

Aquatic Plant News

The Newsletter of the Aquatic Plant Management Society, Inc.
7922 NW 71st Street, Gainesville, FL 32653
Jeffrey D. Schardt, Newsletter Editor

Issue 112

June 2016



Join us in Grand Rapids, July 16-20, Amway Grand Plaza Hotel Site of our 56th Annual Meeting

Our 2016 annual meeting will be held at the historic Amway Grand Plaza Hotel July 17-20. The hotel block is almost full, so please reserve your room as soon as possible. Below is the link to reservations at the Amway Grand Plaza:

https://resweb.passkey.com/Resweb.do?mode=welcome_ei_new&eventID=14232510

Reservations Toll Free: (800) 253-3590

Reservations Local Phone: (616) 776-6450

When making your reservations by phone, be sure to mention that you are part of the **Aquatic Plant Management Society**. The cutoff date for reservations at the special group rate is June 23, 2016. Our special APMS guest room rate is \$134.00 per night plus applicable tax for single and double occupancy. These special rates are available both three days prior to the conference and three days post conference, subject to availability. The Amway Grand requires that all reservations be guaranteed with a major credit card or a deposit. Deposits are refundable if notice of cancellation is received by the Hotel Reservations Department at least 48 hours prior to the date of expected arrival. Check in time is 4:00 p.m. and checkout time is 11:00 a.m. If you choose to depart earlier than your reserved departure date, the hotel will charge one night room and tax. If you are having trouble getting a room at the hotel for the nights you need, please call our meeting planner Bill Torres at 850-519-4310 or BillT@flepms.org. We are working on an overflow hotel if the Amway sells out.

We're on the Web!
apms.org

Plan for the Meeting—Enjoy the Surroundings

Guest Tour

This year, our Guest Tour begins with a one-hour guided tour of the city of Grand Rapids which includes passing the Gerald R. Ford Presidential Museum and learning about President Ford, traveling through one of the country's largest urban neighborhoods, Heritage Hill, and seeing the mansions that were built in the late 1800s and early 1900s for the movers and shakers who developed the city of Grand Rapids. Also included is a visit to the entertainment areas of town as well as the oldest part of the city – The City Center – home to the Grand Rapids Art Museum and tons of shopping, restaurants and coffee bars. The tour covers the history and stories about Grand Rapids. We will stop at the new Downtown Market, an urban market filled with food vendors and local products to take home. Following the market, we will drive guests to the world famous Frederik Meijer Gardens and Sculpture Park.

Annual Meeting Registration

Please register as soon as possible. It saves our registration desk volunteers a great deal of time if you are pre-registered – and saves you money. 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 17, 2016. After this date, registration fees at the door will be \$330.00 for a delegate and \$155.00 for guests. 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 Amway Grand Plaza is a 20 minute drive from the Gerald R. Ford International Airport and is accessible by taxi, limousine, rental car or Uber. A typical taxi fee is \$32 one way.

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Tommy Bowen: Meeting Planning Committee

56th Annual Meeting of the APMS Registration Form

Delegate/Student/Guest 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 <i>(by June 17, 2016)</i>	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) <i>(also includes the Guest Tour)</i>			
Name(s): _____	\$ 130.00	\$ 155.00	\$ _____
<input type="checkbox"/> One-day Meeting Registration <i>(includes refreshment breaks on day of attendance only)</i>			
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 (2016)

<input type="checkbox"/> Individual	\$ 75.00	\$ _____
<input type="checkbox"/> Student	\$ 20.00	\$ _____
<input type="checkbox"/> 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.
7922 NW 71st Street
Gainesville, FL 32653
Fax: 352-392-3462

Early registration accepted if form and payment received by June 17, 2016. Registration questions, please phone: 662-617-4571 or E-mail: APMS14@Hotmail.com

Cancellation/Refund Policy: Registration fees are fully refundable prior to June 30, 2016, 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, 2016. Notice of cancellation must be received by APMS via mail, fax, or e-mail. **Phone cancellations will not be accepted.**

APMS 2016 Meeting Agenda

Meeting-at-a-Glance (*See daily Agendas-at-a-Glance below for specific event times and locations*)

Sunday:

APMS Board of Directors Meeting
Exhibits Setup
Poster Setup
Registration Begins
Student Meet and Greet
Presidents' Reception

Monday:

Registration
General Meeting Opens
Guest Tour
Student Affairs Luncheon
Regional Chapters Presidents' Luncheon
APMS Annual Business Meeting
Poster Session & Reception

Tuesday:

Registration
General Session – Student Presentations
APMS Past Presidents' Luncheon
Women in Aquatics Luncheon
Awards Banquet Reception
Awards Banquet – APMS Awards Presentations

Wednesday:

General Session – Updates
General Meeting Adjourns – 12:35 pm
Student Tour
APMS Board of Directors Meeting

Sunday, July 17

Sunday's Agenda-at-a-Glance

7:30 am	-	5:00 pm	APMS Board of Directors Meeting (<i>Pearl Room</i>)
12:00 pm	-	5:00 pm	Exhibits Setup (<i>Ambassador Ballroom East</i>)
12:00 pm	-	5:00 pm	Poster Setup (<i>Ambassador Ballroom East</i>)
1:00 pm	-	5:00 pm	Registration (<i>Crown Foyer – Ambassador Ballrooms</i>)
6:00 pm	-	7:00 pm	Student Meet and Greet (<i>Garden Court – Lobby Level</i>)
7:00 pm	-	9:00 pm	President's Reception (<i>Gerald R. and Betty Ford Presidential Ballroom Room</i>)

Monday, July 18

Monday's Agenda-at-a-Glance

7:00 am	-	8:00 am	Continental Breakfast (<i>Ambassador Ballroom East</i>)
7:00 am	-	5:00 pm	Exhibits Open (<i>Ambassador Ballroom East</i>)
7:00 am	-	5:00 pm	Posters Open (<i>Ambassador Ballroom East</i>)
7:30 am	-	5:00 pm	Registration (<i>Crown Foyer – Ambassador Ballrooms</i>)
8:00 am	-	11:40 am	Session I – Keynote Session (<i>Ambassador Ballroom West</i>)
10:00 am	-	3:30 pm	Guest Tour – Pre-registered Guests meet at the Lyon Square entrance at 9:45 am
9:40 am	-	10:00 am	Refreshment Break (<i>Ambassador Ballroom East</i>)
11:40 am	-	1:00 pm	Lunch on your own
11:40 am	-	1:00 pm	APMS Student Affairs Luncheon (<i>Emerald A</i>)
11:40 am	-	1:00 pm	Regional Chapters Presidents' Luncheon (<i>Emerald B</i>)
1:00 pm	-	5:00 pm	Session II – Midwest Session and Student Presentations (<i>Ambassador Ballroom West</i>)
2:40 pm	-	3:00 pm	Refreshment Break (<i>Ambassador Ballroom East</i>)
5:00 pm	-	5:30 pm	APMS Annual Business Meeting (<i>Ambassador Ballroom West</i>)
6:00 pm	-	7:30 pm	Poster Session and Reception (<i>Crown Foyer - Ambassador Ballroom East</i>)

Session I – Symposium and General Presentations on Midwest Aquatic Plant Management Issues

8:00 am - 11:40 am

Ambassador Ballroom West

Moderator: Dr. John Madsen - APMS President Elect, Program Committee Chair, Legislative Committee Chair
U.S. Department of Agriculture, Agriculture Research Service, Exotic and Invasive Weeds Research Unit, Davis, CA

