

Program

TWENTY-FIFTH
ANNUAL MEETING

THE AQUATIC PLANT MANAGEMENT SOCIETY, INC.



HOTEL VANCOUVER
Vancouver, British Columbia, Canada
July 21-24, 1985
Sunday through Wednesday

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THE PROGRAM

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

July 21-24, 1985

Hotel Vancouver

Vancouver, B.C., Canada

SUNDAY, JULY 21, 1985

- 12:00 Noon **Board Luncheon**
Tweedsmuir Room
- 1:00 p.m. **Meeting of the Board of Directors**
Garibaldi Room
- 3:00 p.m. -
6:00 p.m. **Registration**
British Columbia Foyer
- 6:30 p.m. -
7:30 p.m. **President's Reception**
Vancouver Island Room
Exhibits on Display

MONDAY, JULY 22, 1985

8:00 A.M. - 5:00 P.M.

Registration - British Columbia Foyer

9:00 A.M. - 5:00 P.M.

Exhibits on Display - Vancouver Island Room

GENERAL SESSION I

British Room (All sessions)

Presiding: Max C. McCowen, President

- 8:30 a.m. **Call to Order**
- 8:35 a.m. **Invocation**
- 8:40 a.m. **Announcements** - Lars W. J. Anderson,
President-Elect and Program Chairman
- 8:45 a.m. **Presidential Address:** Max C. McCowen
- 9:00 a.m. **Keynote Address:** The Hon. F. C. Austin Pelton,
Minister of Environment for British Columbia

- 9:10 a.m. **APMS Chapter Reports**
 Western APMS, Randall Stocker, President
 Midwest APMS, Carole Lembi, President-Elect
 Midsouth APMS, Joe Zolczynski, President
 South Carolina APMS, John Inabinet, President
 Florida APMS, J. Clarke Hudson, President
 Canada (Plans), Scott Painter
- 9:45 a.m. **Recent Activities at the Center for Aquatic Weeds**
 Joe Joyce
- 10:00 a.m. **Status of *Hygrophila polysperma* in Florida**
 Vernon Vandiver
- 10:15 a.m. **Status of Monoecious *Hydrilla* in the U.S.**
 K. K. Steward and L.W.J. Anderson
- 10:30 a.m. **Status of 2, 4-D Label for Aquatic Uses**
 John E. Gallagher
- 11:00 a.m. **Special Topic Speaker:**
 DR. C. Den HARTOG,
 Laboratory for Aquatic Ecology
 Catholic University of Nijmegen
 The Netherlands
- ACID RAIN AND AQUATIC MACROPHYTES
- 11:30 a.m. **Annual Business Meeting**
 11:30 a.m. - 12:00 noon
 Presiding: Max C. McCowen, President
- 12:00 - 1:30 p.m. LUNCH

