

Program

TWENTY - EIGHTH
ANNUAL MEETING

THE
AQUATIC PLANT
MANAGEMENT
SOCIETY, INC.



FAIRMONT HOTEL
New Orleans, Louisiana
July 10-13, 1988
Sunday Through Wednesday

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THE PROGRAM

TWENTY-EIGHTH ANNUAL MEETING OF THE AQUATIC PLANT MANAGEMENT SOCIETY, INC.

July 10-13, 1988

Fairmont Hotel
New Orleans, Louisiana, USA

SUNDAY, JULY 10, 1988

- 10:00 a.m. **COMMITTEE MEETINGS**
Bylaws and Resolutions Committee -
Orleans Room
Student Affairs Committee -
Directors Room
- 12:00 Noon **BOARD LUNCHEON**
Creole Room
- 1:00 p.m. **BOARD OF DIRECTORS MEETING**
Orleans Room
- 3:00 p.m.- **REGISTRATION**
6:00 p.m. Emerald Foyer
- 6:30 p.m.- **PRESIDENT'S RECEPTION**
7:30 p.m. Explorers Room
Exhibits on Display

MONDAY, JULY 11, 1988

8:00 a.m. - 5:00 p.m.
REGISTRATION
Emerald Foyer

9:00 a.m. - 5:00 p.m.
EXHIBITS ON DISPLAY
Explorers Room

SESSION I

8:30 a.m. - 4:45 p.m.
University Room

Presiding: Richard D. Comes, President

- 8:30 a.m. **CALL TO ORDER**
- 8:30 a.m. **INVOCATION:** G. Douglas Pullman
- 8:35 a.m. **WELCOME:** Virginia Van Sickle, Secretary,
Louisiana Department of Wildlife and Fisheries

- 8:45 a.m. **ANNOUNCEMENTS:** Richard Couch, Program Chairman
- 8:50 a.m. **APMS CHAPTER REPORTS:**
Florida APMS: Eddie Knight, President
South Carolina APMS: Tim Drake, President
Midsouth APMS: Leon Bates, President
Midwest APMS: Richard Hinterman, President
Western APMS: Fred Nibling, Immediate Past President
Canada: Scott Painter, Coordinator
- 9:00 a.m. **PRESIDENTIAL ADDRESS:** Richard D. Comes
- 9:15 a.m. **ANNUAL BUSINESS MEETING**
 Presiding: Richard Comes, President
- 10:00 a.m. **BREAK**
- 10:30 a.m. **KEYNOTE ADDRESS:**
 Ron Raschke, President
 North American Lake Management Society
- THE AQUATIC ECOSYSTEM:
 ECOLOGY AND MANAGEMENT**
 Presiding: John Barko
 USAE Waterways Experiment Station, Vicksburg, Mississippi
- 11:00 a.m. **LAKE/RESERVOIR ECOLOGY**
 Wayne Poppe, TVA, Chattanooga, Tennessee
- 11:45 a.m. **ADJOURN FOR LUNCH**
- LAKE/RESERVOIR MANAGEMENT**
- 1:20 p.m. **U.S. Army Corps of Engineers**
 Lynn Lamar, Washington, DC
- 1:40 p.m. **U.S. Bureau of Reclamation**
 Jim LaBounty, Denver, Colorado
- 2:00 p.m. **Tennessee Valley Authority**
 Herbert Jones, Knoxville, Tennessee
- 2:20 p.m. **Urban Lakes**
 Dan Burden, Baton Rouge, Louisiana
- 2:40 p.m. **A Private Lake**
 Dennis Bokemeier, Davis, Illinois
- 3:00 p.m. **BREAK**
- 3:20 **Europe/Egypt**
 Kevin Murphy, University of Glasgow, Scotland
- 3:40 p.m. **Switzerland**
 C.D.K. Cook, University of Zurich, Switzerland
- 4:00 p.m. **PANEL DISCUSSION:**
 Session 1 Speakers and Victor Bartnik, British Columbia, and S. Thamasara, Thailand
- 4:45 p.m. **ADJOURN**
- 5:00 p.m. **COMMITTEE MEETINGS**
Legislative Committee, Directors Room
Publications Committee, Chancellors Room
Necrology Committee, To Be Announced
Federal Aquatic Plant Management Working Group, To Be Announced

TUESDAY, JULY 12, 1988

Local Chapter President's Breakfast
6:45 - 8:15 a.m.
Directors Room
Sponsor: Chevron Chemical Company