- 8:00 am **Call to Order - Announcements**
John Madsen
U.S. Department of Agriculture, Agriculture Research Service, Exotic and Invasive Weeds Research Unit, Davis, CA
- 8:05 am **Presidential Address**
Robert J. Richardson
North Carolina State University, Crop Science Department, Raleigh, NC
- 8:15 am **Partnerships for Management: Practitioners, Regulators, Researchers, and Resource Managers**
Symposium Introduction – John Madsen
- 8:20 am **Minnesota’s Approach to Management of Invasive Aquatic Plants**
Chip Welling
Minnesota Department of Natural Resources, Division of Ecological and Water Resources, Saint Paul, MN
- 8:40 am **Collaborative Research on Invasive Aquatic Plant Management, a Consultant’s Perspective**
Paul J. Hausler
Progressive AE, Grand Rapids, MI
- 9:00 am **Aquatic Plant Management as a Collaborative Process from the Perspective of a Management Practitioner**
Jason Broekstra
PLM Lake & Land Management Corporation, Alto, MI
- 9:20 am **Collaboration for Invasive Aquatic Plant Management, A Lakeshore Owner’s Perspective**
Scott Brown
Executive Director, Michigan Lake & Stream Association, Grass Lake, MI
- 9:40 am **Refreshment Break** (*Ambassador Ballroom East*)
- 10:00 am **Role of Government Research on Regional Aquatic Plant Management Issues: Demonstration Projects**
Michael D. Netherland¹ and Kurt D. Getsinger²
¹*U.S. Army Engineer and Research Development Center, Environmental Laboratory, Gainesville, FL*
²*U.S. Army Engineer and Research Development Center, Environmental Laboratory, Vicksburg, MS*
- 10:20 am **The Role of a University Specialist in Regional Aquatic Plant Management Programs**
Robert J. Richardson and Steve T. Hoyle
North Carolina State University, Crop Science Department, Raleigh, NC
- 10:40 am **Panel Discussion**
- 11:00 am **The Michigan Aquatic Nuisance Plant Species Program**
Lisa Huberty
Michigan Department of Environmental Quality, Water Resources, Division, Lansing, MI
- 11:20 am **Michigan’s Aquatic Invasive Species Program – Five Years of Enhancements**
Sarah LeSage
Michigan Department of Environmental Quality, Water Resources Division, Lansing, MI
- 11:40 am **Morning Wrap-up and Announcements - Lunch on your own**

Session II – Midwest Session and Student Presentations

1:00 pm - 5:00 pm

Ambassador Ballroom West

Moderator: Michael D. Netherland, APMS Awards Committee Chair, Past President (2014)

U.S. Army Engineer and Research Development Center, Environmental Laboratory, Gainesville, FL

- 1:00 pm **Response of Aquatic Macrophytes to Removal of Invasive Common Carp in a Minnesota Shallow Lake (Student Presentation)**
Melaney Dunne¹, Raymond M. Newman¹, Przemyslaw G. Bajer², and Peter Sorensen¹
¹*University of Minnesota, Department of Fisheries, Wildlife, and Conservation Biology, Saint Paul, MN*
²*University of Minnesota, Minnesota Aquatic Invasive Species Research Center, Saint Paul, MN*
- 1:20 pm **Water Soldier (*Stratiotes aloides*) in Ontario - Preventing Its Spread to the Great Lakes**
Holly I. Simpson
Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario, Canada
- 1:40 pm **Response of Eurasian and Hybrid Watermilfoil to Five Auxin-mimic Herbicides (Student Presentation)**
Jens Beets¹ and Michael D. Netherland²
¹*University of Florida, Agronomy Department, Gainesville, FL*
²*U.S. Army Engineer and Research Development Center, Environmental Laboratory, Gainesville, FL*
- 2:00 pm **Invasional Meltdown in Minnesota Lakes: Non-native Plants Are Winners and Native Plants Are Losers when Common Carp Invade**
Daniel J. Larkin¹, Marcus W. Beck², and Przemyslaw G. Bajer¹
¹*University of Minnesota, Minnesota Aquatic Invasive Species Research Center, Saint Paul, MN*
²*U.S. Environmental Protection Agency, National Health and Environmental Effects Research Laboratory, Gulf Breeze, FL*
- 2:20 pm **Biology and Management of Monoecious Hydrilla (*Hydrilla verticillata*) (Student Presentation)**
Joshua D. Wood¹ and Michael D. Netherland²
¹*University of Florida, Center for Aquatic and Invasive Plants, Gainesville, FL*
²*U.S. Army Engineer and Research Development Center, Environmental Laboratory, Gainesville, FL*
- 2:40 pm **Refreshment Break (Ambassador Ballroom East)**
- 3:00 pm **Evaluating the Sensitivity of Seven Aquatic Plants to Procellacor™ Herbicide (Student Presentation)**
Erika Haug¹, Robert J. Richardson¹, Michael D. Netherland², and Mark Heilman³
¹*North Carolina State University, Crop Science Department, Raleigh, NC*
²*U.S. Army Engineer and Research Development Center, Environmental Laboratory, Gainesville, FL*
³*SePRO Corporation, Carmel, IN*
- 3:20 pm **Hydrilla (*Hydrilla verticillata*) Risk Assessment for the Great Lakes Basin**
Carl E. Mach¹, Kris Erickson¹, Matthew A. Barnes², Jonathan M. Bossenbroek³, Robert J. Richardson⁴, Christina Rockwell⁵, and Kathleen Evans¹
¹*Ecology and Environment, Incorporated., Lancaster, NY*
²*Texas Tech University, Natural Resources Management, Lubbock, TX*
³*University of Toledo, Environmental Science, Toledo, OH*
⁴*North Carolina State University, Crop Science Department, Raleigh, NC*
⁵*Ecology and Environment, Incorporated, Buffalo, NY*
- 3:40 pm **Potential Spread of Hydrilla (*Hydrilla verticillata*) to the Great Lakes Basin (Student Presentation)**
Kristen M. Hebebrand and Jonathan M. Bossenbroek
University of Toledo, Environmental Science, Toledo, OH

- 4:00 pm **Combining Multiple Species Distribution Modeling Approaches to Predict Suitable Habitat for the Invasive Aquatic Macrophyte *Hydrilla verticillata***
 Matthew A. Barnes¹, Carl Mach², Carlos Portillo-Quintero¹, Christina Rockwell², Sasha D. Soto¹, and Kris Erickson²
¹*Texas Tech University, Natural Resources Management Department, Lubbock, TX*
²*Ecology and Environment, Incorporated, Lancaster, NY*
- 4:20 pm **Competition of Select Submersed Aquatic Plants with Hydrilla in a Cool and a Warm Climate (*Student Presentation*)**
Amy Henry, Tyler Harris, and Robert J. Richardson
North Carolina State University, Crop Science Department, Raleigh, NC
- 4:40 pm **Development and Enhancement of the Michigan Invasive Aquatic Plant Citizen Monitoring Program**
Angela A. De Palma-Dow and Jo Latimore
Michigan State University, East Lansing, MI
- 5:00 pm **APMS Annual Business Meeting**
- 6:00 pm **Poster Session and Reception (*Crown Foyer - Ambassador Ballroom East*)**

Poster Session

6:00 pm - 7:30 pm

Ambassador Ballroom East

Starry Stonewort: Using eDNA Technology to Address Identification Challenges Faced by Lake Monitoring Volunteers and Professionals

Angela A. De Palma-Dow¹, Erick Elgin², Maggie Williams³, and Jo Latimore¹

¹*Michigan State University, East Lansing, MI*

²*MiCorps Cooperative Lakes Monitoring Program, East Lansing, MI*

³*Michigan State University, Environmental Engineering, East Lansing, MI*

An Evaluation of Past and Present Aeration Designs: An Ohio Case Study

Patrick M. Goodwin

Vertex Water Features, Ponte Vedra Beach, FL

Control of Dreissenid Mussels with a more Rational Use of Copper

David G. Hammond

Earth Science Labs, Incorporated, Greenbrae, CA

2,4-D Metabolism in Eurasian Watermilfoil (*Myriophyllum spicatum*) and Several 2,4-D Tolerant Milfoil Hybrid Populations (*M. spicatum* X *M. sibiricum*) (*Student Presentation*)

