



Aquatic Plant News

A Newsletter of The Aquatic Plant Management Society, Inc.
P.O. Box 821265, Vicksburg, MS 39182-1265
LeeAnn Glomski, Editor

Issue 106

June 2014

Savannah, Georgia—Site of our 54th Annual Meeting



The 54th Annual Meeting of the Aquatic Plant Management Society will be held July 13-16, 2014 at the Hilton Savannah DeSoto in Savannah, Georgia. Standing 15 stories in Savannah's Historic District, overlooking Madison Square, historic mansions, and oaks draped in Spanish moss, the Hilton Savannah DeSoto is a timeless sparkle on the Savannah skyline. The downtown hotel is steps from Savannah's treasured landmarks, museums, theaters, parks, and incredible dining and shopping. Walk to exciting attractions like River Street, City Market, Forsyth Park, Historic Savannah Theater, Savannah Civic Center and Savannah College of Art & Design.

Due to the unexpected high demand for rooms at the Hilton not seen in recent years, the conference room block is nearly full. Please call the Hilton directly at **(877) 280-0751** to make a reservation. When making your reservations by phone, be sure to mention that you are part of the Aquatic Plant Management Society. The Hilton DeSoto requires that all reservations be guaranteed with a major credit card or a deposit. Cancellations must be made 72 hours prior to arrival or you will be charged one night's room and tax. Check in time is 4:00 p.m. and checkout time is 11:00 p.m. If you choose to depart earlier than your reserved departure date, the hotel will charge one night room and tax. **Please refer to the APMS website (apms.org) for various options for securing rooms.**

APMS has also partnered with the Country Inn and Suites at 320 Montgomery Street, approximately a seven minute walk from the Hilton DeSoto. Please

54th Annual Meeting continued...

call them directly at **(912) 921-5300** to make a reservation. The room rate is \$129 per night plus applicable taxes plus a \$12 per day garage parking fee. Complimentary hot buffet breakfast and wireless internet service are included in your rate. Again, please let the hotel know you are part of the Aquatic Plant Management Society. This rate is good only through **June 23, 2014**, so make your reservations now.

The Society will continue to use a 2½ day format for the meeting. The technical program will begin Monday morning and end around noon on Wednesday. Our meeting will kick off with the President's Reception on Sunday evening. As the official welcoming event of the meeting, this reception is an excellent time to reacquaint with old friends, meet new friends, and just relax. Heavy hors d'oeuvres and your favorite beverages will be served. The Monday evening Poster Session and Reception presents a great opportunity to examine posters and exhibits while enjoying great food and beverage. **The APMS Reception and Awards Banquet on Tuesday evening will be another memorable event where we will recognize those who have served and contributed to our Society, welcome new officers and directors, and present student paper and other awards. This year, a two hour cruise on the Savannah River Queen will be our venue for the awards banquet.** These special events are free to all registered delegates, students, and guests. Non-registered guests may purchase individual tickets for these events at the registration desk.

This year, our spouses, children, and guests will be treated to a trolley tour of Savannah. You will be picked up at the Hotel at 10:00 a.m. and will return by 3:00 p.m. The experience begins with a trolley ride through historic Savannah, home to stately Southern architecture and distinctive park-like squares and a visit to the Juliette Gordon Low Birthplace, the founder of the Girl Scouts. We will also visit The Cathedral of St. John the Baptist which is compared to some of the most beautiful churches in Europe. We will continue with lunch at the Johnny Harris Restaurant and Barbecue Sauce Company. Established in 1924, Johnny Harris Restaurant continues to be one of the largest and most popular full service restaurants in the city. After lunch, we will travel back roads with beautiful marsh views, have great picture opportunities in front of a mile long oak lined drive of a former plantation, see elegant homes on "The Bluff" overlooking the waterway, and then end for refreshments and cookie sampling at Byrd Cookie Company, a Savannah favorite since 1924.

The meeting registration fees are \$275.00 for a delegate and \$130.00 for a guest (spouse, partner, child over 12 years of age) if received by **June 23, 2014**. After this date, registration fees at the door will be \$330.00 for a delegate and \$155.00 for a guest. The meeting registration fee for a student competing in the student paper contest (oral or poster) is waived and the registration fee for a student not competing is \$75.00. Delegate and student registration includes all technical sessions, President's Reception, refreshment breaks, Poster Reception, and Awards Banquet. Guest registration includes President's Reception, refreshment breaks, Guest Tour, Poster Reception, and Awards Banquet. Non-registered guests may purchase individual tickets for these events.

The Hilton Savannah DeSoto is only a 20 minute drive from the Savannah / Hilton Head International Airport and is easily accessible by taxi, limousine, rental car or commercial shuttle service.

54th Annual Meeting continued...

Getting around the city is very convenient. Free shuttle service and the free River Street Streetcar are available along with the downtown Trolley. Trolley tours that take you around the Historical District are also available.

This is guaranteed to be an extraordinary meeting, so plan to attend and bring the family! Please help us in planning for the 54th Annual Meeting by submitting the **Meeting Registration Form** enclosed in this newsletter by **June 23, 2014**.

2014 APMS Officer and Director Nominees

The following nominees have been selected by the Nominating Committee to serve on the APMS Board of Directors. Active members of the Society will vote for new Officers and Directors during the Annual Business Meeting to be held on Monday, July 14, 2014 in Savannah, GA.

Vice-President — John Madsen

Dr. John D. Madsen is a research biologist with the USDA-ARS Invasive Weed Research Unit in Davis, CA. Dr. Madsen has been involved in research on the ecology and management of invasive aquatic plants around the country for over 25 years. Dr. Madsen has a Bachelor of Science degree from Wheaton College, Wheaton, IL, and Master of Science and Doctor of Philosophy degrees in Botany from the University of Wisconsin-Madison.

Before joining the USDA-ARS, he was an Associate Professor of Research and Extension in the Geosystems Research Institute and the Department of Plant and Soil Sciences, Mississippi State University from 2004-2014. Dr. Madsen was also an Assistant Professor of Biology at Minnesota State University-Mankato from 2000-2003, and a Research Biologist with the US Army Engineer Research and Development Center from 1991 to 2000.

Dr. Madsen has been a member of the Aquatic Plant Management Society since 1990. He has served as an Associate Editor of the Journal of Aquatic Plant Management (1996-1997, 2011-current), Editor of the Journal of Aquatic Plant Management and Board Member (1997-2002), and a Director and Board Member (2010-2013). He has also served as the Chair of the Student Affairs Committee (1996-1997), the Legislative Affairs Committee (2010-2013), and the Membership Committee (2010-2013).