REGISTRATION
 8:00 a.m. - 5:00 p.m.
 Emerald Foyer

EXHIBITS ON DISPLAY
 8:30 a.m. - 5:00 p.m.
 Explorers Room

SESSION II

CONTRIBUTED PAPERS
 Section A
 Wildcatter Room

Chairperson & Moderator: Leon Bates
 TVA, Muscle Shoals, Alabama

- 8:00 a.m. **Brief Facts Regarding *Mimosa pigra***
 S. Thamasara, Weed Control Research Branch,
 Royal Irrigation Department, Pakret, Nonthaburi,
 Thailand
- 8:15 a.m. **Management of Lakes for Wild Rice
 Productions in Canada**
 Peter F. Lee, Department of Biology, Lakehead
 University, Thunder Bay, Ontario, Canada
- 8:30 a.m. **Variation in Production Characteristics Among
 Ontario Wild Rice Populations: Implications for
 Lake Management and Plant Breeding**
 Rebecca L. Counts* & Peter F. Lee, Department
 of Biology, Lakehead University, Thunder Bay,
 Ontario, Canada
- 8:45 a.m. **Cultivation and Scarification in the
 Management of Lake-Grown Wild Rice (*Zizania
 aquatica* L.)**
 T. J. Keenan* & P.F. Lee, Department of Biology,
 Lakehead University, Thunder Bay, Ontario,
 Canada
- 9:00 a.m. **Factors Influencing Glyphosate Efficacy in
 Torpedograss (*Panicum repens* L.) Under Field
 Conditions**
 T. R. Willard*, W. T. Haller, K. Langeland, D. G.
 Shilling, & D. Thayer, Department of Agronomy,
 University of Florida, Gainesville
STUDENT CONTEST PAPER
- 9:15 a.m. **Validation of the Model "INSECT" Under
 Southeastern Texas Conditions**
 Michael Jay Grodowitz, USAE Waterways
 Experiment Station, P.O. Box 631, Vicksburg,
 Mississippi
- 9:30 a.m. **Impact of the Endangered Species Act on
 Pesticide Usage**
 Donald Schultz, US Fish and Wildlife Service,
 75 Spring Street SW, Atlanta, Georgia