Kallie C. Kessler, Mirella Ortiz, and Scott J. Nissen

Colorado State University, Fort Collins, CO

Delta Region Areawide Aquatic Weed Project and the Adaptive Management of Invasive Weeds in the Sacramento / San Joaquin River System

John D. Madsen¹, Patrick J. Moran², Paul J. Pratt², David L. Bubenheim³, and Edward J. Hard⁴

¹*U.S. Department of Agriculture, Agriculture Research Service, Exotic and Invasive Weeds Research Unit, Davis, CA*

²*U.S. Department of Agriculture, Agriculture Research Service, Exotic and Invasive Weeds Research Unit, Albany, CA*

³*National Aeronautics and Space Administration, Ames Research Center, Moffett Field, CA*

⁴*California Department of Parks and Recreation, Division of Boating and Waterways, Sacramento, CA*

Integration of Prevention, Early Detection, and Suppression of Aquatic Invasive Species: An Example from Eurasian Watermilfoil Management

Alejandro Reyes

State University of New York, Oneonta Biological Field Station, Oneonta, NY

Ecological Restoration Using Aquatic Mechanical Harvesting

Bruce A. Richards

Weedoo Shoreline Workboats, Incorporated, Hockessin, DE

Incorporation of Biotype Alters Species Distribution Model Predictions of Suitable Habitat for the Invasive Aquatic Macrophyte, *Hydrilla verticillata* (Student Presentation)

Sasha D. Soto¹, Carl Mach², Carlos Portillo-Quintero¹, Christina Rockwell², Kris Erickson², and Matthew A. Barnes¹

¹*Texas Tech University, Natural Resources Management Department, Lubbock, TX*

²*Ecology and Environment, Incorporated, Lancaster, NY*

The Effects of the Contact Herbicide Diquat on Mixed Stands of Flowering Rush and Hardstem Bulrush in Lake Sallie, MN - a Pilot Study

Lee G. Turnage¹, Brent Alcott², and Tera Guetter²

¹*Mississippi State University, Geosystems Research Institute, Starkville, MS*

²*Pelican River Watershed District, Detroit Lakes, MN*

Tuesday, July 19

Tuesday's Agenda-at-a-Glance

7:00 am	-	8:00 am	Continental Breakfast (<i>Ambassador Ballroom East</i>)
7:00 am	-	5:20 pm	Exhibits Open (<i>Ambassador Ballroom East</i>)
7:00 am	-	5:20 pm	Posters Open (<i>Ambassador Ballroom East</i>)
7:30 am	-	5:00 pm	Registration (<i>Crown Foyer – Ambassador Ballroom</i>)
8:00 am	-	11:40 am	Session III – General Session and Student Presentations (<i>Ambassador Ballroom West</i>)
9:40 am	-	10:00 am	Refreshment Break (<i>Ambassador Ballroom East</i>)
11:40 am	-	1:00 pm	Lunch on your own
11:40 am	-	1:00 pm	APMS Past Presidents' Luncheon (<i>Vandenberg A</i>)
11:40 am	-	1:00 pm	Women in Aquatics Luncheon (<i>Vandenberg B</i>)
1:00 pm	-	5:20 pm	Session IV – General Session and Student Presentations (<i>Ambassador Ballroom West</i>)
2:40 pm	-	3:00 pm	Refreshment Break (<i>Ambassador Ballroom East</i>)
6:00 pm	-	7:00 pm	Awards Reception (<i>Center Concourse</i>)
7:00 pm	-	10:00 pm	Awards Banquet (<i>Pantlind Room</i>)
8:30 pm	-	10:00 pm	APMS Awards Presentations (<i>Pantlind Room</i>)

Session III – General Session and Student Presentations

8:00 am - 11:40 am

Ambassador Ballroom West

Moderator: Christopher R. Mudge – APMS Student Affairs Committee Chair

U.S. Army Corps of Engineers, Engineer Research and Development Center, Baton Rouge, LA

8:00 am **Translocation of ¹⁴C-Endothall in Eurasian Watermilfoil and Two Hydrilla Biotypes (Student Presentation)**

Mirella Ortiz¹, Kallie C. Kessler¹, Scott J. Nissen¹, and Cody J. Gray²

¹*Colorado State University, Fort Collins, CO*

²*UPI, Peyton, CO*

8:20 am **AERF Update**

Carlton Layne

Aquatic Ecosystem Restoration Foundation, Marietta, GA

8:40 pm **Identifying Morphological Differences and Herbicide Efficacy of the Uruguay Water Primrose Complex (*Ludwigia uruguayensis*) in Florida (Student Presentation)**

Afsari Banu, Stephen F. Enloe, and Colette Jacono

University of Florida, Agronomy Department, Gainesville, FL

- 9:00 am **At the Front of a Storm: What Emerging Federal Processes for Endangered Species Risk Assessment Will Mean to the Registration**
Bernalyn D. McGaughey
Compliance Services International, Lakewood, WA
- 9:20 am **A Novel High-throughput Genotyping Assay for Distinguishing *Myriophyllum* spp. and their Hybrids (Student Presentation)**
Kallie C. Kessler¹, Eric L. Patterson¹, Margaret B. Fleming², Scott J. Nissen¹, and Todd A. Gaines¹
¹*Colorado State University, Fort Collins, CO*
²*U.S. Department of Agriculture, Agriculture Research Service, National Center for Genetic Resources Preservation, Fort Collins, CO*
- 9:40 am **Refreshment Break (Ambassador Ballroom East)**
- 10:00 am **Effects of Aquatic Herbicides on Brazilian Pepper Tree (*Schinus terebinthifolius*) (Student Presentation)**
Cody A. Lastinger and Stephen F. Enloe
University of Florida, Agronomy Department, Gainesville, FL
- 10:20 am **Washington Update**
Lee VanWychen
Weed Science Society of America, Alexandria, VA
- 10:40 am **Influence of Copper Algaecide Concentration and Formulation on Aqueous Microcystin-LR Degradation (Student Presentation)**
Kyla J. Iwinski¹, Ciera M. Kinley², Alyssa Calomeni², Tyler Geer², and John Rodgers, Jr.²
¹*Clemson University, Department of Wildlife and Fisheries Biology, Clemson, SC*
²*Clemson University, Department of Forestry and Environmental Conservation, Clemson, SC*
- 11:00 am **Control of Taste and Odor Producing Algae in Source Water for Anderson Regional Joint Water System**
John H. Rodgers, Jr.¹, Alyssa Calomeni¹, Kyla J. Iwinski², Tyler Geer¹, Matt Huddleston³, Scott Willett⁴, Jennifer Barrington⁴
¹*Clemson University, Department of Forestry and Environmental Conservation, Clemson, SC*
²*Clemson University, Department of Wildlife and Fisheries Biology, Clemson, SC*
³*SynTerra, Greenville, SC*
⁴*Anderson Regional Joint Water System, Anderson, SC*
- 11:20 am **Influence of Dissolved and Particulate Organic Carbon on Exposures of an SCP Algaecide and Consequent Responses of *Microcystis aeruginosa* (Student Presentation)**
Tyler Geer, Ciera M. Kinley, Kyla J. Iwinski, Alyssa Calomeni, John H. Rodgers, Jr.
Clemson University, Department of Forestry and Environmental Conservation, Clemson, SC
- 11:40 am **Morning Wrap-up and Announcements - Lunch on your own**