MONDAY, JULY 22, 1985

GENERAL SESSION II

Chairperson: Bill Haller

- 1:30 p.m. **A Strategy for Integrated Control of Waterhyacinth Using *Neochetina* and an Herbicide**
 Kim H. Haag, Entomology Department, University of Florida, Gainesville, FL
- 1:45 p.m. **Predictable Control of Waterhyacinth with Biocontrol Agents**
 Edwin A. Theriot and Bruce M. Sabol, USAE Waterways Experiment Station, Environmental Laboratory, P. O. Box 631, Vicksburg, MS
- 2:00 p.m. **Effect of Various Waterhyacinth Management Schedules on Organic Sedimentation Rates**
 Joseph C. Joyce, University of Florida, Center for Aquatic Weeds, 7922 NW 71st Street, Gainesville, FL
- 2:15 p.m. **Significance of Detritus Plant Tissue Decomposition in Aquatic Systems**
 K. R. Reddy, University of Florida, IFAS, P. O. Box 909, Sanford FL
- 2:30 p.m. **Influence of Temperature and Phosphate Supply on the Growth, Nutrition and Phosphorus Uptake of *Azolla* Species**
 Madeline Ames and D. William Rains
 Agronomy and Range Science, University of California, Davis, CA
 STUDENT CONTEST PAPER
- 2:45 p.m. **A Model for Predicting Total Phosphorous Concentration in Lakes with Aquatic Macrophytes**
 George J. Pesacreta, Zoology Dept., North Carolina State University, P. O. Box 7617, Raleigh, N.C.
 STUDENT CONTEST PAPER
- 3:00 p.m. - 3:15 p.m. BREAK
- 3:15 p.m. **Mechanical, Hydrodynamic and Aerodynamic Properties of Waterhyacinth Mats**
 Larry O. Bagnall and Royann J. Petrell, Agricultural Engineering Department and Center for Aquatic Weeds, University of Florida, Gainesville, FL
- 3:30 p.m. **Overview of the Use of Triploid Grass Carp (*Ctenopharyngodon idella*) as a Biocontrol for Macrophytes in Washington State**
 Gilbert B. Pauley, Gary L. Thomas, Scott Bonar, Karen Bowers and Amy Unthank, Washington Cooperative Fishery Research Unit, University of Washington, Seattle, WA
- 3:45 p.m. **Evaluation of Ploidy and Separation Techniques with the Grass Carp (*Ctenopharyngodon idella*), a Potential Biological Control for Aquatic Macrophytes in Washington State**
 Scott Bonar, Gary L. Thomas, and Gilbert B. Pauley, Washington Cooperative Fishery Research Unit, University of Washington, Seattle, WA
 STUDENT CONTEST PAPER
- 4:00 p.m. **Ecological Effects of Vegetation Control by Grass Carp in Lake Conroe**
 R. L. Noble, R. K. Betsill, and P. W. Bettoli, Department of Wildlife and Fisheries Sciences, Texas A & M University, 210 Nagle Hall, TAMU College Station, TX
- 4:15 p.m. **The Illinois Herbivorous Fish Stocking Simulation System (IHFS)**
 P. O. Tazik, M. J. Wiley, and S. T. Sobaski, Illinois Natural History Survey, Natural Resources Building, 607 E. Peabody Dr., Champaign, IL
- 4:30 p.m. **Triploid Grass Carp (*Ctenopharyngodon idella*) Feeding Rates and Species Preferences for Common Aquatic Macrophytes of Washington State Ponds**
 Karen L. Bowers, Gilbert B. Pauley, and Gary L. Thomas, Washington Cooperative Fishery Research Unit, University of Washington, Seattle, WA
 STUDENT CONTEST PAPER
- 4:45 p.m. **Use of Triploid Grass Carp for Aquatic Plant Management in Florida**
 Lowell R. Trent and C. L. Phillippy, Florida Game and Freshwater Fish Commission, P. O. Box 1903, Eustis, FL
- 5:00 p.m. **Federal Aquatic Plant Management Working Group Meeting**
 Garabaldi Room

TUESDAY, JULY 23, 1985

8:00 A.M. to 5:00 P.M.

**INTERNATIONAL SYMPOSIUM
ON WATERMILFOIL
(*Myriophyllum spicatum*) and RELATED
HALORAGACEAE SPECIES**

SESSION A: INVITED SPEAKERS

Chairperson: Lars W. J. Anderson

8:00 a.m. **Introduction**—Max McCowen

8:05 a.m. **Announcements**

8:10 a.m. **Recognition of Invited Speakers**

8:15 a.m. **PROFESSOR C.D.K. COOK,***

Botanical Gardens and Institute for Botany, University
of Zurich, Switzerland

**WORLDWIDE DISTRIBUTION AND
TAXONOMY OF *MYRIOPHYLLUM*
SPECIES**

8:45 a.m. **DR. SUSAN AIKEN,*** Research Scientist, National Herbarium, Museum of Natural Sciences, Ottawa, Canada

**NATURAL HISTORY AND TAXONOMY
OF PROBLEM *MYRIOPHYLLUM* SPECIES**

9:10 a.m. Richard W. Couch and Edward N. Nelson, Department of Natural Science, Oral Roberts University, Tulsa, OK

