

# ***PROGRAM***

**THIRTY-EIGHTH  
ANNUAL MEETING**

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



**CROWNE PLAZA HOTEL  
MEMPHIS, TENNESSEE  
JULY 12-15, 1998**

## APMS Sustaining Members

**Applied Aquatic Management, Inc.**  
Eagle Lake, Florida

**Applied Biochemists, Inc.**  
Milwaukee, Wisconsin

**Aquarius Systems**  
North Prairie, Wisconsin

**Aquatics Unlimited**  
Martinez, California

**Brewer International**  
Vero Beach, Florida

**Chemical Containers, Inc.**  
Lake Wales, Florida

**Cygnat Enterprises, Inc.**  
Flint, Michigan

**Dow Agrosciences**  
Indianapolis, Indiana

**Elf Atochem**  
Exton, Pennsylvania

**Griffin Corporation**  
Valdosta, Georgia

**Helena Chemical Co.**  
Port Orange, Florida

**Menzi USA Sales, Inc.**  
Lakeland, Florida

**Monsanto Agricultural Co.**  
St. Louis, Missouri

**Nufarm Americas, Inc.**  
St. Joseph, Missouri

**Professional Lake Management**  
Alto, Michigan

**Resource Management, Inc.**  
Tumwater, Washington

**SePRO Corporation**  
Carmel, Indiana

**Terra**  
Ft. Myers, Florida

**UAP/UHS**  
Tampa, Florida

**Zeneca Professional Products**  
Wilmington, Delaware

## BOARD OF DIRECTORS 1997-98

### OFFICERS

**ALISON M. FOX**  
PRESIDENT  
300 NEWLL HALL  
P. O. BOX 110500  
GAINESVILLE, FL 32611

**KURT D. GETSINGER**  
IMMEDIATE PAST PRESIDENT  
U.S. ARMY CORPS OF ENGINEERS  
WATERWAYS EXPERIMENT STATION  
3909 HALLS FERRY ROAD  
VICKSBURG, MS 39180

**DAVID F. SPENCER**  
PRESIDENT-ELECT  
USDA-ARS AQUATIC WEED CONTROL  
ROBBINS HALL, UC DAVIS  
DAVIS, CA 95616

**J. LEWIS DECELL**  
VICE PRESIDENT  
JLD CONSULTING  
P. O. BOX 821924  
VICKSBURG, MS 39182-1924

**DONALD W. DOGGETT**  
TREASURER  
P. O. BOX 1477  
LEHIGH, FL 33970

**WENDY ANDREW**  
SECRETARY  
10616 BAY LAKE ROAD  
GROVELAND, FL 34736

**JOHN D. MADSEN**  
EDITOR  
U.S. ARMY CORPS OF ENGINEERS  
WATERWAYS EXPERIMENT STATION  
3909 HALLS FERRY ROAD  
VICKSBURG, MS 39180

### DIRECTORS

**JOYCE JOHNSON,**  
TEXAS PARKS & WILDLIFE FED. AID  
COORDINATOR  
4200 SMITH SCHOOL ROAD  
AUSTIN, TX 78744

**DAVID TARVER**  
SePRO  
1499 MOURNING DOVE ROAD  
TALLAHASSEE, FL 32312

**STRATFORD KAY**  
NC STATE UNIVERSITY-CROP SCIENCE  
P. O. BOX 7620  
NCSU  
RALEIGH, NC 27695

**KEN MANUEL**  
DUKE POWER COMPANY  
APPLIED SCIENCES CENTER  
13339 HAGERS FERRY ROAD  
HUNTERVILLE, NC 28078

**WILLIAM T. HALLER**  
CENTER FOR AQUATIC PLANTS  
7922 NW 71ST STREET  
GAINESVILLE, FL 32653

**SCOTT JORGENSEN**  
AQUATIC TECHNOLOGIES, INC.  
3421 JAMES PHILLIPS DRIVE  
OKEMOS, MI 48864

## SUNDAY, JULY 12, 1998

- 8:30 am-3:00 pm APMS Board of Directors Meeting  
*St. Louis Room*
- 2:00-5:00 pm Exhibitor Display Set Up  
*Heritage Ballroom Foyer*
- 3:00-6:00 pm Registration  
*Heritage Ballroom Foyer*
- 7:00-9:00 pm PRESIDENT'S RECEPTION  
All Delegates Invited  
*Heritage Ballroom III & IV*