Session IV – General Session and Student Presentations

1:00 pm - 5:20 pm

Ambassador Ballroom West

Moderator: Ryan M. Wersal – APMS Director

Lonza, Alpharetta, GA

- 1:00 pm **Field Monitoring and Sampling of Chemically Treated Giant Salvinia in Louisiana and Texas**
Christopher R. Mudge¹ and Bradley T. Sartain²
¹*U.S. Army Engineer and Research Development Center, Baton Rouge, LA*
²*Louisiana State University, School of Plant, Environmental, and Soil Sciences, Baton Rouge, LA*

- 1:20 pm **Bald Cypress (*Taxodium distichum* (L.) Rich.) Survival and Re-leafing Success in Response to Low GPA Winter Herbicide Applications for Managing Giant Salvinia (*Salvinia molesta* D.S. Mitchell) (Student Presentation)**
Bradley T. Sartain¹ and Christopher R. Mudge²
¹Louisiana State University, School of Plant, Environmental, and Soil Sciences, Baton Rouge, LA
²U.S. Army Engineer and Research Development Center, Baton Rouge, LA
- 1:40 pm **The Corps of Engineers Aquatic Plant Control Research Program – An Update**
Linda Nelson¹ and Jeremy Crossland²
¹U.S. Army Engineer Research and Development Center, Vicksburg, MS
²U.S. Army Corps of Engineers, Headquarters, Washington, DC
- 2:00 pm **Evaluation of an Integrated Pest Management Approach using Herbicide Treatments and the Giant Salvinia Weevil (*Cyrtobagous salviniae*) to Control Giant Salvinia (*Salvinia molesta*) (Student Presentation)**
Allie Cozad¹ and Christopher R. Mudge²
¹Louisiana State University, Natchitoches, LA
²U.S. Army Engineer and Research Development Center, Baton Rouge, LA
- 2:20 pm **The State of the State of Old World Climbing Fern in Florida**
Stephen F. Enloe
University of Florida, Agronomy Department, Gainesville, FL
- 2:40 pm **Refreshment Break (Ambassador Ballroom East)**
- 3:00 pm **Monoecious Hydrilla Management in a Lotic System: Target and Non-target Responses to Fluridone (Student Presentation)**
Shannon Auell¹, Greg Cope², Steve T. Hoyle¹, and Robert J. Richardson¹
¹North Carolina State University, Crop Science Department, Raleigh, NC
²North Carolina State University, Applied Ecology Department, Raleigh, NC
- 3:20 pm **The Challenges and Techniques of Managing Monoecious Hydrilla in Flowing Water Systems**
Justin J. Nawrocki and Robert J. Richardson
North Carolina State University, Crop Science Department, Raleigh, NC
- 3:40 pm **Integrated Management of Waterhyacinth (*Eichhornia crassipes*) (Student Presentation)**
Samantha Sardes¹, Lyn A. Gettys¹, Carl J. Della Torre III¹, Carey Minter², and Philip Tipping²
¹University of Florida, Ft Lauderdale Research and Education Center, Davie, FL
²U.S. Department of Agriculture, Agriculture Research Service, Invasive Plants Research Laboratory, Davie, FL
- 4:00 pm **Monitoring and Research Advancements of Invasive Milfoil Control**
Eddie J. Heath¹, Michelle Nault², John Skogerboe³, and Tim Hoyman¹
¹Onterra LLC, De Pere, WI
²Wisconsin Department of Natural Resources, Green Bay, WI
³Retired - U.S. Army Corps of Engineers, Engineer Research and Development Center, Lake Elmo, MN
- 4:20 pm **Correlation of Hydroacoustic Biovolume Estimation to Submersed Plant Biomass (Student Presentation)**
Andrew Howell and Robert J. Richardson
North Carolina State University, Crop Science Department, Raleigh, NC
- 4:40 pm **Factors Affecting Curlyleaf Pondweed Frequency of Occurrence and Relative Density in Managed and Unmanaged Systems: An Analysis of Results from 60 Lakes**
Raymond M. Newman and Adam R. Kautza
University of Minnesota, Department of Fisheries, Wildlife, and Conservation Biology, Saint Paul, MN

- 5:00 pm **The Effects of Organic Matter Content, Nitrogen, and Phosphorus on Growth of Illinois Pondweed**
(Student Presentation)
Jonathan R. Gosselin and William Haller
University of Florida, Agronomy Department, Center for Aquatic and Invasive Plants, Gainesville, FL
- 5:20 pm **Adjourn General Session**
- 6:00 pm **Awards Banquet Reception** *(Center Concourse)*
- 7:00 pm **Awards Banquet** *(Pantlind Room)*

Wednesday, July 20

Wednesday's Agenda-at-a-Glance

- 7:00 am - 8:00 am Continental Breakfast *(Ambassador Ballroom East)*
- 7:00 am - 10:00 am Exhibits Open *(Ambassador Ballroom East)*
- 7:00 am - 10:00 am Posters Open *(Ambassador Ballroom East)*
- 7:30 am - 12:00 pm Registration *(Crown Foyer – Ambassador Ballroom)*
- 8:00 am - 12:35 pm Session V – General Presentations and Updates *(Ambassador Ballroom West)*
- 9:40 am - 10:00 am Refreshment Break *(Ambassador Ballroom East)*
- 10:00 am - 12:00 pm Poster and Exhibit Breakdown *(Ambassador Ballroom East)*
- 12:45 pm - Student Tour Begins
- 1:15 pm - 5:00 pm APMS Board of Directors Meeting *(Grandview Room)*

Session V – General Presentations and Updates

8:00 am - 12:35 pm

Ambassador Ballroom West

Moderator: Dr. John H. Rodgers, Jr. - APMS Vice President, Regional Chapters Committee Chair
Clemson University, Department of Forestry and Environmental Conservation, Clemson, SC

- 8:00 am **PROCELLACORT™ – A Novel Herbicide Technology in Development for Aquatic Plant Management**
Mark A. Heilman
SePRO Corporation, Carmel, IN
- 8:20 am **Mesocosm Evaluations on Hybrid Milfoil from Three Wisconsin Lakes**
Ryan M. Wersal¹, Scott M. Provost², Brenda Nordin³, and Bill Ratajczyk⁴
¹*Lonza, Alpharetta, GA*
²*Wisconsin Department of Natural Resources, Wisconsin Rapids, WI*
³*Wisconsin Department of Natural Resources, Green Bay, WI*
⁴*Lonza, Jackson, WI*
- 8:40 am **Vegetative Reproductive Ability of Crested Floating Heart (*Nymphoides cristata*)**
Lyn A. Gettys, Carl J. Della Torre III, and Kyle Thayer
University of Florida, Ft Lauderdale Research and Education Center, Davie, FL
- 9:00 am **Strategic Management of Aquatic Weeds in New Zealand**
Paul D. Champion
National Institute of Water and Atmospheric Research, Hamilton, New Zealand
- 9:20 am **Eradicating Aquatic Weeds - Success and Progress**
Deborah E. Hofstra¹, John S. Clayton², and Paul D. Champion²
¹*National Institute of Water and Atmospheric Research, Freshwater and Estuaries Centre, Hamilton, New Zealand*
²*National Institute of Water and Atmospheric Research, Hamilton, New Zealand*
- 9:40 am **Refreshment Break** *(Ambassador Ballroom East)*

