62 Years

Aquatic Plant News

The Newsletter of the Aquatic Plant Management Society, Inc.
December, 2023 – Issue 134

Hydrilla (Hydrilla verticillata) has invaded this bed of native aquatic plants and is establishing in monoculture – reducing biodiversity, habitat quality, and recreational use of this lake. Photo by Amy L. Giannotti, MS, CLM

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Aquatic Plant Management Society, Inc.
100 Winterberry Lane | Holly Springs, NC 27540

Newsletter Editor, Amy Giannotti

Save The Date!

64th Annual Meeting of the Aquatic Plant Management Society
July 15-18, 2024
Hilton St. Petersburg Bayfront – St. Petersburg, Florida

It is not too early to mark your calendar for the next APMS annual meeting. We would encourage everyone to start considering what skills and expertise you have that could be shared with the aquatic plant management community. The call for Papers is included in this issue and will be announced in the coming months as the abstract submission site is readied.

In the meantime, plans are already in place for a plenary session titled: “Back to the Basics: Control Methods – Past, Present, Future”. Several invited speakers will be joining us as we discuss the various aquatic plant and algae control methods, their development through the years including how they may have been used separately and integrated together, and what the future outlook is for maximizing management outcomes. Excellent participation by our student presenters is expected again this year. Another educational and interesting student tour is also taking shape.

I hope your summer 2024 plans include the Aquatic Plant Management Society. We look forward to seeing you there!

2023-24 Calendar of Events

64th Meeting of the Weed Science Society of America

January 22-25, 2024
Hyatt Regency San Antonio
San Antonio, TX
https://wssa.net/current-annual-meeting/

44th Annual Midwest Aquatic Plant Management Society

February 26-29, 2024
Hyatt Regency
Columbus, OH
https://www.mapms.org/conferences/2024-conference/

Western Aquatic Plant Management Society

March 18-22, 2024
Tropicana Hotel
Las Vegas, NV
https://wapms.org/events

23rd International Conference on Aquatic Invasive Species

May 12-16, 2024
Halifax, Nova Scotia, CANADA
https://icais.org

Aquatic Weed Control Short Course

May 13-16, 2024
Orlando, FL
go.ufl.edu/awcsc

Women of Aquatics (WOA) Update

Women of Aquatics (WOA) is a nonprofit organization that works to connect with, support, inspire, and keep women in the aquatics industry, as it is largely a male dominated field. WOA has been very active in the Aquatic Plant Management Society at national conferences, as well as various regional chapters since 2014, hosting events, lunches, meetings, and happy hours. APMS has a long-standing intention of connecting with other organizations in similar spaces to create unity and growth in active membership of APMS - an effort that WOA consistently supports.

Recently a group of WOA board members attended the 2023 North American Lake Management Society (NALMS) symposium in Erie, Pennsylvania to represent, not only their companies, but also in support of Women of Aquatics. WOA received their first Ocean level annual sponsorship from TIGRIS, allowing us to have a booth at NALMS! I was able to attend under the booth's registration and hold all kinds of encouraging discussions about women in all aquatic fields! Throughout the week I heard endless comments such as 'I am so excited to see representation like this', 'it's about time!', ' we love what you are doing, keep it up!' and so much more. Particularly one conversation that stays in my mind, a woman from a local lake association stopped by the exhibit hall and had a touching conversation. The woman could remember when she couldn't have a credit card in her name, other gender-related restrictions, and all the changes she's lived through to now being in awe of all the women in water science and lake management. She downplayed her abilities, citing that she was just a board member, but I had to remind her she was SO much more and had been working to manage her lake for over 10 years. I would love for her to join us again, we are here for everyone…

NALMS provided a space and promoted a Women of Aquatics breakfast where 20 like-minded ladies gathered to listen and learn more about the organization. The hour was spent introducing WOA and the journey we've been on to grow and expand, as well as getting to know the journeys of women who attended. Participants shared how they entered into the aquatics field, their biggest supporters, experiences they've had along the way, their interests in the future, and where they'd like to see change. Sharing of ideas and stories is a prime example of how we grow and learn from each other in these vulnerable spaces; where we have an interest in common - encouraging each other to join, stay in, and excel in our lives personally and professionally.

From attendees at breakfast and visitors at the booth we were able to raffle off one professional membership and one student membership; awarded to Victoria Theil and Grace Macmahon respectively.