## MONDAY, JULY 13, 1998

Trolley Passes & Charters Sponsored by American Cyanamid

- 8:00 am-5:00 pm Registration - *Heritage Ballroom Foyer*
- 8:00 am-5:00 pm Exhibits - *Heritage Ballroom Foyer*
- 8:00 am-5:00 pm Posters - *Heritage Ballroom I*
- 8:00 am-5:00 pm Presenters' Slide Viewing, *Memphis Room*
- 10:00 am-2:00pm Partners/Spouses' Tour of Graceland and  
Luncheon, Sponsored by Applied  
Biochemists

### SESSION I

*Heritage Ballroom II, III, & IV*  
Challenges for the Next Century

Presiding: **Alison Fox**, President APMS  
University of Florida-IFAS  
Gainesville, Florida

8:15 am Call to order

- 8:20 am Announcements: **David Spencer**,  
Program Chair  
USDA-ARS, Davis, California
- 8:30 am Presidential Address: **Alison Fox**
- 8:45 am APMS Regional Chapter Reports:  
Western Texas South Carolina  
MidWest MidSouth Nile Basin  
Florida
- 9:30 am Wetlands Conservation Programs of Ducks  
Unlimited. Dr. Bruce Batt, Chief Biologist,  
Ducks Unlimited, Memphis, TN
- 10:00 am **BREAK**
- 10:15 am A Message to Our Public: Why Aquatic Herbicides  
Affect Aquatic Plants and Not Us. **Carole Lembi**,  
Purdue University, West Lafayette, IN
- 10:45 am ARS Weed Science: Strengthening Partnerships  
for the Next Century. **Ernest Delfosse**, USDA-  
ARS, Washington D. C.
- 11:15 am **ANNUAL APMS BUSINESS MEETING**
- 11:45 am **LUNCH**
- 11:45 am-12:45 pm Aquatic Ecosystem Restoration  
Foundation Lunch and Board of Directors  
Meeting, Pyramid Room

### SESSION II

*Heritage Ballroom II, III, & IV*  
Advances in Chemical Control Technology

Moderator: **Kurt Getsinger**, WES, Vicksburg, MS

1:00 pm AERF Research and Education Update.  
Kurt Getsinger, WES, Vicksburg, MS

1:15 pm Renovate - A Potential New Herbicide for the Selective Control of Certain Aquatic Plants. **Steve Cockreham**, SePRO Corporation, Carmel, IN

1:30 pm Review of Aquatic Environmental Fate of Triclopyr and Its Major Metabolites. **B. A. Houtman**, Dow AgroSciences, Indianapolis, IN, **K. D. Getsinger**, WES, Vicksburg, MS, **D. G. Petty**, NDR Research, **D. R. Foster** and **B. S. Rutherford**, Dow AgroSciences, Indianapolis, IN

1:45 pm Endothall: New Formulations and New Uses. **Gerald Adrian**, Elf Atochem North America, Philadelphia, PA

2:00 pm Clearigate Research and Operational Experience. **Jim Schmidt**, Applied Biochemists, Milwaukee, WI

2:15 pm 2,4-D Registration and Label Update. **William Mahlburg**, Nufarm Americas, Inc., St. Joseph, MO.