- 9:45 a.m. **Effects of Solricin 135 on Water Quality, Phytoplankton, and Off-Flavor in Channel Catfish Ponds**
J.H. Scott*, D. R. Bayne, & C. E. Boyd,
Department of Fisheries & Allied Aquaculture,
Auburn University, Auburn, Alabama
STUDENT CONTEST PAPER
- 10:00 a.m. **BREAK**
- 10:15 a.m. **Recent Studies of the Buoyant Potential of Benthic Barriers**
G. Douglas Pullman, Cygnet Enterprises, Inc.,
P.O. Box 248, Linden, Michigan
- 10:30 a.m. **Comparison of Three Methods for the Nondestructive Estimation of Biomass in Three Aquatic Weeds**
Robert T. Pine*, Lars W.J. Anderson, & Silas O. Hung, U.S. Department of Agriculture, Botany & Animal Science Departments, University of California, Davis
- 10:45 a.m. **Are Present Chemical Control Methodologies Compatible with Existing Biocontrol Agents of Waterhyacinths?**
D. C. Pellessier, USAE Waterways Experiment Station, P.O. Box 631, Vicksburg, Mississippi
STUDENT CONTEST PAPER
- 11:00 a.m. **The Potential for Contamination of Shallow Near-Shore Aquifers by Aquatic Herbicides**
G. Douglas Pullman, Cygnet Enterprises, Inc., Linden, Michigan, and David P. Regalbuto, Midwest Water Resources, Inc., 320 W. Santee, Charlotte, Michigan
- 11:15 a.m. **Impact of Diquat on Non-Target Crop, Wetland, and Aquatic Plants**
W. T. Haller*, D. G. Shilling, T. R. Willard, A. Fox, Center for Aquatic Plants, University of Florida, Gainesville
- 11:30 a.m. **Fluidone and NMF Residue in Two Sonar Treated Ponds**
F. B. LaRoche, K. A. Langeland, & S. West, Center for Aquatic Plants, University of Florida, Gainesville
- 11:45 a.m. **ADJOURN FOR LUNCH**
- 8:30 a.m. **Effect of N, P, or K in the Culture Medium on the Biomass and the Nutrient Uptake and Storage by *Eichhornia crassipes***
K. R. Reddy & M. Agami*, Soil Science Department, University of Florida, Gainesville
- 8:45 a.m. **Do You Know Your *Lyngbya*?: Notes on the Distribution and Taxonomy of a Mat-Forming Macrocyanophyte**
Barbara Speziale & Lawrence Dyck, Department of Biological Sciences, Clemson University, Clemson, South Carolina
- 9:00 a.m. **Management of *Lyngbya* Infestations: Can Diquat be Delivered to Benthic Mats?**
Lawrence Dyck & Barbara Speziale, Department of Biological Sciences, Clemson University, Clemson, South Carolina
- 9:15 a.m. **Effect of Fluorescein Family Dyes on the Growth of the Filamentous Alga *Lyngbya majescula***
Kevin B. Johnson* & Dean Martin, Department of Chemistry, University of South Florida, Tampa
STUDENT CONTEST PAPER
- 9:30 a.m. **Photophysiological Responses of Bloom Forming Algae to Changes in Light Intensity: *Lyngbya* as a Model**
Glenn Turner* & Lawrence Dyck, Department of Biological Sciences, Clemson University, Clemson, South Carolina
STUDENT CONTEST PAPER
- 9:45 a.m. **Plant Growth Regulators as Aquatic Plant Management Tools**
Michael Netherland* & Carole Lembi, Department of Botany & Plant Pathology, Purdue University, West Lafayette, Indiana
STUDENT CONTEST PAPER
- 10:00 a.m. **BREAK**
- 10:15 a.m. **Use of a Fluorescent Dye to Predict Herbicide Dilution in Flowing Water**
Alison Fox* & W. T. Haller, Center for Aquatic Plants, University of Florida, Gainesville, and K. D. Getsinger, USAE Waterways Experiment Station, Vicksburg, Mississippi
- 10:30 a.m. **Photolysis of Fluidone in Aqueous Solution**
Mark Mossler*, D. G. Shilling, & W. T. Haller, University of Florida, Gainesville
STUDENT CONTEST PAPER
- 10:45 a.m. **2,4-D Concentration and Exposure Time Relationships for the Control of Eurasian Watermilfoil**
W. Reed Green, USAE Waterways Experiment Station, P.O. Box 631, Vicksburg, Mississippi
- 11:00 a.m. **Characterization of Allelochemicals in American Eelgrass (*Vallisneria spiralis*)**
Tai-Sheng Cheng* & Donald N. Riemer, Department of Soils & Crops, Cook College/Rutgers University, New Brunswick, New Jersey
STUDENT CONTEST PAPER

SESSION II

CONTRIBUTED PAPERS

Section B
Gold Room

Chairperson & Moderator: David Sutton
University of Florida, Fort Lauderdale

- 8:00 a.m. **Problem and Control of Aquatic Plants in Irrigation Systems in Thailand**
M. Siriworakul* and S. Thamasara, Weed Control Research Branch, Royal Irrigation Department, Pakret, Nonthaburi, Thailand
- 8:15 a.m. **Growth Characteristics and Carbohydrates in Waterhyacinth**
Kien Luu, USAE Waterways Experiment Station, Vicksburg, Mississippi

- 11:15 a.m. **Glyphosate Efficacy in Torpedograss (*Panicum repens* L.) as Influenced by the Interaction of Carrier pH and Calcium Content**
D. G. Shilling*, W. T. Haller, T. R. Willard, & M. A. Mossler, Department of Agronomy, University of Florida, Gainesville
- 11:30 a.m. **Predicting Effective Diquat Concentrations for the Control of Hydrilla**
Martine C. Duff* & John H. Rodgers, Jr., North Texas State University, P.O. Box 13078, Denton, Texas
STUDENT CONTEST PAPER
- 11:45 a.m. **ADJOURN FOR LUNCH**

SESSION III

INVITED* & CONTRIBUTED PAPERS

Section A
Wildcatter Room

WEED AND WATER RESOURCE MANAGEMENT UNDER OPERATIONAL CONDITIONS

Chairperson & Moderator: Bill Zattau
Operations Support Center, Jacksonville District,
Corps of Engineers, Jacksonville, Florida