- 10:00 am **Evaluation of EcoAnalytics and Canopeo: Tools to Assist with Aquatic Plant Surveys and Impacts of Herbicide Treatments**
Dean Jones¹, Ryan Moore², and Michael D. Netherland³
¹*University of Florida, Center for Aquatic and Invasive Plants, Lake Alfred, FL*
²*Gator Creek Technologies, LLC, Lakeland, FL*
³*U.S. Army Engineer and Research Development Center, Environmental Laboratory, Gainesville, FL*
- 10:20 am **Total Lake Vegetation Mapping Utilizing Sonar Plus Other Sensing Technologies**
Steve T. Hoyle, Andrew Howell, and Robert J. Richardson
North Carolina State University, Crop Science Department, Raleigh, NC
- 10:40 am **Data Deluge from Automated Sensors: A Problem for Aquatic Plant Management or an Opportunity?**
Ray D. Valley
Navico (BioBase), Digital Marine Division, Minneapolis, MN
- 11:00 am **The Potential for Cryptic Taxa in Aquatic Systems**
Syndell Parks
GenPass LLC, Muskegon, MI
- 11:20 am **Effective Management of Starry Stonewort**
Ben E. Willis and West M. Bishop
SePRO, SePRO Research & Technology Campus, Whitakers, NC
- 11:40 am **Sediment and Nutrient Reduction Using Bacteria**
Clarence E. Timmer¹ and Trace Wolfe²
¹*Aquatic Vegetation Control, Incorporated, Port Saint Lucy, FL*
²*Clear Waters, Incorporated, New Smyrna Beach, FL*
- 12:00 pm **APMS Regional Chapters: An Update on Key Initiatives within Each Region**
John H. Rodgers, Jr., Moderator

Western	South Carolina	Midwest	Florida
Texas	Northeast	MidSouth	
- 12:35 pm **Wrap-up and Adjourn 56th Annual Meeting**
- 1:15 pm **APMS Board of Directors Meeting** (*Grandview Room*)

2016 APMS Officer and Director Nominees

The following persons have been selected by the Nominating Committee for consideration to serve on the APMS Board of Directors. The Nominating Committee suggests a slate of candidates for positions that are about to come open on the Board. Each candidate must meet specific criteria set forth in the APMS Bylaws. The Board of Directors has approved the slate and now active members will vote for new Officers and Directors at the Annual Business Meeting scheduled for Monday, July 18, in Grand Rapids.

2016 Slate of Nominees for APMS Officers and Directors



Vice President	Mr. Craig Aguillard
Editor	Dr. Jason Ferrell
Secretary	Mr. Jeffrey Schardt
Director	Dr. Scott Nissen
Director	Mr. Todd Olson

Mr. Craig Aguillard—Vice President

Craig Aguillard graduated from Louisiana State University with a Bachelor's of Science in Agronomy, with a focus on crop production and soil management in 1982. After graduating from LSU, Craig worked as a field salesman for Bell Chemical. Following this, Craig was employed by Pennwalt Corporation, currently known as UPI. In this position, his focus was on promoting and selling row crop and aquatic products. His territory included southern states from Texas to the Carolinas. From 2009 to the present, Craig has been the Aquatic Market Segment Leader for Winfield Solutions. As the aquatic market segment leader at Winfield, he is responsible for developing treatment recommendations to manage algae, weeds and other conditions in lakes and ponds. He is also responsible for direct sales in Louisiana, Mississippi, Alabama and Georgia. Current affiliations include: Aquatic Plant Management Society (APMS) – served as a BOD member and is currently the Sponsorship and Exhibit Committee Chair; MidSouth Aquatic Plant Management Society – served as Director, President, and is currently the Treasurer; Texas Aquatic Plant Management Society; Louisiana Vegetation Management Association; and the Aquatic Ecosystem Restoration Foundation (AERF).

Dr. Jason Ferrell—Editor

Jason Ferrell received his B.S. and M.S in Plant and Soil Sciences at the University of Kentucky in 1998 and 2000, respectively. He received his Ph.D. degree in crop science in 2003 from the University of Georgia. Dr. Ferrell joined the University of Florida in 2004 as an Assistant Professor, with an appointment of 65% extension and 35% research. Dr. Ferrell was promoted to Associate Professor and Professor in 2009 and 2014, respectively. Dr. Ferrell is an active member of Aquatic Plant Management Society, Southern Weed Science Society, Weed Science Society of America, and numerous other state and regional societies. He has served as Editor for the *Journal of Aquatic Plant Management* since 2013. He has published over 85 articles in refereed journals and has served as Chair for 13 graduate students.

Mr. Jeffrey Schardt—Secretary

Jeffrey Schardt began his career in aquatic plant management in June 1976 with the Florida Department of Natural Resources (DNR) conducting large-scale operational research funded by the U.S. Army Corps of Engineers on grass carp stocking rates, feeding preferences and telemetry. During his 39-year tenure

with DNR, the FL Department of Environmental Protection, and the FL Fish and Wildlife Conservation Commission, Schardt initiated Florida's aquatic plant control permitting program and annual invasive plant inventories. He developed funding and control priority systems as well as monitoring, compliance, and reporting programs as administrator of the invasive aquatic plant management program conducted in Florida's 460 public lakes and rivers covering 1.25 million acres. Mr. Schardt worked in collaboration with the University of Florida, Florida science teachers, and APMS to produce outreach materials, classroom curricula, and teacher training related to invasive aquatic plants and their management. He has authored and co-authored 70 articles on aquatic plant management, was tendered in state and federal courts as an expert witness, and has advocated on the importance of aquatic plant management before FL Legislative and U.S. Congressional Committees. Schardt was a Director (1995-1997) and President (2000) of the Florida Aquatic Plant Management Society; was nominated by APMS and served on the federal Invasive Species Advisory Committee (2004-2009); served on the APMS Board from 2001-2006, (President in 2006); and has served as the APMS Secretary from 2009 to present.

Dr. Scott Nissen—Director

Scott Nissen received his Ph.D. from Montana State University in 1986 and began his academic career at the University of Nebraska-Lincoln. In 1995, he accepted a position at Colorado State University, where he is now a professor of Weed Science working in non-crop integrated weed management. Dr. Nissen has an extension/research appointment and conducts laboratory, greenhouse and field research on a variety of topics including rangeland, riparian, and aquatic weed management. Dr. Nissen began his aquatic plant management program in 2006, conducting some of the first research with imazamox for Eurasian watermilfoil control. Much of his current research focuses on understanding herbicide absorption, translocation and metabolism in important aquatic weeds.

Mr. Todd Olson—Director

Todd Olson is responsible for providing land, wetland, and lake management services at Aquatic Vegetation Control, Inc. Mr. Olson holds a B.S. in Fisheries and Wildlife and has twenty-five years of progressive responsibilities in lake management, vegetation management, and wildlife management. Work experience includes fisheries biologist and consultant, installations and service consultant for lake aeration systems, and management of 142 freshwater lakes and brackish lagoons for a 4,700-acre coastal community. In this capacity, he also coordinated the management of wildlife species within preserve areas. He currently serves as the Chief Marketing Officer at Aquatic Vegetation Control, Inc. overseeing contracts, sales, research and development. In addition, Mr. Olson serves as the Florida Operations Director working with a team of 65 employees to provide vegetation management services, mitigation creation/maintenance, lake management, forestry and right-of-way maintenance.



Proposed Bylaws Change Requiring Membership Vote

The APMS Board of Directors occasionally receives requests for funding, sometimes in excess of several thousand dollars. These requests can be complex, requiring considerable time or additional data for deliberation. Accordingly, the Board is proposing the creation of an additional Standing Committee to vet proposals for APMS funding of \$5,000 or more to make recommendations to the Board. This Committee will not evaluate proposals for the Graduate Student Research Grant that has specific scientific and operational review representation from each Regional Chapter.