2:30 pm FasTEST Case Studies - What Are We Learning About Renovate and Sonar? **Alicia G. Staddon**, SePRO Corporation, Carmel, IN

2:45 pm Selective Stem Treatments with Rodeo for Control of Brazilian Peppertree. **Dennis Williamson**, Monsanto Company, Raleigh, NC

3:00 pm **BREAK**

3:15 pm An Immunochemical Analytical Method for Endothall, the Active Ingredient in Aquathol K and Hydrothol 191 Aquatic Herbicides. **Janice Sharp**, **Timothy Formella**, **John Toth**, Elf Atochem North America, Inc. Philadelphia, PA, **Dale Onisk**, **Yi Zhou**, **Fouad Sayeg**, and **James Stave**, Strategic Diagnostics Inc., Newark, DE

3:30 pm Aquatic Dissipation Modeling of Endothal. **Janice Sharp**, **Chris Davis**, **Gerald Adrian**, Elf Atochem North America, Inc., Philadelphia, PA, **Ron Biever**, Springborne Laboratories, Inc., Wareham, MA, and **Piyush Singh**, **Amy Ritter**, **W. Martin Williams**, **Richard Frelander**, Waterborne Environmental, Inc., Leesburg, VA

3:45 pm Reward: Its Not the Same Old Diquat. **David Ross**, Zeneca Professional Products, Wilmington, DE

4:00 pm A Review of Fall Applications for Selective Control of Eurasian Watermilfoil. **Tyler Koschnick**, SePRO Corporation, Carmel, IN

4:15 pm Selective Management of Hydrilla Using Sonar. **David P. Tarver**, SePRO Corporation, Tallahassee, FL

4:30 pm The Bioalgalicidal Potential of Fresh Cut Alfalfa and Reed Canary Grass on Several Algal Species. (Student Paper) **Joseph Marencik** and **Carole Lembi**, West Lafayette, IN

4:45 pm Potential Use of Cattail (*Typha domingensis*) and Its Allelochemicals in the Biological Control of Salvinia (*Salvinia minima*). (Student Paper) **Maria Gallardo** and **Dean Martin**, University of South Florida, Tampa, FL

5:00 pm Growth of Bog Rush (*Juncus megacephalus*). (Student Paper) **Yassin Al-Sodany** and **David Sutton**, University of Florida, Fort Lauderdale, FL

5:15 pm **ADJOURNMENT**

6:30-8:30 pm **RECEPTION** Sponsored by SePro Corporation, River Terrace Yacht Club

## TUESDAY, JULY 14, 1998

Trolley Passes & Charters Sponsored by Monsanto

6:30-8:00 am APMS Regional Chapter Presidents' Breakfast Sponsored by Zeneca Professional Products, Pyramid Room

8:00 am-5:00 pm Registration - Heritage Ballroom Foyer

8:00 am-5:00 pm Exhibits - Heritage Ballroom Foyer

8:00 am-5:00 pm Posters - Heritage Ballroom I

8:00 am-5:00 pm Presenters' Slide Viewing, Memphis Room

### SESSION III

*Heritage Ballroom II, III, & IV*

#### NATIVE INSECTS AND EURASIAN WATERMILFOIL -- INTERACTIONS

- Moderator: **John Madsen**, WES, Vicksburg, MS
- 8:15 am Introductory Remarks. John Madsen, WES, Vicksburg, MS
- 8:30 am Review of Results from Studies on *Euhrychiopsis lecontei* Undertaken in Vermont and Massachusetts 1989-1998. **Sallie Sheldon**, Kent State University, Kent, OH
- 8:45 am The Weevil-Watermilfoil Interaction at Three Spatial Scales: What We Know and What We Need to Know. **Rob Creed**, Appalachian State University, Boone, NC
- 9:00 am Implications of Life Cycle Timing in *Acentria ephemerella* and *Euhrychiopsis lecontei* for the Biological Control of Eurasian Watermilfoil. **Robert Johnson**, Cornell University, Ithaca, NY
- 9:15 am *Euhrychiopsis lecontei*, Distribution and Factors Influencing Its Abundance in Wisconsin Lakes with Emphasis on Its Use as a Biological Control for Eurasian Watermilfoil (*Myriophyllum spicatum*). (Student Paper). **Laura Jester**, **M. A. Bozek**, University of Wisconsin, Stevens Point, WI, **D. R. Helsel**, Wisconsin Department of Natural Resources, Milwaukee, WI, and **S.P. Sheldon**, Kent State University, Kent, OH.
- 9:30 am Temporal and Spatial Changes in Milfoil Distribution and Biomass Associated with Weevils in Fish Lake, WI. **Richard Lillie**, Wisconsin Department of Natural Resources, Madison, WI.
- 9:45 am Laboratory Studies on Milfoil Weevil Host Preference, Performance, and Plant Damage, and Observations on Milfoil Declines in Minnesota. **Raymond Newman**, University of Minnesota, St. Paul, MN.
- 10:00 am **BREAK**
- 10:15 am Distribution of the Watermilfoil Weevil *Euhrychiopsis lecontei* in Washington State. (Student Paper). **Mariana Tamayo**, **Christian Grue**, University of Washington, Seattle, WA, and **Kathy Hamel**, Washington Department of Ecology, Olympia, WA