- 1:15 p.m. **Aquatic Plant Management from a Large Program Perspective***
Michael Dupes, US Army Corps of Engineers, Jacksonville District, Jacksonville, Florida
- 1:30 p.m. **Aquatic Plant Management Operations from a Small Program Perspective***
Joe Zolczynski, Alabama Department of Conservation & Natural Resources, P.O. Box 245, Spanish Fort, Alabama
- 1:45 p.m. **An Update on the Corps Aquatic Plant Control in Florida***
Edward Knight, Natural Resources Project Office, P.O. Box 1317, Palatka, Florida
- 2:00 p.m. **The South Carolina Aquatic Plant Management Programs***
Steven de Kozlowski, South Carolina Water Resources Commission, 1201 Main Street, Suite 1100, Columbia, South Carolina
- 2:15 p.m. **Large-Scale Sonar Application at Lake Seminole, Florida***
Joe Kight, US Army Corps of Engineers, Lake Seminole Resource Management Office, Chattahoochee, Florida
- 2:30 p.m. **Mechanical Harvesting for Nutrient Removal**
C. E. Mericas*, P. T. Gremillion, & E. Terczak, International Science & Technology, 11260 Roger Bacon Drive, Suite 201, Reston, Virginia
- 2:45 p.m. **BREAK**
- 3:00 p.m. **New Tools for Mechanical Aquatic Plant Management***
Terry M. McNabb, Aquatics Unlimited, Inc., Kent, Washington

- 3:15 p.m. **New Biocontrol Agents for Submersed Aquatic Plants**
Alfred Cofrancesco, Jr. & Edwin Theriot, USAE Waterways Experiment Station, P.O. Box 631, Vicksburg, Mississippi
- 3:30 p.m. **Grass Carp in Western Irrigation Systems: Questions of Management and Sterility***
Randall Stocker, Imperial Irrigation District, Imperial, California
- 3:45 p.m. **An Evaluation of the "AMUR" Grass Carp Stocking Rate Model**
John Cassani & David Maloney, Lee County Hyacinth Control District, P.O. Box 06005, Fort Myers, Florida
- 4:00 p.m. **Environmental Impacts of Fluidrone Application in Lake Okeechobee, Florida**
K. A. Langeland & D. D. Thayer, Center for Aquatic Plants, University of Florida, Gainesville
- 4:15 p.m. **Lake Okeechobee: A Lesson in Maintenance Control**
Joseph Joyce & Kenneth Langeland, Center for Aquatic Plants, University of Florida, Gainesville
- 4:30 p.m. **The EPA Implementation of the Endangered Species Act under FIFRA***
Larry W. Turner, U.S. Environmental Protection Agency, Washington, DC
- 4:45 p.m. **ADJOURN**

SESSION III

INVITED* & CONTRIBUTED PAPERS

Section B
Gold Room

HYDRILLA

Presiding: Lars W.J. Anderson
USDA/ARS, University of California, Davis

- 1:15 p.m. **Natural History and Impacts of *Hydrilla verticillata****
Lars W. J. Anderson, U.S. Department of Agriculture, Botany Department, University of California, Davis
- 1:30 p.m. **Electrophoretic Evidence for Two Varieties of Monoecious *Hydrilla* in North Carolina***
Frederick J. Ryan, U.S. Department of Agriculture, Botany Department, University of California, Davis
- 1:45 p.m. **Karyotypes of *Hydrilla* Productions in the United States**
K. A. Langeland, Center for Aquatic Plants, University of Florida, Gainesville
- 2:00 p.m. **Autecological Characterization of Different Strains of *Hydrilla verticillata****
Wim Van Vierssen, Agricultural University, Wageningen, The Netherlands

- 2:15 p.m. **Competitive Interactions Between Monoecious Hydrilla and Sago Pondweed and Their Implications for Changes in Macrophyte Community Structure***
David F. Spencer, U.S. Department of Agriculture, Botany Department, University of California, Davis
- 2:30 p.m. **Competition Between *Hydrilla verticillata* and *Vallisneria americana* for Light, Sediment Nutrients, and Inorganic Carbon**
R. Michael Smart & John W. Barko; Environmental Laboratory; USAE Waterways Experiment Station; Vicksburg, Mississippi
- 2:45 p.m. **BREAK**
- 3:00 p.m. **Carbohydrate Partitioning in Hydrilla Biotypes**
George J. Pesacreta, Environmental Laboratory, USAE Waterways Experiment Station, Vicksburg, Mississippi
- 3:15 p.m. **The Presence in Leaf Tissue of the Major Tuber Proteins of Hydrilla**
Frederick J. Ryan, U.S. Department of Agriculture, Botany Department, University of California, Davis
- 3:30 p.m. **Herbicidal Metabolites as Indicators of Biological Control Efficacy of Microorganisms Against *Hydrilla verticillata***
Virginia J. Prange & R. Charudattan, Plant Pathology Department, University of Florida, Gainesville
- 3:45 p.m. **Influence of Substituted Phenols on the Growth of Hydrilla**
Barbara B. Martin* & Dean F. Martin, Department of Chemistry, University of South Florida, Tampa
- 4:00 p.m. **Current Status of the Hydrilla Eradication Program for Northern California**
Nate Dechoretz, California Department of Food & Agriculture, 1220 N Street, Sacramento
- 4:15 p.m. **Competition Interaction Between Monoecious Hydrilla and Vallisneria on Soils of Varying Fertility**
K. K. Steward, USDA Aquatic Plant Management Laboratory, Fort Lauderdale, Florida
- 4:30 p.m. **PANEL DISCUSSION – Hydrilla: Where do we go from here???**
- 5:00 p.m. **ADJOURN**