He has been a Member of the Board of Directors for both the Texas Aquatic Plant Management Society (1993-1994) and the MidSouth Aquatic Plant Management Society (2005-2007). He has served as Chair of the Scholarship Committee for both TAPMS (1993-1996) and MSAPMS (2005-2014). He was also President-Elect (2007-2008), President (2008-2009), and Immediate Past President (2009-2010) of the MSAPMS.

He has also served as an Associate Editor for the journal of Invasive Plant Science and Management

2014 APMS Officer and Director Nominees Continued

and the Wetlands journal. He was Secretary of the Weed Science Society (2012-2014), Plant Work Group Liaison and Board of Director Member of the Council for Agricultural Science and Technology (2011-2014), APMS Representative to CAST (2008-2011), Chair of the Weed Science Society of America Federal and Noxious Weed Committee (2008-2011), and a Board of Directors Member for the Texas River and Reservoir Management Society (1994-1996).

Director — Ryan Wersal

I am a native of Minnesota where I received my Bachelor and Master of Science degrees in Biology. I moved to Mississippi in 2004 and received my PhD in Weed Science in 2010 where my research focused on the biology and ecology of aquatic plants, management techniques for invasive species, and survey and monitoring techniques at large scales. I am currently the Aquatic Plant Scientist for Applied Biochemists (A Lonza Business) in Alpharetta, GA. In my current role, I coordinate the interaction between the business and technology personnel. I oversee the research and development projects with respect to aquatic herbicides and algaecides. I conduct basic research under both controlled and field conditions to support our current products, verify efficacy of new products, and to develop the most effective use pattern for our herbicides and algaecides to promote product stewardship.

Director—Dick Pinagel

Mr. Pinagel has been working in the aquatic plant management business since 1988. Mr. Pinagel is owner and President of Aqua-Weed Control Inc. since 1995. Aqua-Weed Control is one of the oldest and one of the largest full service aquatic management firms operating in Michigan.

Dick Pinagel holds a Bachelors of Science Degree in Business Management from Ferris State University. Dick is licensed by the Michigan Department of Agriculture to apply aquatic pesticides in Michigan waters.

Mr. Pinagel and Aqua-Weed Control are members of the following professional organizations:

- Michigan Aquatic Managers Association (*currently serving as President*)
- Midwest Aquatic Managers Association (*Past President*)
- North American Lake Management Society
- Aquatic Plant Management Society
- Aquatic Ecosystem Restoration Foundation

Also:

- Michigan Agro-Business Association
- Michigan Chamber of Commerce
- Michigan Better Business Bureau

Dick regularly attends meetings and training sessions sponsored by the Michigan Department of Environmental Quality, the Michigan Department of Agriculture and various trade organizations throughout the year.

2014 APMS Officer and Director Nominees Continued

Treasurer — Jeremy Slade

Mr. Jeremy Slade graduated from The University of Mississippi with a Bachelor of Science degree in Biology in 2002, and Mississippi State University (MSU) with a Master's of Science in Wildlife and Fisheries Science in 2005. After graduating from MSU, Jeremy worked as a research associate in the Department of Wildlife and Fisheries at MSU and research scientist contracted by the US Army Engineer Research and Development Center, US Army Corps of Engineers from 2005 to 2008. His duties in this position were to evaluate aquatic herbicide efficacy on nuisance aquatic weeds in lab and mesocosm studies. In 2008, Jeremy moved to Gainesville, Florida, where he worked at the Center for Aquatic and Invasive Plants, University of Florida evaluating large-scale herbicide applications for controlling hydrilla that were performed by the Florida Fish and Wildlife Conservation Commission until the end of 2010.

In January 2011, Jeremy joined United Phosphorus, Inc. as the Aquatics Accounts Manager for the southeast portion of the US covering the Gulf States. Responsibilities include supporting and providing technical assistance on UPI's aquatic products to insure proper use resulting in responsible and effective aquatic plant management programs. Jeremy has been involved in all facets of aquatic plant management in all regions of the US.

Current Affiliations: Aquatic Plant Management Society (APMS), FAPMS, SFAPMS, MSAPMS – Board of Director's, TAPMS; Aquatic Ecosystem Restoration Foundation (AERF); Florida Lake Management Society.

Scholastic Endowment — Silent Auction Fund Raiser

Please consider donating an item to this year's Scholastic Endowment Silent Auction which will take place at our annual meeting in Savannah. The Silent Auction has successfully raised funds providing much needed financial support for student scholarships, presentations and poster awards. All donors confirming with John Gardner will be recognized on meeting sponsorship signs at the Silent Auction tables.

Thank you for your support!

John Gardner, Scholastic Endowment Chair

Phone: (800) 432-4302

E-mail: jwg@vertexwaterfeatures.com

54th Annual Meeting of the APMS Registration Form

Delegate/Student Information

Last Name: _____ First Name: _____ M.I.: _____
Affiliation: _____
Address: _____
City: _____ State/Province: _____ Zip/Postal Code: _____
Country: _____ E-mail Address: _____
Phone: _____ Fax: _____

Registration (Includes Refreshment Breaks, President's Reception, Poster Reception, and Banquet)

	Early (by June 23, 2014)	On-site		
<input type="checkbox"/> Delegate Registration	\$ 275.00	\$ 330.00	\$ _____	
<input type="checkbox"/> Student Paper Competition Registration	\$ 0.00	\$ 0.00	\$ <u>0.00</u>	
<input type="checkbox"/> Regular Student Registration (non-competing)	\$ 75.00	\$ 75.00	\$ _____	
<input type="checkbox"/> Guest Registration (spouse, partner, child over 12 years-of-age) (also includes the Guest Tour)				
Name(s): _____	\$ 130.00	\$ 155.00	\$ _____	
<input type="checkbox"/> One-day Meeting Registration (includes refreshment breaks on day of attendance only)				
Day of Attendance: _____	\$ 100.00	\$ 100.00	\$ _____	
Individual Special Event Tickets for Non-registered Guests				
<input type="checkbox"/> President's Reception	Name(s): _____	\$ 40.00	\$ 50.00	\$ _____
<input type="checkbox"/> Guest Tour	Name(s): _____	\$ 40.00	\$ 50.00	\$ _____
<input type="checkbox"/> Poster Reception	Name(s): _____	\$ 40.00	\$ 50.00	\$ _____
<input type="checkbox"/> Banquet	Name(s): _____	\$ 55.00	\$ 65.00	\$ _____