THE HISTORY OF THE ESTABLISHMENT OF *MYRIOPHYLLUM SPICATUM* AND *MYRIOPHYLLUM AQUATICUM* IN NORTH AMERICA

9:35 a.m. **DR. DAVID L. SUTTON,*** Professor, Agronomy Department, Research Center, University of Florida, Ft. Lauderdale, FL

**BIOLOGY AND ECOLOGY OF
*MYRIOPHYLLUM AQUATICUM***

10:00 a.m. **Break**

10:15 a.m. **DR. JOHN BARKO,*** Research Biologist, and R. Michael Smart, USAE Waterways Experiment Station, Environmental Laboratory, Vicksburg, MS

**SEDIMENT COMPOSITION: EFFECTS
ON GROWTH OF SUBMERSED
AQUATIC VEGETATION**

10:45 a.m. **DR. DAVID MITCHELL,*** Center for Irrigation Research, Griffith, New South Wales, Australia
***MYRIOPHYLLUM* IN AUSTRALIA**

11:15 a.m. **A. Leon Bates,** Tennessee Valley Authority, E & D Building, Muscle Shoals, AL
***MYRIOPHYLLUM* IN THE T.V.A. SYSTEM**

11:30 a.m. **DR. PETER R. NEWROTH,*** Manager, Littoral Resources Unit, Water Management Branch, Ministry of Environment, Victoria, B.C.

**A REVIEW OF EURASIAN
WATERMILFOIL IMPACTS AND
MANAGEMENT IN BRITISH COLUMBIA**

12:00 Noon to 1:30 p.m. **RECESS FOR LUNCH**
Luncheon for Invited Speakers and Student Contestants
Garibaldi Room

* INVITED SPEAKERS

SESSION B: CONTRIBUTED PAPERS

Chairperson: Vernon Vandiver

DISTRIBUTION AND ECOLOGY

1:30 p.m. **HISTORY OF THE SPREAD OF EURASIAN WATERMILFOIL THROUGH THE OKANOGAN AND COLUMBIA RIVER SYSTEMS (1978-1984)**
Robert M. Rawson, U. S. Army Corps of Engineers, Seattle District, P.O. Box C-3755, Seattle WA

1:45 p.m. **BOTTOM TILLAGE TREATMENTS FOR EURASIAN WATERMILFOIL CONTROL**
M. D. Maxnuk, Biologist, Littoral Resources Unit, Water Management Branch Ministry of Environment, #3 4320 29th St., Vernon, B.C.

2:00 p.m. ***MYRIOPHYLLUM* IN BRITISH COLUMBIA**
Adolf Ceska and Oldriska Ceska, Botany Division, B. C. Provincial Museum, Victoria, B. C. and Biology Department, University of Victoria, Victoria, B. C.

2:15 p.m. **FACTORS AFFECTING THE DISTRIBUTION OF *MYRIOPHYLLUM* IN BRITISH COLUMBIA**
Patrick D. Warrington, Water Quality Unit, Water Management Branch, Ministry of Environment, Victoria, B.C.

2:30 p.m. **NUTRIENT LIMITATION OF *MYRIOPHYLLUM SPICATUM* IN SITU**
Robin Anderson and Jacob Kalff, Department of Biology, McGill University, 1205 Ave. Dr. Penfield, Montreal, Quebec, H3A1B1, Canada

2:45 p.m. **Break**

- 3:00 p.m. **SHORT TERM EFFECTS OF HARVESTING MILFOIL**
D. S. Painter, and J. I. Waltho, Environment Canada,
Aquatic Ecology Division, P. O. Box 5050, Burlington,
Ontario
- 3:15 p.m. **LABORATORY INVESTIGATIONS ON ULTRA-
SONIC CONTROL OF EURASIAN WATERMILFOIL**
Roger J. Soar, Lamda Technology, 1150 Woodstock
Avenue, Victoria, B.C.
- 3:30 p.m. **FATE AND IMPACT OF 2, 4-D USED FOR
MILFOIL CONTROL**
E. Nagy, D. S. Painter, and B. F. Scott, Environment
Canada, Environmental Contaminants Division, P. O.
Box 5050, Burlington, Ontario
- 3:45 p.m. **COMMUNITY AND GOVERNMENT COOPERA-
TION IN CONTROL OF EURASIAN WATERMIL-
FOIL IN CULTUS LAKE, B.C.**
Robert L. Truelson, Biologist, Littoral Resources Unit,
Ministry of Environment, Victoria, B.C.
- 4:00 p.m. **MILFOIL AND THE MEDIA: AN INTERACTIVE
ANALYSIS**
Philip Dearden, Department of Geography, University
of Victoria, Victoria, B.C.
- 4:15 p.m. **Adjourn**
- 5:30 p.m.
and
6:15 p.m. **Bus to Salmon BBQ (Meet in Hotel Lobby)**
- 7:00-9:30 p.m. **Salmon BBQ and Student Paper Awards**

