R. Weiher** and Charles W. Boylen, Rensselaer Polytechnic Institute, Troy, New York.

Chemical Composition of Submersed Aquatic Vegetation, Lake Okeechobee, Florida (1990). **Paul V. Zimba**, Margaret S. Hopson and Doug Colle, University of Florida, Gainesville, Florida.

6:30

Cocktail Hour

7:30

Symposium Dinner
Awards

Session XA

Mechanical Harvesting

Chair: Scott Painter

- 8:30 The Impact of Mechanical Harvesting on Quality of Wetland Vegetation: A Quantitative Approach. **Elly P.H. Best**, DLO-Centre for Agrobiological Research, Wageningen, The Netherlands.
- 8:45 Vegetation Zonation Along Watercourses: Their Mutual Relationships and Implications for Mechanical Control. **R. Pot**, Advisory Group on Vegetation Management, Wageningen, The Netherlands.
- 9:00 *Ipomoea carnea* (Convolvulaceae) - A Wetland Weed in the Pantanal of Mato Grosso, Brazil. **Rainer Haase** and Fernando Correa, Max-Planck-Institut für Limnologie, Plön, Germany.
- 9:15 Water Hyacinth Mechanical Harvesting - Lake Cidra, Puerto Rico Pilot Project. Gerald N. Smith and **Nancy S. Palmstrom**, Fugro-McClelland (East), Inc., Northborough, Massachusetts.
- 9:30 Development of Advanced Mechanical Harvesting Equipment. **Harlan M. Stein** and T. Amimoto, SR Group, Inc, Houston, Texas.
- 9:45 The Suction Harvesting of Eurasian Watermilfoil and its Effect on Surrounding Native Plant Communities. **C.W. Boylen**, R.T. Bombard, J.W. Sutherland and L.W. Eichler, Rensselaer Fresh Water Institute, Troy, New York.

10:00

Morning Break

Session XI

Closing General Session Chair: Randall Stocker

- 10:30 Has All This Research Helped Anyone? **William T. Haller** and A.M. Fox, University of Florida, Gainesville, Florida.
- 10:45 A Plant Manager's View Point. **Wayne Corbin** and David Girardin, St. Johns River Water Management District, Palatka, Florida.
- 11:00 Parting Shots. **Ken Langeland**, University of Florida, Gainesville, Florida.
- 11:15 Closing Remarks - Randall Stocker
- 11:30 Aquatic Plant Management Society Business Meeting
- 12:00 Aquatic Plant Management Society Board of Directors Luncheon
- 1:00 Aquatic Plant Management Society Board of Directors Meeting

Session XB

International Aquatic Weed Problems

Chair: Alison Fox

- Distribution of Hydrilla in China: Implications on Future Spread in North America. **Joe Balciunas** and Chen Ping Ping, U.S. Department of Agriculture, Agriculture Research Service, Townsville, Australia.
- The Infestation of Water Hyacinth in the Chao Phraya River Basin, **P. Benyasut** and S. Benyasut, Royal Irrigation Department, Nonthaburi, Thailand.
- Functioning of *Typha domingensis* (Pers) Kunth Stands in Cuba. **José Miguel Plasencia Fraga** and Jan Kvet, Science Academy of Cuba and Czechoslovak Academy of Sciences, Trebon, Czechoslovakia.
- Aquatic Plant Management in Relation to Irish Recreational Fisheries Development. **Joseph M. Caffrey**, Central Fisheries Board, Dublin, Ireland.
- Status of Water Hyacinth and Control in Nigeria. **O.A. Akinyemiju**, Obafemi Awolowo University, Ile-Ife, Nigeria.
- Aquatic Plants in Agricultural Canals in Yugoslavia. **Marija Arsenovic**, Institute for Plant Protection, Novi Sad, Yugoslavia.