Membership Dues (2014)

- Individual \$ 75.00 \$ _____
 Student \$ 20.00 \$ _____
 Sustaining \$500.00 \$ _____

Total Payment Amount: \$ _____

Payment Method (Check One)

- Check (Make Payable to APMS, Inc.) Credit Card: Visa Master Card American Express

Credit Card Number: _____ Expiration Date: _____

Name as it Appears on Card: _____ Signature of Card Holder: _____

Send Completed Form and Payment to:
The Aquatic Plant Management Society, Inc.
P.O. Box 821265
Vicksburg, MS 39182-1265
Fax: 601-634-5502

Early registration accepted if form and payment received by June 23, 2014. Registration questions, please phone: 601-634-2990 or E-mail: Sherry.L.Whitaker@usace.army.mil

Cancellation/Refund Policy: Registration fees are fully refundable prior to June 30, 2014, less a \$25.00 processing and handling fee. No refund of any fees will be issued if cancellation of participation is received after June 30, 2014. Notice of cancellation must be received by APMS via mail, fax, or e-mail. **Phone cancellations will not be accepted.**

Pre-final Agenda

Sunday, July 13

Sunday's Agenda-at-a-Glance

7:30 am	-	5:00 pm	APMS Board of Directors Meeting (<i>Harborview Room</i>)
12:00 pm	-	5:00 pm	Exhibits Setup (<i>Oglethorpe Ballroom</i>)
12:00 pm	-	5:00 pm	Poster Setup (<i>Oglethorpe Ballroom</i>)
1:00 pm	-	5:00 pm	Registration (<i>Pre-function area between Oglethorpe and Madison Ballrooms</i>)
3:00 pm	-	5:00 pm	MAPMS Board of Directors Meeting (<i>Lafayette Room</i>)
7:00 pm	-	9:00 pm	President's Reception (<i>Oglethorpe Ballroom</i>)

Monday, July 14

Monday's Agenda-at-a-Glance

7:00 am	-	8:00 am	Continental Breakfast (<i>Oglethorpe Ballroom</i>)
7:00 am	-	5:00 pm	Exhibits Open (<i>Oglethorpe Ballroom</i>)
7:00 am	-	5:00 pm	Posters Open (<i>Oglethorpe Ballroom</i>)
7:30 am	-	5:00 pm	Registration (<i>Pre-function area between Oglethorpe and Madison Ballrooms</i>)
7:55 am	-	12:00 pm	Session I – Special Avian Vacuolar Myelinopathy Opening Session (<i>Madison Ballroom</i>)
10:00 am	-	3:00 pm	Guest Tour – Pre-registered Guests meet in Hotel Lobby at 9:45 am
10:20 am	-	10:40 am	Refreshment Break (<i>Oglethorpe Ballroom</i>)
12:00 pm	-	1:30 pm	Lunch on your own
12:00 pm	-	1:30 pm	APMS Student Affairs Luncheon (<i>Monterey Room - 2nd Floor</i>)
12:00 pm	-	1:30 pm	Aquatic Ecosystem Restoration Foundation Meeting (<i>Telefair Room - 2nd Floor</i>)
1:30 pm	-	4:20 pm	Session II – General Session and Student Presentations (<i>Madison Ballroom</i>)
2:50 pm	-	3:20 pm	Refreshment Break (<i>Oglethorpe Ballroom</i>)
4:20 pm	-	5:00 pm	APMS Annual Business Meeting (<i>Madison Ballroom</i>)
6:00 pm	-	7:30 pm	Poster Session and Reception (<i>Oglethorpe Ballroom</i>)
9:00 pm	-	10:30 pm	Historic Haunts Tour – Guests meet in Hotel Lobby at 8:45 pm – Limit 40

Session I – Special Avian Vacuolar Myelinopathy Opening Session

7:55 am - 12:00 pm

Madison Ballroom

Moderator: Dr. Cody Gray - APMS President Elect, Program Committee Chair

United Phosphorus, Incorporated, Peyton, CO

7:55 am	Presidential Address Michael Netherland <i>APMS President, Gainesville, FL</i>
8:00 am	Welcome to Savannah - Special Guest Speaker (TBD)
8:20 am	Avian Vacuolar Myelinopathy: Hydrilla, Toxic Cyanobacteria, and Management Efforts to Control Disease in Southeastern Reservoirs Susan B. Wilde¹ , Rebecca Haynie ² , Brigitte Haram ¹ , and Bradley A. Bartelme ¹ ¹ <i>University of Georgia, Warnell School of Forestry and Natural Resources, Athens, GA</i> ² <i>SePRO Corporation, Carmel, IN</i>
8:40 am	Investigating <i>Hydrilla verticillata</i> and Avian Vacuolar Myelinopathy Disease on a Southeastern Reservoir (Student Presentation) Brigitte Haram and Susan B. Wilde <i>University of Georgia, Warnell School of Forestry and Natural Resources, Athens, GA</i>