WEDNESDAY, JULY 24, 1985

MYRIOPHYLLUM SYMPOSIUM CONTINUED SESSION C: CONTRIBUTED PAPERS

Chairperson: David Spencer

- 8:30 a.m. **DESSICATION TOLERANCE OF MYRIOPHYLLUM,
HYDRILLA, and EGERIA**
B. Dwain Vance, North Texas State University, Depart-
ment of Biological Sciences, Denton, Texas
- 8:45 a.m. **MANAGEMENT OF MYRIOPHYLLUM SPICATUM
USING ENDOTHALL: THE PAT MAYSE LAKE
EXPERIENCE**
John H. Roberts, Jr., Phil A. Clifford, Kevin H. Reinert
and Mark L. Hinman, Institute of Applied Sciences and
Department of Biological Sciences, North Texas State
University, P. O. Box 13078, Denton, Texas
- 9:00 a.m. **CONTROL AND MANAGEMENT OF EURASIAN
WATERMILFOIL IN THE PEND OREILLE RIVER,
WASHINGTON**
Harry L. Gibbons, Jr. and Maribeth V. Gibbons,
Kramer, Chin, & Mayo, Inc., 1917 First Avenue, Seattle,
Washington 98101, and Water, 9515 Windsong Loop N.E.,
Bainbridge Is., WA
- 9:15 a.m. **THE ECOLOGICAL STATUS AND MANAGEMENT
OF MYRIOPHYLLUM SPICATUM L. (WATERMIL-
FOIL) IN THE FINGER LAKES OF NEW YORK**
Gary L. Miller, Environmental Studies Program, Uni-
versity of North Carolina, Asheville, NC
- 9:30 a.m. - 10:00 a.m. **Panel Discussion on Research Needs and
Management of Myriophyllum Species**
- 10:00 a.m. **BREAK**

TUESDAY EVENING

July 23, 1985

SALMON BARBECUE 7:00 P. M.

University of British Columbia
Museum of Anthropology

(Meet in Hotel lobby for bus trip
to BBQ at 5:30 and 6:15 P.M.)

GENERAL SESSION III

Chairperson: Steve Klaine

- 10:15 a.m. **Gas and Ion Permeability of Benthic Barriers**
G. Douglas Pullman, The DOW Gardens, 1018 West Main Street, Midland, MI
- 10:30 a.m. **Operational Hydrothol 191 Application in Potable Water Systems**
Wynn Winkyaw, Salt River Project, P. O. Box 1580, Phoenix, AZ
- 10:45 a.m. **An Update on the Corps' Aquatic Plant Control in Florida**
Edward D. Knight, Natural Resources Project Office, U. S. Army Corps of Engineers, P. O. Box 1317, Palatka, FL
- 11:00 a.m. **An Evaluation of Hydroacoustics as a Tool for Measuring Abundance of Aquatic Macrophytes**
David A. Marino, G. L. Thomas, R. E. Thorne, and G. B. Pauley, Washington Cooperative Fishery Research Unit, University of Washington, Seattle, WA
- 11:15 a.m. **Evaluation of Landsat for Aquatic Plant Surveys**
Larry E. Nall, Florida Department of Natural Resources, 3900 Commonwealth Boulevard, Tallahassee, FL
- 11:30 a.m. **Aquatic Weed Control in Flowing Water**
William Haller, Center for Aquatic Weeds, University of Florida, Gainesville, FL
- 11:45 a.m. - 1:00 p.m. LUNCH