PROPOSED CHANGES TO BYLAWS

Article XVIII of the Society's Bylaws requires that notice of proposed amendments be given to the Secretary/ Treasurer and transmitted by him to the membership 30 days prior to the Annual Meeting. The following proposed amendments were approved by the Board of Directors at the mid-winter annual Board Meeting. These proposed amendments have been given to the Secretary/Treasurer and are herein presented to the membership:

ARTICLE XIII COMMITTEES

PROPOSED CREATION OF THE SCHOLASTIC ENDOWMENT COMMITTEE

Proposed Wording:

19. Scholastic Endowment Committee. This committee shall be responsible for coordinating fund raising activities and managing funds for the Society Scholastic Endowment. The committee shall consist of not less than four (4) members, one of whom shall be the Chairman of the Student Affairs Committee.

If approved, this committee would be listed as committee #19 under Article XIII. With this amendment, the remaining two committee categories (Special Committees and Special Representatives) would then be re-numbered 20 and 21, respectively. Approval of this new committee would require modification to the Student Affairs Committee wording:

Existing Version:

7. Student Affairs Committee. This committee should consist of not fewer than three (3) members of the Society. The duties of this committee shall be to investigate and promote membership of students into the Society and make recommendation to the Board of Directors as to means of enhancing and encouraging student participation in the Society.

Proposed Version:

7. Student Affairs Committee. This committee should consist of not fewer than four (4) members of the Society, one of whom shall be the Chairman of the Scholastic Endowment Committee. The duties of this committee shall be to investigate and promote membership of students into the Society and make recommendation to the Board of Directors as to means of enhancing and encouraging student participation in the Society.

PROPOSED MODIFICATION TO ARCHIVES COMMITTEE

This proposed change involves altering the membership composition of the Archives Committee.

Existing Version:

9. Archives Committee. This committee shall consist of not less than 3 members (including the Secretary-Treasurer of the Society). The committee will be responsible for maintaining the security of important records of the Society. The committee will establish guidelines and procedures for placing items in the archives.

Proposed Version:

9. Archives Committee. This committee shall consist of an archivist, to be appointed by the president for a term of three (3) years, and the Secretary-Treasurer of the Society. The committee will be responsible for maintaining the security of important records of the Society. The committee will establish guidelines and procedures for placing items in the archives.

Justification For Change:

Now that the archives are established and functioning, there is no work remaining that can be conveniently handled by a committee in the traditional sense. The major work is to accumu-

late new documents as they appear, catalog them, and periodically forward them to The Center for Aquatic Plants at the University of Florida for filing and safekeeping. To do this, two people need to be involved; an archivist for cataloging and the Secretary-Treasurer to provide the documents. There needs to be some continuity in this committee so that the catalog and cataloging system are not constantly being passed on to someone new. It takes a bit of time and effort to get the system set up on a new computer and for a new archivist to learn the system, so a three year term is more practical than a one year term.

PROPOSED MODIFICATION TO REGIONAL CHAPTERS COMMITTEE

17. Regional Chapters Committee. This committee shall be responsible for promoting and forming regional chapters of the Society. It shall evaluate requests from groups wishing to affiliate with the Society as regional chapters. The committee shall be responsible for enhancing communications and coordination among the regional chapters and the Society. The committee shall consist of at least one representative of each of the regional chapters and include the Vice-President of the Society.

17. Regional Chapters Committee. This committee shall be responsible for promoting and forming regional chapters of the Society. It shall evaluate requests from groups wishing to affiliate with the Society as regional chapters. The committee shall be responsible for enhancing communications and coordination among the regional chapters and the Society. The committee shall consist of at least one representative of each of the regional chapters and include the Vice-President of the Society who shall be Chairman.

For additional information contact Michael Kane, Bylaws and Resolutions Committee Chair (904/392-7937)

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 management and 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\$200

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

AMOUNT OF REMITTANCE \$ _____ SIGNATURE OF APPLICANT _____

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

The Aquatic Plant Management Society, Inc.
P.O. Box 2695
Washington, DC 20013-2695