- 9:00 am **Impacts of Avian Vacuolar Myelinopathy on Bald Eagles in Georgia**
Jim C. Ozier
Georgia Department of Natural Resources, Wildlife Resources Division, Forsyth, GA
- 9:20 am **Investigating Stakeholder Perception of Aquatic Plant Management on a Large Southeastern Reservoir (Student Presentation)**
Kevin L. Fouts and Susan B. Wilde
University of Georgia, Warnell School of Forestry and Natural Resources, Athens, GA
- General Session and Student Presentations**
- 9:40 am **Maintenance Control of *Hydrilla verticillata* in Florida's State Managed Waters with Aquathol**
Jeremy G. Slade¹ and Michael D. Netherland²
¹*United Phosphorus, Incorporated, Gainesville, FL*
²*U.S. Army Corps of Engineers, Engineer Research and Development Center, Gainesville, FL*
- 10:00 am **Effect of Substrate Carbon on Topramezone Phytotoxicity to St. Augustinegrass (Student Presentation)**
Carl J. Della Torre III¹, William T. Haller², and Lyn A. Gettys¹
¹*University of Florida, Institute of Food and Agricultural Sciences, Ft. Lauderdale Research and Education Center, Davie, FL*
²*University of Florida, Institute of Food and Agricultural Sciences, Center for Aquatic and Invasive Plants, Gainesville, FL*
- 10:20 am **Refreshment Break (Oglethorpe Ballroom)**
- 10:40 am **The Turion Ecology of *Stratiotes aloides* (Student Presentation)**
Nicholas A. Weissflog¹ and Eric Sager²
¹*Trent University, Ecological Restoration, Peterborough, Ontario, Canada*
²*Fleming College, Ecological Restoration, Lindsay, Ontario, Canada*
- 11:00 am **New Aquatic Invasive Species Management: The Effect of Treatment Type and Application Timing on *Stratiotes aloides* in Ontario (Student Presentation)**
Robert A. Canning¹ and Eric Sager²
¹*Trent University, Environmental and Life Sciences, Peterborough, Ontario, Canada*
²*Fleming College, Ecological Restoration, Lindsay, Ontario, Canada*
- 11:20 am **Aquatic Invasive Plant Management: Using Modeling to Predict Future Invasions and Prioritize Existing Infestations (Student Presentation)**
Elizabeth A. Edgerton¹, Michael P. Masser¹, William Grant¹, Allen Knutson², and Lucas Gregory³
¹*Texas A&M University, Department of Wildlife and Fisheries Sciences, College Station, TX*
²*Texas A&M University, Department of Entomology, College Station, TX*
³*Texas Water Resources Institute, College Station, TX*
- 11:40 am **Field Research of Early-Season Whole Lake Herbicide Strategies for Control of Hybrid Eurasian Water Milfoil**
Eddie J. Heath¹, Tim Hoyman¹, Michelle Nault², and John Skogerboe³
¹*Onterra, LLC, De Pere, WI*
²*Wisconsin Department of Natural Resources, Madison, WI*
³*U.S. Army Corps of Engineers, Engineer Research and Development Center, Madison, WI*
- 12:00 pm **Lunch on your own**

Session II – General Session and Student Presentations

1:30 pm - 4:20 pm

Madison Ballroom

Moderator: Dr. Vernon Vandiver, Jr. - APMS Board of Directors

Professor Emeritus, University of Florida, Gainesville, FL

- 1:30 pm **Hydrilla Biological Control: Optimizing the Hydrilla Midge Tip Miner (Student Presentation)**
Julie A. Baniszewski, Emma N. Weeks, and James P. Cuda
University of Florida, Department of Entomology, Gainesville, FL
- 1:50 pm **Linking Plant Biology and Management Information to Improve Control of Hydrilla**
Michael D. Netherland¹ and Dean Jones²
¹*APMS President, Gainesville, FL*
²*University of Florida, Lake Alfred, FL*
- 2:10 pm **Attempted Revegetation in Two Piedmont Reservoirs: Establishment Success and Response of Fish and Macroinvertebrates (Student Presentation)**
Justin J. Nawrocki
North Carolina State University, Department of Crop Science, Raleigh, NC
- 2:30 pm **Alien Invasive Aquatic Weeds in Botswana - Historical Perspective and their Successful Control**
Chandrasekara N. Kurugundla
Water Affairs, Maun, Botswana
- 2:50 pm **Refreshment Break (Oglethorpe Ballroom)**
- 3:20 pm **Potential for Herbicide Resistance Evolution in Hybrid Watermilfoil (Student Presentation)**
Lindsey-Ann L. Schulte and Ryan A. Thum
Grand Valley State University, Robert B. Annis Water Resources Institute, Muskegon, MI
- 3:40 pm **Managing Eurasian Watermilfoil in the Lower Clark Fork River System, Montana**
John D. Madsen¹, Kurt D. Getsinger², Gray Turnage³
¹*U. S. Department of Agriculture, Agricultural Research Service, Exotic and Invasive Weed Research Unit, Davis, CA*
²*U.S. Army Corps of Engineers, Engineer Research and Development Center, Vicksburg, MS*
³*Mississippi State University, Geosystems Research Institute, Mississippi State, MS*
- 4:00 pm **Benefits of Incorporating Genetic Identification of Watermilfoils into Aquatic Vegetation Mapping (Student Presentation)**
Syndell Parks¹ and Ryan A. Thum²
¹*Grand Valley State University, Department of Biology, Muskegon, MI*
²*Grand Valley State University, Robert B. Annis Water Resources Institute, Muskegon, MI*
- 4:20 pm **APMS Annual Business Meeting (Madison Ballroom)**
- 6:00 pm **Poster Session and Reception (Oglethorpe Ballroom)**
- 9:00 pm **Historic Haunts Tour - Meet in Hotel Lobby at 8:45 pm - Limit 40**

Poster Session

6:00 pm - 7:30 pm

Oglethorpe Ballroom

Assessment of Six Indicators for Algal Cell Viability (Student Presentation)

Alyssa J. Calomeni and John H. Rodgers

Clemson University, Department Wildlife and Fisheries Biology, Clemson, SC

Three Year Summary of Flumioxazin Applications to Delavan Lake, WI

Jason Fausey

Nufarm Americas, Fremont, OH

Sago Pondweed (*Stuckenia pectinatus*) and Horned Pondweed (*Zannichellia palustris*) Control with Endothall Formulations in Greenhouse Flowing Water Mesocosms (Student Presentation)

Kallie C. Kessler and Scott J. Nissen

Colorado State University, Department of Bioagricultural Sciences and Pest Management, Fort Collins, CO

Alligator Weed [*Alternanthera philoxeroides* (Mart.) Griseb.] is Spreading in Kashmir Himalayas (Student Presentation)

Ather Masoodi and Fareed A. Khan

Department of Botany, Aligarh Muslim University, Aligarh, India

Ecological Effects of Water-Willow (*Justicia americana*) on Aquatic Invertebrate Species (Student Presentation)

Christopher M. Mynatt¹ and Mark A. Webb²

¹*Texas A&M University, Department of Wildlife and Fisheries Sciences, College Station, TX*

²*Texas Parks and Wildlife Department, Inland Fisheries Division, Snook, TX*

Control of *Phragmites communis* using Reduced Rate Glyphosate Applications and TopFilm Adjuvant

Jonathan R. Newman and Manuel A. Duenas-Lopez

Centre for Ecology and Hydrology, Wallingford, England

Evaluation of Water Willow (*Justicia americana*) Use by Reservoir Fishes (Student Presentation)

Ryan C. O'Hanlon¹, Christopher M. Mynatt¹, and Mark A. Webb²

¹*Texas A&M University, Department of Wildlife and Fisheries Sciences, College Station, TX*