- 10:30 am Factors to Consider When Using Endemic Biological Control Organisms to Manage Exotic Plants. **Al Cofrancesco**, WES, Vicksburg, MS.
- 10:45 am Panel Discussion: State Regulatory and Management Issues. **Holly Crosson**, Vermont DEC, Waterbury, VT, **Frank Koshere**, Wisconsin DNR, Milwaukee, WI, **Chip Welling**, Minnesota DNR, St. Paul, MN, **Kathy Hamel**, Washington DOE, Olympia, WA, **Marty Hilovsky**, EnviroScience, Cayahoga Falls, OH
- 11:30 am Concluding Remarks. **John Madsen**, WES, Vicksburg, MS
- 11:45 am **LUNCH**
- 11:45 am-12:45 pm Federal Aquatic Herbicide Working Group Meeting and Lunch, *New Orleans Room*

### SESSION IV

Sponsored by the U. S. Army Corps of Engineers  
*Heritage Ballroom II, III, & IV*

#### AQUATIC PLANT CONTROL RESEARCH PROGRAM (APCRP)

- Moderator: **Robert Gunkel, Jr.**, WES, Vicksburg, MS
- 1:00 pm An Overview of the Aquatic Plant Control Research Program. **John Barko** and **Robert Gunkel, Jr.** WES, Vicksburg, MS
- 1:20 pm An Overview of Ecological Assessment Technology Area. **John Madsen**, WES, Vicksburg, MS
- 1:40 pm An Overview of Biological Control Technology Area. **Alfred Cofrancesco**, WES, Vicksburg, MS
- 2:00 pm An Overview of Chemical Control Technology Area. **Kurt Getsinger**, WES, Vicksburg, MS
- 2:20 pm An Overview of the Management Strategies and Applications Technology Area. **John Barko** and **Robert Gunkel, Jr.**, WES, Vicksburg, MS
- 2:40 pm **BREAK**

## POSTER SESSION

Sponsored by the U. S. Army Corps of Engineers

*Heritage Ballroom I*

3:00-4:30 pm

High-Temperature Effects on Growth and Propagule Formation in Hydrilla Biotypes (WU# 33029). **Dwilette McFarland** and **John Barko**. WES, Vicksburg, MS

Techniques for Establishing Native Aquatic Plants (WU# 33084). **R. Michael Smart** and **Gary Dick**. WES, Lewisville Aquatic Ecosystem Research Facility (LAERF) Lewisville, TX, University of North Texas, Lewisville, TX

Ecological Effects of Exotic and Native Aquatic Plants (WU# 33186). **R. Michael Smart**, WES, LAERF, Lewisville, TX, **Gary Dick**, University of North Texas, LAERF, **Robert Doyle**, WES, LAERF, Lewisville, TX, **John Madsen**, WES, Vicksburg, MS, **David Honnell**, AsCI Corporation, LAERF, Lewisville, TX and **Joe Snow** LAERF, Lewisville, TX.