GENERAL SESSION IV

Chairperson: Randall Stocker

- 1:00 p.m. **Use of a Multiple Diffusion Unit to Study the Effects of Allelopathic Agents on Hydrilla**
Barbara B. Martin, Dean F. Martin, and Mark Sabo, Chemical and Environmental Management Services (CHEMS) Center, Department of Chemistry, University of South Florida, Tampa, FL
- 1:15 p.m. **Recent Studies in the Management of Florida Red Tide**
Y. Sakamoto, J. J. Krzanowski, Richard F. Lockey, and Dean F. Martin, Chemical and Environmental Management Services (CHEMS) Center, Department of Chemistry, University of South Florida, Tampa, FL
- 1:30 p.m. **Effect of Waterhyacinth Control Operations on Bulrush (*Scirpus validus*)**
Dan Thayer, Center for Aquatic Weeds, University of Florida, Gainesville, FL
- 1:45 p.m. **Luxury Consumption of Primary Nutrients and Their Relationship to Biomass Activity in the Waterhyacinth**
Jim Cobb, Center for Aquatic Weeds, University of Florida, Gainesville, FL
- 2:00 p.m. **Control of Tuber Formation in *Hydrilla verticillata***
Stephen J. Klaine, Memphis State University, Department of Biology, Memphis, TN

- 2:15 p.m. **Influence of Photoperiod on *Potamogeton nodosus*, *P. pectinatus*, and *Hydrilla verticillata***
David F. Spencer and Lars W. J. Anderson, USDA Aquatic Weed Research Laboratory, Botany Department, University of California, Davis, CA
- 2:30 p.m. **Observations on Monoecious Hydrilla Plants Grown in California**
Richard R. Yeo, USDA Aquatic Weed Research Laboratory, Botany Department, University of California, Davis, CA
- 2:45 p.m. **Influence of Temperature, Light Intensity, and Competition on Growth of Monoecious and Dioecious *Hydrilla verticillata* (L.f.) Royle Biotypes**
Madeline D. Ames, Lars W. J. Anderson, and David F. Spencer, USDA Aquatic Weed Research Laboratory, Botany Department, University of California, Davis, CA
- 3:00 p.m. **Sonar Report - Efficacy and Label Status**
David P. Tarver, Elanco (Eli Lilly) 2416 McWest St., Tallahassee, FL
- 3:15 p.m. **Review of the Effects of Endothall on Mammalian and Aquatic Ecosystems**
Bernalyn McGaughey, Pennwalt Corporation, P. O. Box 1027, Puyallup, WA
- 3:30 p.m. **Aquatic Weed Control with Aquashade: A Case History**
William L. Going and Richard B. Purdue, President, Clear Lakes, Inc. and Supervisor, Town of Indian Lake, NY, Box 447, Wallkill, NY
- 3:45 p.m. **Response of Waterhyacinth to Exogenously Supplied Gibberellic Acid (GA3)**
Yoko Oki and K. R. Reddy, Institute of Agriculture & Biological Sciences, Okayama University, Kurashiki, Japan and Central Florida Research and Education Center, University of Florida, Sanford, FL
- 4:00 p.m. **Final Business Meeting**
Installation of Officers for 1985-86
- 4:30 p.m. - 5:30 p.m. **Monoecious *Hydrilla* Workshop - Discussion of Current Research**
Garibaldi Room

SPOUSES' PROGRAM

SUNDAY, JULY 21, 1985

6:30 P.M. – 7:30 P.M.
President's Reception
Vancouver Island Room

MONDAY, JULY 22, 1985

12:00 Noon
Luncheon
Garibaldi Room

TUESDAY, JULY 23, 1985

7:00 P.M.
Salmon B B Q

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

**1986 – (Hotel to be announced)
Florida, U.S.A.
July 13-16**

**1987 – Hyatt Regency Savannah
Savannah, Georgia, U.S.A.
July 12-15**

**1988 – Fairmont Hotel
New Orleans, Louisiana, U.S.A.
July 10-13**

1989 – To be determined

**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 COMMERCIAL 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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