²*Texas Parks and Wildlife Department, Inland Fisheries Division, Snook, TX*

Toxicity of Copper Sulfate and Copper-ethanolamine to *Microcystis aeruginosa* and *Pseudokirchneriella subcapitata* at Different Initial Cell Densities

Kuo-Pei Tsai, Kyla J. Iwinski, and **John H. Rodgers**

Clemson University, Department of Wildlife and Fisheries Biology, Clemson, SC

An Assessment of Aquatic Invasive Plants in the Illinois River: Water Hyacinth Surveillance, Mapping, Persistence, and Potential Seed Dispersal (Student Presentation)

Jay A. VonBank, Andrew F. Casper, Heath M. Hagy, and Aaron P. Yetter

Illinois Natural History Survey, Illinois River Biological Station and Forbes Biological Station Prairie Research Institute, University of Illinois, Havana, IL

Factors Influencing Sprouting of Crested Floating Heart Ramets

Leif N. Willey¹ and Michael D. Netherland²

¹*Aquatic Systems, Incorporated, Lauderdale, FL*

²*U.S. Army Corps of Engineers, Engineer Research and Development Center, Gainesville, FL*

Establishment of Native Aquatic Vegetation in Conjunction with an Integrated Pest Management Program (Student Presentation)

Haley N. Woelfel¹, Michael P. Masser¹, and Mark A. Webb²

¹*Texas A&M University, Department of Wildlife and Fisheries Sciences, College Station, TX*

²*Texas Parks and Wildlife Department, Inland Fisheries Division, Snook, TX*

Tuesday, July 15

Tuesday's Agenda-at-a-Glance

7:00 am	-	8:00 am	Continental Breakfast (<i>Oglethorpe Ballroom</i>)
7:00 am	-	5:00 pm	Exhibits Open (<i>Oglethorpe Ballroom</i>)
7:00 am	-	5:00 pm	Posters Open (<i>Oglethorpe Ballroom</i>)
7:30 am	-	5:00 pm	Registration (<i>Pre-function area between Oglethorpe and Madison Ballrooms</i>)
8:00 am	-	12:10 pm	Session III – General Session and Student Presentations (<i>Madison Ballroom</i>)
10:00 am	-	10:30 am	Refreshment Break (<i>Oglethorpe Ballroom</i>)
12:10 pm	-	1:40 pm	Lunch on your own
12:10 pm	-	1:40 pm	APMS Past Presidents' Luncheon (<i>Monterey Room - 2nd Floor</i>)
12:10 pm	-	1:40 pm	APMS Regional Chapters Presidents' Luncheon (<i>Telefair Room - 2nd Floor</i>)
1:40 pm	-	4:50 pm	Session IV – MidSouth APMS Special Session (<i>Madison Ballroom</i>)
3:00 pm	-	3:30 pm	Refreshment Break (<i>Oglethorpe Ballroom</i>)
5:00 pm	-	6:00 pm	MSAPMS Board of Directors Meeting (<i>Lafayette Room</i>)
6:00 pm	-	7:00 pm	Awards Reception (<i>Savannah River Queen</i>)
7:00 pm	-	10:00 pm	Awards Banquet (<i>Savannah River Queen</i>)

Session III – General Session and Student Presentations

8:00 am - 12:10 pm

Madison Ballroom

Moderator: Dr. Joe Vassios - APMS Board of Directors

United Phosphorus, Incorporated, Rocklin, CA

- 8:00 am **Effects of Salinity on Submerged Aquatic Vegetation's Growth and Abundance in North Carolina and Assessment of a SONAR's Accuracy to Measure Vegetation (*Student Presentation*)**
Audrey Pleva and Joseph Luczkovich
East Carolina University, Greenville, NC
- 8:20 am **Ready to Start Mapping Lakes and Reservoirs? An Introduction to the Capabilities and Requirements of Various Sonar Systems**
Bob Bahn and Susan B. Wilde
University of Georgia, Warnell School of Forestry and Natural Resources, Athens, GA
- 8:40 am **The use of Optical Properties for Distinguishing between Invasive Aquatic Species with Applications towards Remote Sensing (*Student Presentation*)**
Caroline Wylie¹, Celine Gueguen¹, and Eric Sager²
¹*Trent University, Environmental and Life Sciences, Peterborough, Ontario, Canada*
²*Fleming College, Ecological Restoration, Lindsay, Ontario, Canada*
- 9:00 am **Bioaccumulation of Total and Methyl Mercury in Water Hyacinth (*Eichhornia crassipes*) from a South Carolina Coastal Plain River**
Jane L. Guentzel and Julie W. Murphy
Coastal Carolina University, Department of Marine Science, Conway, SC
- 9:20 am **Efficacy Studies for the Control of Parrot Feather, Alligator Weed, Creeping Water Primrose and Monoecious Hydrilla Utilizing Topramezone (*Student Presentation*)**
Erika J. Haug and Rob J. Richardson
North Carolina State University, Department of Crop Science, Raleigh, NC

- 9:40 am **Providing Context for Invasive Aquatic Weed Control in Diverse Ecosystems: Sensitivity of Freshwater Molluscs to Hydrilla-Targeting Herbicides**
W. Gregory Cope¹, Jennifer M. Archambault¹, Christine M. Bergeron¹, Rob Richardson², Mark A. Heilman³, J. Edward Corey⁴, Michael D. Netherland⁵, and Ryan J. Heise⁶
¹North Carolina State University, Department of Applied Ecology, Raleigh, NC
²North Carolina State University, Department of Crop Science, Raleigh, NC
³SePRO Corporation, Carmel, IN
⁴North Carolina Division of Parks and Recreation, Raleigh, NC
⁵U.S. Army Corps of Engineers, Engineer Research and Development Center, Gainesville, FL
⁶North Carolina Wildlife Resources Commission, Raleigh, NC
- 10:00 am **Refreshment Break** (*Oglethorpe Ballroom*)
- 10:30 am **Blowing Bubbles: Long Range Control of Algae Using Ultrasound**
Jonathan R. Newman
Centre for Ecology and Hydrology, Wallingford, England
- 10:50 am **Predictive Management of Mat-forming Algae**
West M. Bishop and Ben E. Willis
SePRO Corporation, Whitakers, NC
- 11:10 am **Post-treatment Fate of Copper Applied as Algaecides and Herbicides**
John H. Rodgers, Alyssa J. Calomeni, and Kyla J. Iwinski
Clemson University, Department of Wildlife and Fisheries Biology, Clemson, SC
- 11:30 am **Responses of *Microcystis aeruginosa* and *Pseudokirchneriella subcapitata* when Exposed to an Anionic Polyacrylamide Blend (Student Presentation)**
Kyla J. Iwinski
Clemson University, Department of Wildlife and Fisheries Biology, Clemson, SC
- 11:50 am **Research Updates for Concentration Exposure Timings Using Endothall: Elodea, Chara, and Filamentous Algae**
Cody J. Gray¹, Joseph Vassios², and Gerald Adrian³
¹United Phosphorus, Incorporated, Peyton, CO
²United Phosphorus, Incorporated, Rocklin, CA
³United Phosphorus, Incorporated, King of Prussia, PA
- 12:10 pm **Lunch on your own**