The Board is offering the following amendment to the APMS Bylaws adding the Proposal Review Committee as number 12 and renumbering subsequent Committees in Article XIII. This proposed amendment requires a vote by the Membership at the July 2016 Annual Business Meeting in Grand Rapids.

Article XIII. Committees and Representatives

12. Proposal Review Committee

This Committee shall be responsible for reviewing all proposals submitted to the Society equal to or in excess of \$5,000, excluding proposals for the Society's Graduate Student Research Grant. The Committee shall consist of the Immediate Past President, President Elect, Treasurer, one Director, and one member at-large. The Committee will be chaired by the Immediate Past President who will appoint the Director and member at-large. Upon review of each proposal, the Committee will submit a written recommendation with justification to the Board for final decision.

Meeting Sponsorship and Exhibitors

Would you like to be a Meeting Sponsor and assist the APMS in conducting an informative and successful meeting for the education, scientific, and operational advancement of aquatic plant management? Information on sponsorship and exhibiting at the annual meeting is available on the APMS website (apms.org) or contact Craig Aguillard (phone: (337) 290-1096; email: caguillard@landolakes.com). This will be a great meeting in a great venue, so plan to attend and bring your family.

Seeking Raffle and Silent Auction Donations for Student Initiatives

The Scholastic Endowment would like to remind our generous Members, Vendors, Exhibitors, Applicators, and others that we will be contacting you soon to ask for your continued support. At last year's meeting in Myrtle Beach, we were very fortunate to have excellent raffle and silent auction donations from our membership. A Microsoft Surface Laptop, Smart TV, GoPRO, spray equipment, and high-end coolers were just some of the great items donated. These generous and desirable prizes were essential to attracting the impressive number of raffle ticket sales from meeting attendees, which meant more money for the APMS Scholastic Endowment, and we THANK YOU! We would love to see a repeat this year in Grand Rapids! If anyone has any questions in the meantime or would like to contact the Scholastic Endowment Chair, please contact:

Tom Warmuth of BioSafe Systems

twarmuth@biosafesystems.com or call 336-402-4449

APMS Sustaining Membership

The Aquatic Plant Management Society is grateful for our Sustaining Members whose generous annual contributions sponsor our most important core values, especially education and outreach initiatives. Sustaining Membership costs \$500 and includes membership privileges for one designated representative; subscription to the [Journal of Aquatic Plant Management](#), [APMS Newsletters](#), and access to social media content; quarterly issues of [Aquatics](#) magazine; recognition as a Sustaining Member in Newsletters, the Annual Meeting Program, and on the APMS website. Please read about [APMS Sustaining Members](#) and learn more about them by visiting their websites.

Please join APMS as a Sustaining Member at apms.org/society/membership/

2016 Sustaining Members

- Alligare, LLC
- Applied Aquatic Management, Inc.
- Aqua Services, Inc.
- AquaTechnex, LLC
- Aquatic Control, Inc.
- BioSafe Systems, LLC
- Brewer International
- Chem One Ltd.
- Clarke Aquatic Services, Inc.
- Crop Production Services
- Cygnet Enterprises, Inc.
- Duke Energy
- Lake Restoration, Inc.
- Lee County Hyacinth Control District
- Lonza Water Treatment
- Nufarm Americas
- Pond Boss PRO
- Santee Cooper
- SePRO Corporation
- Syngenta
- UPI
- Vertex Water Features

APMS Chapter and Related Annual Meetings

Date	Meeting	Location
2016		
August 21-25	American Fisheries Society	Kansas City, MO
September 7-8	California Aquatic Weed School	UC Davis, CA
September 12-14	MidSouth Aquatic Plant Management Society	Baton Rouge, LA
October 5-7	South Carolina Aquatic Plant Management Society	Springmaid Beach, SC
October 17-20	Florida Aquatic Plant Management Society	Daytona Beach, FL
November 1-4	North American Lake Management Society	Banff, Alberta, Canada
TBA	Texas Aquatic Plant Management Society	
2017		
January 9-11	Northeast Aquatic Plant Management Society	Portsmouth, NH
February 6-9	Weed Science Society of America	Tucson, AZ
Feb 27 - Mar 1	Midwest Aquatic Plant Management Society	Milwaukee, WI
July 16-19	Aquatic Plant Management Society	Daytona Beach, FL

Training and Education Opportunities

California Aquatic Weed School September 7-8, 2016

Registration is open for the 2016 Aquatic Weed School scheduled for September 7-8, 2016 at the Bowley Plant Science Teaching Center on the UC Davis campus. The Aquatic Weed School is an intensive two-day course focusing on developing weed management strategies in a variety of aquatic ecosystems. The course provides an opportunity for those involved in consulting, research, and management of aquatic weed systems in the western U.S.

to efficiently update their understanding of aquatic weeds and interact with experts in this field. The registration fee is \$455.00 if received by 8/7/2016 and \$555 if received after 8/7/2016. More information is available at http://wric.ucdavis.edu/events/aquatic_weed_school_2016.htm. A total of 12.5 hours of CEUs will be offered.



Graduate Student Opportunity - Management of Urban Lakes - Portland State University

The Center for Lakes and Reservoirs at Portland State University (PSU) and the Lake Oswego Corporation (LOC) announce the availability of a graduate student position focused on management of urban lakes. The graduate student will be enrolled in a masters degree program in the Environmental Science and Management Department or a doctoral degree program in the School of the Environment at PSU.

The graduate student will conduct routine water quality monitoring on Oswego Lake, a 415-acre, private, urban lake in the City of Lake Oswego, Oregon. The lake is located approximately eight miles south of the PSU campus. The lake is eutrophic with a history of cyanobacteria blooms. In addition to the routine sampling the student will conduct research on nutrient dynamics in the lake and surrounding watershed aimed at further improving water quality in the lake. Potential studies include quantifying nutrient loading from rooftops and lawns surrounding the lake and studying internal P-loading from sediments. Additional studies could also be developed depending on student interest and degree program.

The student will be an employee of the LOC for 20 hours/week at a rate of \$15-\$17/hr. Tuition support will be provided by PSU. The student will be responsible for fees associated with enrollment at PSU. The position is available immediately after admission to the graduate program. Please review the requirements for application to the masters program at www.esm.pdx.edu, and information on admission to the doctoral program at www.pdx.edu/environment/degree-programs-0. Ideally, the student would be available to start fieldwork in the summer of 2016 and begin coursework in the fall of 2016; however, later start and admission dates may also be possible. For additional information about the opportunity please contact Mark Sytsma at PSU (mark.sytsma@pdx.edu) or Mark Rosenkranz at LOC (mark.rosenkranz@lakecorp.com). For further information on the Center for Lakes and Reservoirs please visit www.pdx.edu/center-for-lakes-and-reservoirs/.

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National and Regional Weed Science Societies Comment on EPA's Proposed Herbicide Resistance Management Plan

The Weed Science Society of America (WSSA), Aquatic Plant Management Society (APMS), Northeastern Weed Science Society (NEWSS), North Central Weed Science Society (NCWSS), Southern Weed Science Society (SWSS), and Western Society of Weed Science (WSWS) submitted comments on EPA's proposed herbicide resistance management plan, which was first proposed as part of the dicamba-tolerant cotton and soybean registrations. EPA's proposal presents a significant change in how resistance is monitored, mitigated and communicated to weed management stakeholders. One of our concerns was that this proposal was included as part of the proposed dicamba registration and not as a separate Pesticide Registration (PR) Notice by itself. However, just as the dicamba registration comment period was closing, EPA did issue a separate PR Notice for the Resistance Management Plan (see next story below).