Vegetative Spread of Hydrilla Colonies (WU# 33188). **John Madsen**, WES, Vicksburg, MS and **Dian Smith**. LAERF, Lewisville, TX

Macrophyte Influences on Sediment Resuspension in Shallow Aquatic Systems (WU# 33128). **William James**, WES, Eau Galle Aquatic Ecology Laboratory (EGAEL), Spring Valley, WI, **John Barko**, WES, Vicksburg, MS, and **Harry L. Eakin**. WES, EGAEL, Spring Valley, WI

Macrophyte Influences on Hydrodynamics in Aquatic Systems (WU# 33201). **William James**, WES, EGAEL, Spring Valley, WI, **John Barko**, WES, Vicksburg, MS, and **Harry Eakin**, WES, Spring Valley, WI

Insect Biological Control Agents (WU# 33028). **Alfred Cofrancesco**, WES, Vicksburg, MS

Plant Pathogen Biocontrol Research on Hydrilla and Eurasian Watermilfoil (WU# 32863). **Judy Shearer**, WES, Vicksburg, MS

Naturalized Aquatic Insects Impacting Eurasian Watermilfoil (WU# 33189). **Alfred Cofrancesco**, WES, Vicksburg, MS

Effects of Biocontrol Agents on the Competitive Interactions Between Nuisance Exotics and Desirable Native Aquatic Plants (WU# 33117). **Michael Grodowitz**, WES, Vicksburg, MS, **Robert Doyle**, and **R. Michael Smart**, WES, LAERF, Lewisville, TX

Population Management of Triploid Grass Carp (WU# 33200). **James Kirk**, WES, Vicksburg, MS

Selective Use of Herbicides (WU# 32841). **John Skogerboe**, WES, LAERF, Lewisville, TX, **Kurt Getsinger**, WES, Vicksburg, MS, **R. Michael Smart**, LAERF, Lewisville, TX, **Mike Netherland**, WES, Vicksburg, MS, and **Gary Dick**, University of North Texas, Lewisville, TX

Herbicide Delivery Systems: Evaluation of Sonar SRP Formulation (WU# 32437). **Michael Netherland**, WES, Vicksburg, MS and **David Honnell**, AsCI Corporation, Lewisville, TX

Evaluation of Water Temperature Effects on Herbicide Efficacy (WU# 33187). **Michael Netherland**, WES, Vicksburg, MS, **Chetta Owens**, AsCI Corporation, Lewisville, TX, **John Skogerboe**, WES, LAERF, Lewisville, TX, and **John Madsen**, WES, Vicksburg, MS,

Impacts of Herbicide Use on Threatened and Endangered Plant Species (WU# 33199). **Linda Nelson** and **Michael Netherland**, WES, Vicksburg, MS

Integrated Control: Pond Evaluation of Mt, Fluridone, and Copper Combinations for Control of Hydrilla (WU# 32953). **Michael Netherland** and **Judy Shearer**, WES, Vicksburg, MS

Response of Fishes to Changes in Plant Complexity and Distribution (WU# 32944). **K. Jack Killgore**, WES, Vicksburg, MS

Measurement Systems for Rapid Detection and Characterization of Submersed Aquatic Vegetation (WU# 33118). **Bruce Sabol**, WES, Vicksburg, MS

Field Evaluation of Quantitative Aquatic Plant Assessment Techniques (WU# 33127). **R. Michael Stewart** and **John Madsen**, WES, Vicksburg, MS

Methods for Determining and Mapping the Probability of Aquatic Plant Colonization (WU# 33119). **Rose Kress**, **Jerrell Ballard, Jr.** and **Bruce Sabol**, WES, Vicksburg, MS

Estimating Whole Lake Submersed Macrophyte Abundance: Comparison of Approaches and Required Sample Sizes. **Kerry Holmberg**, **Raymond Newman**, and **John Foley**, University of Minnesota, St. Paul, MN

Using Videotaped Transects to Estimate Submersed Plant Abundance in Fall River, California. **D. Spencer** and **G. Ksander**. USDA-ARS, Davis, CA

Seasonal Variation in C, N, and Total Phenolic Acid Content for Eurasian Watermilfoil. D. Spencer and G. Ksander, USDA-ARS, Davis, CA

4:30 pm ADJOURNMENT

4:30 - 6:00 pm Civil Works R & D Program Review for the APCRP. Corps of Engineers Representatives Only

6:00-10:00 pm APMS Banquet and Awards Ceremony, Memphis Showboat – Dixieland Jazz Music, Bar Sponsored by Elf Atochem North America Bahamas Cruise “Raffle” Sponsored by Cygnet Enterprises, Inc.