Session IV – MidSouth Aquatic Plant Management Special Session

1:40 pm - 5:00 pm

Madison Ballroom

Moderator: Josh Yerby - MidSouth APMS President-Elect
Alabama Power Company, Environmental Affairs, Calera, AL

- 1:40 pm **Evaluation of Algaecide Applications for Treatment of *Lyngbya wollei* in Lay Lake (Student Presentation)**
Alyssa J. Calomeni and John H. Rodgers
Clemson University, department of Wildlife and Fisheries Biology, Clemson, SC
- 2:00 pm **Enhancement of Targeted Algal Management**
John H. Rodgers, Alyssa J. Calomeni, and Kyla J. Iwinski
Clemson University, Department of Wildlife and Fisheries Biology, Clemson, SC

- 2:20 pm **Evaluation of New Herbicide Combinations for Managing Giant Salvinia in Louisiana**
Christopher R. Mudge¹, Alexander J. Perret², and Jonathan R. Winslow²
¹*U.S. Army Corps of Engineers, Engineer Research and Development Center, Baton Rouge, LA*
²*Louisiana Department of Wildlife and Fisheries, Inland Fisheries, Baton Rouge, LA*
- 2:40 pm **Managing Floating and Emergent Plants with Stingray® (Carfentrazone-ethyl)**
Ben E. Willis¹, Todd C. Horton², Mark Heilman³, and West M. Bishop¹
¹*SePRO Corporation, Whitakers, NC*
²*SePRO Corporation, Anderson, SC*
³*SePRO Corporation, Carmel, IN*
- 3:00 pm **Refreshment Break** (*Oglethorpe Ballroom*)
- 3:30 pm **Phenology of *Potamogeton crispus* in the southeastern U.S.**
Gray Turnage¹, John D. Madsen², and Ryan M. Wersal³
¹*Mississippi State University, Geosystems Research Institute, Mississippi State, MS*
²*U.S. Department of Agriculture, Agricultural Research Service, Exotic and Invasive Weed Research Unit, Davis, CA*
³*Applied Biochemists (A Lonza Business), Alpharetta, GA*
- 3:50 pm **Contending with Recent Hydrilla Infestation of Georgia Power Company's Chattahoochee System Reservoirs**
Anthony R. Dodd
Georgia Power Company, Department of Environmental Affairs, Atlanta, GA
- 4:10 pm **Managing Hydrilla in Drinking Water Reservoirs**
Ken S. Presley
Henry County Water Authority, Locust Grove, GA
- 4:30 pm **Rapid Response to Monoecious Hydrilla in Lake Waccamaw**
Steve T. Hoyle
North Carolina State University, Raleigh, NC
- 4:50 pm **Adjourn**
- 5:00 pm **MSAPMS Board of Directors Meeting** (*Lafayette Room*)
- 6:00 pm **APMS Awards Reception** (*Savannah River Queen*)
- 7:00 pm **APMS Awards Banquet** (*Savannah River Queen*)

Wednesday, July 16

Wednesday's Agenda-at-a-Glance

7:00 am	-	8:00 am	Continental Breakfast (<i>Oglethorpe Ballroom</i>)
7:00 am	-	10:30 am	Exhibits Open (<i>Oglethorpe Ballroom</i>)
7:00 am	-	10:30 am	Posters Open (<i>Oglethorpe Ballroom</i>)
7:30 am	-	12:00 pm	Registration (<i>Pre-function area between Oglethorpe and Madison Ballrooms</i>)
8:00 am	-	12:00 pm	Session V – Public Outreach Special Session and General Presentations (<i>Madison Ballroom</i>)
10:00 am	-	10:30 am	Refreshment Break (<i>Oglethorpe Ballroom</i>)
10:30 am	-	12:00 pm	Poster and Exhibit Breakdown (<i>Oglethorpe Ballroom</i>)
12:30 pm	-	5:00 pm	APMS Board of Directors Meeting (<i>Harborview Room</i>)

Session V – Public Outreach Special Session and General Presentations

8:00 am - 12:00 pm

Madison Ballroom

Moderator: Dr. Rob Richardson - APMS Vice President

North Carolina State University, Raleigh, NC

8:00 am **Connecting Management Professionals, Researchers and the Public Sector to Aquatic Plant Management Information**

Karen Brown

University of Florida, Center for Aquatic and Invasive Plants, Gainesville, FL

8:20 am **Invasive Plant Education: Invading a Classroom near You!**

Katie Walters

University of Florida, Center for Aquatic and Invasive Plants, Gainesville, FL

8:40 am **Benefits of Controlling Nuisance Aquatic Plants and Algae in the United States**

Kurt D. Getsinger¹, Eric Dibble², John H. Rodgers³, and David Spencer⁴

¹*U.S. Army Corps of Engineers, Engineer Research and Development Center, Vicksburg, MS*

²*Mississippi State University, Department of Wildlife, Fisheries and Aquaculture, Mississippi State, MS*

³*Clemson University, Department of Wildlife and Fisheries Biology, Clemson, SC*

⁴*U.S. Department of Agriculture, Agricultural Research Service, Exotic and Invasive Weed Research Unit, Davis, CA*

9:00 am **APMS Herbicide Resistance Management PowerPoint Lessons**

Jeffrey D. Schardt

Florida Fish and Wildlife Conservation Commission, Tallahassee, FL

9:20 am **Evaluating Efficacy of Aquatic Herbicides on *Rotala (Rotala rotundifolia)***