While the National and Regional Weed Science Societies complimented EPA on these proactive resistance management measures, we provided many suggestions and recommendations on how to improve the plan. It will be important for EPA to communicate to the weed management community what their expectations are for the plan, how much it will cost to implement, and how will success (and failure) be measured. In addition, we consider the plan a first iteration that will need adaptation and evolution with our experience with it. The comments are at: <http://wssa.net/wp-content/uploads/Weed-Science-Societies-Comments-on-EPA-11-element-Resistance-Mgmt-Plan.pdf>

EPA Issues Draft Guidance on Managing Pesticide Resistance

On June 2, EPA made available for a 60-day comment period two draft Pesticide Registration Notices (PR Notices) that are aimed at combating pesticide resistance. The first PR Notice (PR Notice 2016-X) is titled "[Draft Guidance for Pesticide Registrants on Pesticide Resistance Management Labeling](#)" and the second PR Notice (PR Notice 2016-XX) is titled "[Draft Guidance for Herbicide Resistance Management Labeling, Education, Training, and Stewardship](#)."

To address the growing issue of resistance and preserve the useful life of pesticides, EPA is beginning to embark on a more widespread effort that is aimed at combating and slowing the development of pesticide resistance. The release of these two PR Notices will allow EPA to communicate and seek comment on potential strategies to combat pesticide resistance.

Draft [PR Notice 2016-X](#), which revises and updates [PR Notice 2001-5](#), applies to all conventional agricultural pesticides (*i.e.*, herbicides, fungicides, bactericides, insecticides and acaricides). The updates in PR Notice 2016-X focus on pesticide labels and are aimed at improving information about how pesticide users can minimize and manage pest resistance. Updates fall into the following three categories: (1) additional guidance to registrants and a recommended format for resistance-management statements or information to place on labels; (2) references to external technical resources for guidance on resistance management; and (3) instructions on how to submit changes to existing labels in order to enhance resistance-management language.

Draft [PR Notice 2016-XX](#), which only applies to herbicides, communicates EPA's current thinking and approach to address herbicide-resistant weeds by providing guidance on labeling, education, training, and

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stewardship for herbicides undergoing registration review or registration (*i.e.*, new herbicide actives, new uses proposed for use on herbicide-resistant crops, or other case-specific registration actions). It is part of a more holistic, proactive approach to slow the development and spread of herbicide-resistant weeds and prolong the useful lifespan of herbicides and related technology.

To view and provide comments on these draft Pesticide Registration Notices and any supporting material, please visit [EPA-HQ-OPP-2016-0242](https://www.epa.gov/pesticide-registration/pesticide-registration-notices-2016-0242) for PRN 2016-X and [EPA-HQ-OPP-2016-0226](https://www.epa.gov/pesticide-registration/pesticide-registration-notices-2016-0226) for PRN 2016-XX.

The comment period for each closes on August 2, 2016. In the future, EPA plans to evaluate other types of pesticides (*e.g.*, fungicides, bactericides, insecticides, and acaricides) to determine whether and what guidance may be appropriate for these types of pesticides.

Weed Science Societies Comment on EPA's Proposed Tank Mix Prohibitions

The National and Regional Weed Science Societies also commented on the tank mix prohibitions proposed by EPA for two herbicide registrations: 1) dicamba-tolerant cotton and soybean; and 2) halauxifen-methyl. The comment period for both registrations closed at the end of May.

The National and Regional Weed Science Societies are very concerned about the proposed tank mix prohibition due to EPA "uncertainty" on tank mix synergism effects on non-target organisms. EPA's proposed tank mix prohibition is a direct divergence from the guidelines proposed in [the National Research Council \(NRC\) report on "Assessing Risks to Endangered and Threatened Species from Pesticides"](#). In the opening comments of the section of this report dealing with pesticides mixtures, the authors wrote: "The toxicity of a chemical mixture probably will not be known, and it is not feasible to measure the toxicity of all pesticide formulations, tank mixtures, and environmental mixtures. Therefore, combined effects must be predicted on the basis of models that reflect known principles of the combined toxic action of chemicals". The 2013 NRC report, which is the gold standard for how EPA and the Fish and Wildlife Service are supposed to make endangered species assessments, emphasizes that the complexity of assessing the risk posed by chemical mixture (*i.e.* tank mixing herbicides) "**should not paralyze the process**".

The National and Regional Weed Science Societies communicated our objections and concerns to this prohibition because it is counterproductive for herbicide resistance management, will result in significant economic costs to growers, will increase the carbon-footprint associated with weed management, and could, frankly, be ignored by many practitioners. The comments are at: <http://wssa.net/wp-content/uploads/Weed-Science-Societies-comments-on-dicamba.pdf> and <http://wssa.net/wp-content/uploads/Weed-Science-Societies-comments-on-Halauxifen-methyl.pdf>

FY 2017 Aquatic Plant Control Funding

The Senate Energy and Water Appropriations Subcommittee recommendation for aquatic plant control funding in FY 2017 initially included \$9 million in their first markup in March, despite the Army Corp of Engineers not requesting any funding once again. Within the \$9 million in funding from the Senate, \$4 million was for the Aquatic Plant Control Research Program (APCRP), another \$4 million was for the watercraft inspection stations, as authorized by section 1039(d) of the [Water Resources Reform and Development Act \(WRRDA\) of 2014](#), and \$1 million was for monitoring and contingency planning associated with watercraft inspection stations as authorized by section 1039(e) of WRRDA. In addition, the Senate

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subcommittee report stated that “the Corps of Engineers is encouraged to support cost-shared aquatic plant management programs”. When WRRDA was passed in 2014, it authorized \$20 million for APCRP and \$20 million for the watercraft inspection station provisions in the northwestern United States.

The House and Senate both passed the Energy and Water Development and Related Agencies Appropriations Act, 2017 (H.R.2028) in May, albeit with several changes to aquatic plant control funding. In the House version of H.R. 2028, there are only \$4 million for the watercraft inspection stations. In the Senate version of H.R. 2028, there are only \$4 million for APCRP. Needless to say, the National and Regional Weed Science Societies will support the Senate version over the House version, but we’d rather see both programs receive \$4 million like they did in the FY 2016 appropriations.

During the floor debate in the Senate on H.R. 2028, an amendment by Sen. John Hoeven (ND) that would have blocked the EPA and Army Corps of Engineers WOTUS rule was defeated by a 56-42 vote. They needed 60 votes to invoke cloture and pass the amendment. The amendment also would have blocked EPA’s Interpretive Rule, which narrowed an agricultural exemption for farmers and ranchers under the Clean Water Act.

Supreme Court Says Landowners Can Challenge Feds in CWA Permit Determinations

On May 30, the Supreme Court ruled unanimously against the government in a case deciding when landowners can challenge certain decisions about water permits in court. The case, *Army Corps of Engineers v. Hawkes Co. Inc.*, centers on a North Dakota peat mining company that wants to challenge a government determination that its mining plans would require costly Clean Water Act permits.

The broader issue in the case was whether the Army Corps of Engineers’ “jurisdictional determinations” about whether permits are required represents “final agency actions” that can be challenged in court. Property rights advocates and industry contend that landowners should be able to contest those decisions in court; the government disagrees.

Chief Justice John Roberts wrote the court’s opinion, finding that a jurisdictional determination approved by the Corps is indeed a “final agency action” that is subject to judicial review. The justices seemed skeptical of the government’s position when they heard oral arguments in the case in March.

It’s the latest wetlands case the Obama administration has lost in recent years. In 2012, the high court ruled 9-0 against the government in another important case where property owners sought to challenge U.S. EPA enforcement actions in court. [Click here](#) to read the Supreme Court opinion.