### WEDNESDAY, JULY 15, 1998

8:00 am-12:00 pm Presenters' Slide Viewing, Memphis Room

#### SESSION V AQUATIC PLANT MANAGEMENT

Moderator: Mark Sytsma, Portland State University

8:15 am Evaluation of Four Herbicides for Management of Water Hyacinth and American Frogbit. John Madsen, Chetta Owens, and Kurt Getsinger, WES, Vicksburg, MS, AsCI Corporation, Lewisville, TX

8:30 am Efficacy of Clearigat and Reward, Alone and in Combination, on Free-Floating Plants. Stratford Kay, North Carolina State University, Raleigh, NC

8:45 am Residual Effects of Herbicides in Treated Water Hyacinth Used as Mulch. Randall Stocker and William Haller, University of Florida, Gainesville, FL

9:00 am Drawdowns to Control Hydrilla: The Lake Murray Experience. Steven de Kozlowski and Cindy Aulbach-Smith, South Carolina Department of Natural Resources, Columbia, SC.

9:15 am Overview of Aquatic Plant Management in Washington State. Kathy Hamel, Washington Department of Ecology, Olympia, Washington.

9:30 am Growth of Vallisneria americana on Three Hydrosols from Lake Gaston. Steve Hoyle, Paul Kurilla, and Stratford Kay, North Carolina State University, Raleigh, NC.

9:45 am Fusarium sp. as a Potential Biocontrol Agent for Egeria densa and Egeria najas in Brazil. G. F. Nachtigal, R. A. Pitelli, and N. Gimenes F. University of the State of Sao Paulo, Jaboticabal, SP, Brazil.

10:00 am BREAK

10:15 am Aquatic Vegetation of the Rio Parana, Brazil: A Functional Assessment. K. J. Murphy, S. M. Thomaz, and L. M. Bini. University of Glasgow, Glasgow, Scotland, Universidade Estadual de Maringa, Maringa, Brazil, Universidade Federal de Goias, Goiania, Brazil.

10:30 am Can Egeria Be Eradicated? Answer: Yes, But Is It Worth It? Lars Anderson, USDA-ARS, Davis, CA

10:45 am Spartina Management in the Northwest. Terry McNabb, Resource Management, Inc. Seattle, WA

11:00 am Remote Sensing and Mapping Application in Aquatic Plant Management. Terry McNabb, Resource Management Inc., Tumwater, WA

11:15 am The Algicide Tolerance of Filamentous Algae. Carole Lembi, Purdue University, West Lafayette, IN

11:30 am FINAL BUSINESS MEETING AND INSTALLATION OF 1998-99 OFFICERS, President Alison M. Fox, Presiding

12:15 pm ADJOURNMENT

1:00 pm APMS Board of Directors Meeting Pyramid Room

MEETING SPONSORS

AMERICAN CYANAMID

APPLIED AQUATIC MANAGEMENT, INC.

APPLIED BIOCHEMISTS

AQUARIUS SYSTEMS

AQUATIC TECHNOLOGIES, INC.

AQUATICS UNLIMITED

BREWER INTERNATIONAL

CYGNET ENTERPRISES, INC.

DOW AGROSCIENCES

ECOSCIENCE

ELF ATOCHEM

GRIFFIN CORPORATION

HELENA CHEMICAL

MIDSOUTH A.P.M.S.

MONSANTO

RESOURCE MANAGEMENT, INC.

SEPRO CORPORATION

TERRA

UNITED HORTICULTURAL SUPPLY

U. S. ARMY CORPS OF ENGINEERS

ZENECA PROFESSIONAL PRODUCTS