Lyn A. Gettys¹, Carl J. Della Torre III¹, and William T. Haller²

¹*University of Florida, Institute of Food and Agricultural Sciences, Ft. Lauderdale Research and Education Center, Davie, FL*

²*University of Florida, Institute of Food and Agricultural Sciences, Center for Aquatic and Invasive Plants, Gainesville, FL*

9:40 am **Evaluation of Auxin Herbicide Applications Following Pretreatment with Select Algacides for Control of Eurasian Watermilfoil in Long Lake, Iosco County, MI**

Ryan M. Wersal¹, Rich DeJonghe², Jeff Knox³, and Bill Ratajczyk²

¹*Applied Biochemists (A Lonza Business), Alpharetta, GA*

²*Applied Biochemists (A Lonza Business), Germantown, WI*

³*Aquatic Services, Incorporated, Goodrich, MI*

10:00 am **Refreshment Break (*Oglethorpe Ballroom*)**

- 10:30 am **Aquatic Weed and Algae Control in Irrigation Canals Using Endothall**
Joseph Vassios¹, Cody J. Gray², and Gerald Adrian³
¹*United Phosphorus, Incorporated, Rocklin, CA*
²*United Phosphorus, Incorporated, Peyton, CO*
³*United Phosphorus, Incorporated, King of Prussia, PA*
- 10:50 am **Sonar® Aquatic Herbicide: Technical Overview of Past and Present Research, Operational Use
Pattern Development and Future Outlook**
Mark Heilman
SePRO Corporation, Carmel, IN
- 11:10 am **APMS Regional Chapters: An Update on Key Initiatives within Each Region**
Rob Richardson, Moderator
North Carolina State University, Raleigh, NC
- Western
 Texas
 South Carolina
 Northeast
 Midwest
 MidSouth
 Florida
- 11:45 am **Highlights from the 54th Annual Meeting**
Cody Gray
United Phosphorous, Incorporated, Peyton, CO
- 12:00 pm **Adjourn 54th Annual Meeting**
- 12:30 pm **APMS Board of Directors Meeting** (*Harborview Room*)

NEXT YEAR

55th Annual Meeting
Hilton Myrtle Beach Oceanfront Resort
Myrtle Beach, South Carolina
July 12-15, 2015

WSSA to Sponsor Second National Summit on Herbicide Resistance

The Weed Science Society of America (WSSA) announced plans for a second national scientific summit on the topic of herbicide resistance.

Scheduled for September 10 in Washington, D.C., the event will be hosted by the National Research Council at the Auditorium in the National Academy of Sciences Building on Constitution Avenue. It is expected to draw public policy makers, manufacturers, distributors, retailers, growers and educators who are interested in reducing the devastating threat herbicide resistance represents to agricultural productivity. Everyone is invited to attend.

WSSA sponsored a similar event in 2012 to share best management practices that can reduce the incidence of herbicide resistance, including diversification of weed control tactics used by growers. The upcoming Summit will build on the insights and perspectives developed during that first event, with the goal of promoting a shared understanding of herbicide resistance issues and effective ways to address them.

The program will focus on the current state of the herbicide resistance problem, recent accomplishments and learnings, the economics of weed management, education and outreach initiatives, new technologies, regulatory issues and a call to action.

“Our objective is for everyone who attends to walk away knowing the role they can play in helping to address this critical challenge – whether it involves the choices they make in weed management or their support for education initiatives and incentives that promote informed stewardship,” says David Shaw, Ph.D., WSSA past president and chair of their Herbicide Resistance Education Committee.

Further details on the Summit will be posted soon to the WSSA website. Further information and resources on herbicide resistance are also available on the site at www.wssa.net/weed/resistance.

APMS Membership Survey

The APMS Membership Committee has developed a membership survey to identify ways to better serve the members of the Society. It includes items related to the Society, the board of directors, and the annual meeting. This survey should only take 5-10 minutes to complete, and results of the survey will be shared with the board, as well as members at the APMS Annual Meeting in Savannah, GA. The survey can be completed at <https://www.surveymonkey.com/s/96VJB85>. Please complete the survey at your convenience, and feel free to contact me with any input or questions regarding the survey.

Joe Vassios
joseph.vassios@uniphos.com

Training Video: Best Management Practices for Preventing the Spread of Invasive Plants

2013 by California Invasive Plant Council

<http://www.cal-ipc.org/resources/booksandcdfs/preventionvideo.php>

42 minutes, \$10 (plus tax and shipping)

Best Management Practices for Preventing the Spread of Invasive Plants is a 42-minute training video designed for land managers and those who manage road or utility corridors, which can be key pathways for the spread of invasive plants. The video summarizes key content from our BMP manuals on the same topic. We cover ways to prevent the movement of invasive plant propagules, the importance of minimizing soil and vegetation disturbance, the need to incorporate prevention practices into project planning, and how promoting awareness within our organization can enhance prevention.



Presenters:

Mark Newhouser, Sonoma Ecology Center

Ken Murray, Caltrans Maintenance Division

Scott Dowlan, Caltrans Landscape Architecture

Garret Dickman, Yosemite National Park

Steve Hallmark, Sacramento Municipal Utility District

Janet Klein and Andrea Williams, Marin Municipal Water District

Bruce Delgado, Bureau of Land Management

To order a copy

All books, brochures, and CD-ROMs may be [ordered online through the Cal-IPC shop](#), by [printing the order form](#) or by calling us at 510-843-3902. Please make checks payable to Cal-IPC and mail to: Cal-IPC, 1442-A Walnut St. #462, Berkeley, CA 94709.

Herbicide Resistance Stewardship in Aquatic Plant Management

The Aquatic Plant Management Society (APMS) working in cooperation with the Weed Science Society of America (WSSA) has developed the following module addressing herbicide resistance in aquatic plant management venues. The clarification document compares and contrasts aquatic plant control with crop management and addresses how the types of aquatic plants, settings in which they are controlled, and the relatively few available control options, influence herbicide resistance management strategies. Resistance management measures that applicators routinely implement into aquatic plant control programs are reviewed along with conditions in aquatic venues that challenge incorporating stewardship actions that are successful in production crop settings. PowerPoint Lessons summarize key points in the document and case examples further illustrate the complexities in managing aquatic plants with herbicides.