“NPDES Fix” Bill Passes House for 3rd Time in 5 Years

On May 24, the House passed H.R. 897, the Zika Vector Control Act (formerly the Reducing Regulatory Burdens Act- aka the “NPDES Fix” bill) by a vote of 258-156. This version of H.R. 897 contains the same language as the original legislation, but includes a 2-year sunset provision that we are opposed to. The Roll Call on Final Passage of H.R. 897 is at: <http://clerk.house.gov/evs/2016/roll237.xml>

The Zika Vector Control Act is now included in H.R. 2577, which also includes the Military Construction and Veterans Affairs Appropriations Bill as well as the Zika Response Funding bills. The Senate also has

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passed their version of H.R. 2577; however, it does not include the Zika Vector Control Act because they did not vote on it. The House and Senate are expected to go to conference on the bill to work out their differences during the week of June 13.

The six National and Regional Weed Science Societies joined over 100 other organizations in the following letter to the House and Senate Conferees:

Dear Representative/Senator,

On behalf of the over one hundred undersigned organizations, we urge your support for the inclusion of H.R. 897, the Zika Vector Control Act, in any final conference agreement for H.R. 2577. We also request that the sunset provision for H.R. 897 be removed as significant public health threats from mosquito borne diseases are likely to remain well beyond 2018.

For almost forty years, the Environmental Protection Agency (EPA) and pesticide applicators including public health agencies charged with mosquito control operated exclusively under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). In fact, EPA has testified to the adequacy of FIFRA's comprehensive regulatory requirements including substantial enforcement mechanisms in pursuit of that goal.

However, a 2009 activist-inspired lawsuit resulted in a federal court decision identifying a technicality in the law that Congress had not properly clarified its intent that FIFRA should have preeminence over the Clean Water Act (CWA). This decision resulted in pesticide users being required to obtain a CWA National Pollutant Discharge Elimination System (NPDES) permit. These permits were originally created to address the discharge of waste by major industrial polluters, but now are mandated for mosquito control districts and others who are intentionally introducing EPA-authorized pesticides into the environment for their beneficial purposes of trying to prevent or control the spread of public health disease in the U.S.

Though the NPDES permit burden lacks any additional environmental benefit under these circumstances, it does force substantial costs on thousands of small application businesses and farms, as well as the municipal, county, state and federal agencies responsible for protecting natural resources and public health. Further, and most menacing, the permit exposes all pesticide users – regardless of permit eligibility - to the liability of CWA-based citizen law suits. In a number of instances, applicators -- that once conducted mosquito abatement applications for local governments and homeowner associations -- can't afford the costs or risk of frivolous litigation that accompanies NPDES PGPs and have refrained from conducting public health applications.

H.R. 897, which is a provision included in the House passed version of H.R. 2577, would clarify Congressional intent that federal law does not require this redundant permit for already regulated pesticide applications.

In the 112th Congress, similar legislation (H.R. 872) passed the House Committee on Agriculture and went on to pass the House of Representatives on suspension. In the 113th Congress, the legislation (H.R. 935) passed both the House Committees on Agriculture and Transportation & Infrastructure by voice vote, and

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again, the House of Representatives. Now the bill, referred to as the Zika Vector Control Act, has passed the Committee on Agriculture and the House of Representatives yet again. With your help and support, it will soon become law.

Under these circumstances, requiring NPDES permits impacts the use of critical pesticides in protecting human health and the food supply from destructive and disease-carrying pests, and in managing invasive weeds to keep open waterways and shipping lanes, to maintain rights of way for transportation and power generation, and in preventing damage to forests and recreation areas. The time and funds expended on redundant permit compliance drains public and private resources. All this for no measureable benefit to the environment. We urge you to eliminate this unnecessary, expensive, and duplicative regulation by ensuring the Zika Vector Control Act, minus any sunset provision, remains in any final conference agreement for H.R. 2577.

EPA Inspector General Investigating Herbicide Resistance

The EPA's Office of Inspector General (OIG) has launched an evaluation of how effective the agency is at delaying or preventing the spread of herbicide resistance weeds. While this evaluation was not part of [EPA OIG's original FY 2016 annual work plan](#), my understanding is that it is a logical offshoot of an EPA-OIG evaluation of the Office of Pesticide Programs' [Genetically Engineered Corn Insect Resistance Management Program which they just completed on June 1](#). I had a very pleasant interview with the EPA OIG team conducting the herbicide resistance evaluation. The overall objective of the meeting was to obtain external perspectives on federal work to address herbicide resistance, particularly as it pertains to emerging issues and potential opportunities for improvement. The OIG team asked many excellent questions about herbicide resistance, including:

- Please discuss your perspective on federal regulation of GE crops and herbicides.
 - Do you have any opinion on or knowledge of the coordination and interactions between FDA, USDA, and the EPA on GE crops?
 - How well do you feel federal regulators work with and incorporate the perspectives of outside organizations?
 - How well does the regulatory system work to allow farmers and manufacturers to be nimble in adapting to herbicide resistance?
- In your opinion, does the federal community do a good job of managing GE crops and protecting against herbicide resistance?
- What is the extent of the problem of herbicide resistant weeds in agriculture? Please quantify this in financial terms, if possible.
- What are the issues facing in the agricultural community in conveying issues of resistance to federal regulators?
- Please discuss what you see as the greatest challenges facing the agricultural community in herbicide resistance. Are there any instances of resistance emerging in the past about which you can talk, specifically how farmers were affected, how herbicide manufacturers addressed resistance, and what, if any, federal actions were taken in response?
- Please discuss your thoughts on the registration and then withdrawal of Enlist Duo. What were the problems in the registration process? What is the impact of this on farmers?

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- What are the areas where more work is needed or missed opportunities that the federal government should encourage?
- How well do you feel issues of risk are communicated by the federal government when it comes to GE crops and herbicide resistance?

The weed science community has been dealing with many of these herbicide resistance issues for several decades and I would encourage you to share your expertise with the EPA OIG herbicide resistance team if they reach out to you.

Lack of Milkweed is Unlikely to be Driving Monarch Decline

The *Oikos Journal* published a Cornell study online on April 27 titled “[Linking the continental migratory cycle of the monarch butterfly to understand its population decline](#)”. **Abstract:** Threats to several of the world's great animal migrations necessitate a research agenda focused on identifying drivers of their population dynamics. The monarch butterfly is an iconic species whose continental migratory population in eastern North America has been declining precipitously. Recent analyses have linked the monarch decline to reduced abundance of milkweed host plants in the USA caused by increased use of genetically modified herbicide-resistant crops. To identify the most sensitive stages in the monarch's annual multi-generational migration, and to test the milkweed limitation hypothesis, we analyzed 22 years of citizen science records from four monitoring programs across North America. We analyzed the relationships between butterfly population indices at successive stages of the annual migratory cycle to assess demographic connections and to address the roles of migrant population size versus temporal trends that effect changes in habitat or resource quality. We find a sharp annual population decline in the first breeding generation in the southern USA, driven by the progressively smaller numbers of spring migrants from the overwintering grounds in Mexico. Monarch populations then build regionally during the summer generations. **Contrary to the milkweed limitation hypothesis, we did not find statistically significant temporal trends in stage-to-stage population relationships in the mid-western or northeastern USA. In contrast, there are statistically significant negative temporal trends at the overwintering grounds in Mexico,** suggesting that monarch success during the fall migration and re-establishment strongly contributes to the butterfly decline. Lack of milkweed, the only host plant for monarch butterfly caterpillars, is unlikely to be driving the monarch's population decline. Conservation efforts therefore require additional focus on the later phases in the monarch's annual migratory cycle. We hypothesize that lack of nectar sources, habitat fragmentation, continued degradation at the overwintering sites, or other threats to successful fall migration are critical limiting factors for declining monarchs.

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