TUESDAY EVENING PROGRAM

July 12, 1988

“Fais do do”

7:00-10:00 p.m.

Cajun Food, Music, Dancers, etc.

Old New Orleans Ice House
Convention Center Area

(Beer, wine, and soft drinks included.
Cash bar for cocktails.)

*Meet in Lobby beginning at 6:30 p.m. for
short transport to Center.*

WEDNESDAY, JULY 13, 1988

SESSION IV

Emerald Room

**USE OF COMPUTERS IN AQUATIC PLANT
MANAGEMENT**

Presiding: John Rodgers
North Texas State University, Denton

- 9:00 a.m. **An Overview of Simulation Technology
Development in the APCR**
R. M. Stewart, USAE Waterways Experiment
Station, Vicksburg, Mississippi
- 9:15 a.m. **The Aquatic Plant Information Retrieval System:
An Aid in Aquatic Plant Management**
Joe Joyce, Center for Aquatic Plants, University of
Florida, Gainesville
- 9:30 a.m. **Computer Processing for Aerial Aquatic Plant
Surveys**
Terry McNabb, Aquatics Unlimited, Inc., Kent,
Washington
- 9:45 a.m. **"INSECT": A Computer-Aided Tool for
Simulation of Waterhyacinth and Its Biological
Control Agents**
R. M. Stewart, USAE Waterways Experiment
Station, Vicksburg, Mississippi, & Fred G. Howell,
Department of Biological Sciences, University
Southern Mississippi, Hattiesburg
- 10:00 a.m. **Herbicide Fate, Target Plant Species Effects,
and Population Response Computer
Simulations: An Integrated Approach**
Philip A. Clifford & John H. Rodgers, Jr., North
Texas State University, Denton
- 10:15 a.m. **DISCUSSION**
- 10:45 a.m. **BREAK**
- 11:00 a.m. **BUSINESS MEETING AND INSTALLATION OF
1988-89 OFFICERS**
President Richard Comes, Presiding
- 11:30 a.m. **ADJOURNMENT OF 28th ANNUAL MEETING**
- 12:00 noon **BOARD OF DIRECTORS LUNCHEON AND
MEETING**
Mayors Chamber

SPOUSES PROGRAM

SUNDAY, JULY 10, 1988

6:30 p.m.

PRESIDENT'S RECEPTION

Explorers Room

MONDAY, JULY 11, 1988

9:30 a.m. – 12:30 p.m.

WALKING TOUR of FRENCH QUARTER

Including the historic
Herman Grima House

Meet Tour Guide in Lobby at 9:30 a.m.

1:00 p.m.

LUNCHEON

Creole Room

TUESDAY, JULY 12, 1988

"Fais do do"

**THE AQUATIC PLANT
MANAGEMENT SOCIETY, INC.**

Post Office Box 16, Vicksburg, MS 39180

APPLICATION FOR MEMBERSHIP

There are three regular classes of membership available upon application made in accordance with the Charter. These classes are: (A) ACTIVE MEMBERSHIP (\$25.00); (B) STUDENT MEMBERSHIP (\$5.00); and SUSTAINING MEMBERSHIP (\$200.00).

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Spouse's Name _____

Home Address _____

City, State, Zip _____

Home Telephone _____

Present Title _____

Present Employer _____

Business Address _____

City, State, Zip _____

Business Telephone _____

Membership Class Desired _____

Amount of Remittance Herewith \$ _____

Signature of Applicant _____

Date _____

* Please indicate by asterisk which address you wish the Secretary-Treasurer's office to use.

(Detach and Return)

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**FUTURE MEETING SITES
OF
THE AQUATIC
PLANT MANAGEMENT
SOCIETY, INC.**

1989 - Phoenix, Arizona, U.S.A.
July 16-19

1990 - Mobile, Alabama, U.S.A.
July 15-18