Overview

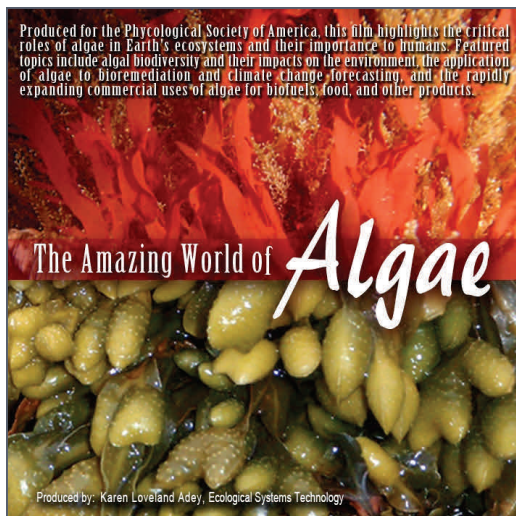
White Paper: Herbicide Resistance Stewardship in Aquatic Plant Management

Lesson 1 – Aquatic Plant Management Venues and Plant Types

Lesson 2 – Considering Available Herbicides and Aquatic Plant Growth Patterns

Lesson 3 – Practical Examples in Aquatics that Challenge Traditional Resistance Management Strategies

From the Phycological Society of America



The Amazing World of Algae is an educational DVD which highlights the role of algae in the Earth's ecosystem and their importance to humans. Featured topics include algal biodiversity and their impact on the environment, the application of algae to bioremediation and climate change forecasting and the rapidly expanding commercial uses of algae for biofuels, food, and other products. The DVD is available [here](#).

The current issue of al-je, an on-line publication of the Phycological Society of America designed for use by the general public, is available [here](#).



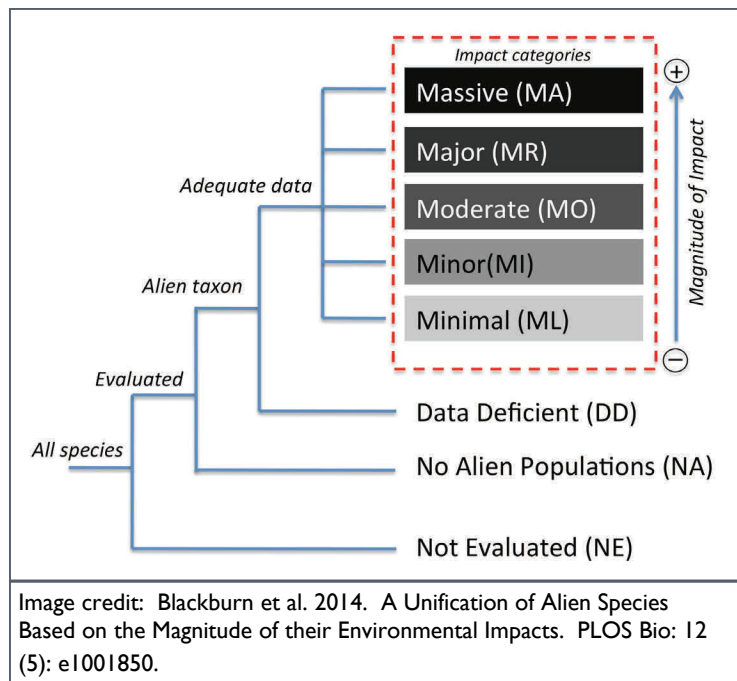
Scientists Propose New Classification Scheme for Invasive Species

An essay entitled “A Unified Classification of Alien Species Based on the Magnitude of their Environmental Impacts” by Blackburn et al. (2014) was recently published in PLOS Biology.

Abstract: “Species moved by human activities beyond the limits of their native geographic ranges into areas in which they do not naturally occur (termed aliens) can cause a broad range of significant changes to recipient ecosystems; however, their impacts vary greatly across species and the ecosystems into which they are introduced. There is therefore a critical need for a standardized method to evaluate, compare, and eventually predict the magnitudes of these different impacts. Here, we propose a straightforward system for classifying alien species according to the magnitude of their environmental impacts, based on the mechanisms of impact used to code species in the International Union for Conservation of Nature (IUCN) Global Invasive Species Database, which are presented here for the first time.

The classification system uses five semi-quantitative scenarios describing impacts under each mechanism to assign species to different levels of impact—ranging from Minimal to Massive—with assignment corresponding to the highest level of deleterious impact associated with any of the mechanisms. The scheme also includes categories for species that are Not Evaluated, have No Alien Population, or are Data Deficient, and a method for assigning uncertainty to all the classifications. We show how this classification system is applicable at different levels of ecological complexity and different spatial and temporal scales, and embraces existing impact metrics. In fact, the scheme is analogous to the already widely adopted and accepted Red List approach to categorizing extinction risk, and so could conceivably be readily integrated with existing practices and policies in many regions.”

A PDF to the full text can be found [here](#).



Calendar of Events

2014

- Jul 13-16 [APMS Annual Conference](#); Savannah, GA
- Aug 10-15 [Ecological Society of America](#); Sacramento, CA
- Sept 9-11 [Great Lakes Restoration Conference](#); Grand Rapids, MI
- Oct 8-11 [California Invasive Plant Council Symposium](#); California State University—Chico
- Oct 8-10 [South Carolina APMS](#); Myrtle Beach, SC
- Oct 12-14 [Texas APMS](#); Hamilton, TX
- Oct 13-16 [Florida APMS Annual Meeting](#); Daytona Beach, FL

APMS Promotional Information Available

The APMS has two tabletop displays and posters, suitable for presentation at conferences and stakeholder meetings. Also available are tri-fold membership brochures and an eight-page color booklet with additional information about the APMS programs and initiatives. You may borrow the display for your next conference and obtain copies of the brochure and booklet by contacting one of the following:

Jeff Schardt: (850) 617-9420 or jeff.schardt@myfwc.com

Mike Netherland: (352) 392-0335 or mdnether@ufl.edu

2014 Sustaining Members

- Alligare, LLC
- Applied Aquatic Management, Inc.
- Applied Biochemists, A Lonza Business
- Aqua Services, Inc.
- AquaTechnex, LLC
- Aquatic Control, Inc.
- Brewer International
- Clarke Aquatic Services
- Crop Production Services
- Cygnet Enterprises, Inc.
- Lake Restoration
- Nufarm Americas
- SePRO Corporation
- Syngenta
- United Phosphorus, Inc.
- Vertex Water Features

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Mission

The Aquatic Plant Management Society (APMS) strives to promote environmental stewardship through scientific innovation and development of technology related to integrated plant management in aquatic and riparian systems.

We're on the Web!

<http://apms.org/>