Shortly after NALMS, the board of WOA gathered in Trout Valley, Illinois for a strategic planning weekend which concluded with a celebratory Friendsgiving dinner! This time was focused on reviewing, revising, and updating the strategic plan since its creation in 2017. We dove deep into our mission, vision, and action items to recenter on our ultimate goals and those of our members. Committees were reestablished and the Board is currently inviting those that want to get involved to sign up for one or more committees. Committees include membership, student affairs, editorial, publicity, professional development, retreats, sponsorship, strategic planning, and finance. This is your chance - be the change you're wanting to see in the aquatics field!

Women of Aquatics (WOA) Update

Women of Aquatics is ready to head into 2024 with our members' retreat January 26th - 28th in sunny Tucson, Arizona following the Society of Lake Management Professionals Summit! The itinerary has been built to include several workshops focused on professional advancement, personal growth, and lots of fun! Spots are limited and are on a first come first served basis. Please join us by sending an email to info@womenofaquatics.org. Feel free to share with whomever might be interested, we'd love to include them.

Stay tuned as we release more details and dates for the 2024 plans we have in store!

AQUATIC WEED CONTROL
Short Course

May 13-16, 2024
Orlando, Florida
go.ufl.edu/awcsc

Course Overview

The annual Aquatic Weed Control Short Course is hosted by the University of Florida and brings together nearly 500 applicators, educators, and industry representatives to learn new techniques and refresh core competencies in aquatic and upland weed control. This course focuses on invasive plants and management techniques and provides many networking opportunities for participants to share field experiences and lessons learned.

The Short Course offers continuing education (CEU) sessions and exam preparation sessions. CEUs are offered in Core (general standards; 4 CEUs in 2024) and Category (Aquatics, Rights-of-Ways, Natural Areas, etc.; 16 CEUs in 2024) topics. Participants have the flexibility to move between sessions in order to meet their CEU needs.

Those looking to become FDACS-licensed applicators can attend targeted exam preparation and study sessions in Core, Natural Areas, Right-of-Way and Aquatics during the Short Course. Core and category testing is offered on Thursday afternoon.

Who Should Attend?

The Aquatic Weed Control Short Course is designed to benefit those new to the industry and experienced professionals seeking a comprehensive update. You will benefit from attending this program if you:

- Need Florida Pesticide Applicator CEUs for categories such as:
  Aquatic • General Standards (Core) • Natural Areas • Right-of-Way Forestry • Ornamental and Turf
- Are responsible for aquatic weed control in canals, lakes, golf course ponds, rivers, parks, residential developments and other waterways.
- Are employed by a public agency or private company which is responsible for vegetation management along rights-of-way and in natural areas.
- Are an employee of a manufacturer or a distributor that markets aquatic or vegetation management herbicides.
- Use biological control techniques to suppress weed growth.

Registration Fees and Deadlines

Early (by February 26, 2024): $275 **Regular** (until April 1, 2024): $325
Late (until April 29, 2024): $375

Why Should You Attend?

- Earn up to 20 Florida CEUs in 2.5 days!
- Fully recertify your Florida Aquatic, Natural Areas, or Right-of-Way license
- Get hands-on experience in Aquatic and Upland Plant Identification
- Network with your peers and industry representatives
- Learn new skills and emerging techniques
- Test for new categories or get your first license
- Learn from faculty and experts in the field

Meeting Site and Hotel Information

DoubleTree by Hilton Orlando at SeaWorld
10100 International Drive
Orlando, FL 32821
Block Cut-Off Date: April 21, 2024 or rooms fill
Reduced Aquatic Weed Group Rate: $114 plus applicable taxes (currently 13%) per night. Resort fee and parking are waived! Make your reservation online via the Short Course website or the Hilton Hhonors website (enter "AAW" in the Special Rates section) or call 407-352-1100.
**Note: Do NOT respond to emails from "Conventioneers" offering to reserve your room - this is a SCAM!!!!!*

Questions?

For more information about the Short Course, please visit our website at go.ufl.edu/awcsc and join the mailing list. For logistics questions, please email Bill Torres at billt@flepms.org. For program/content questions, please email Dr. Lyn Gettys at lgettys@ufl.edu

UF | IFAS Extension
UNIVERSITY of FLORIDA

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ANNOUNCEMENT

Michael D. Netherland
APMS GRADUATE STUDENT RESEARCH GRANT

***Subject Matter*:** A graduate student research grant (GSRG) in the area of aquatic plant or algae management or ecology is being offered by the Aquatic Plant Management Society. Co-sponsors of this academic award include regional APMS chapters: Florida, MidSouth, Midwest, Northeast, South Carolina, Texas, and Western.

Objective: Provide a grant for a full-time graduate student to conduct research in aquatic plant or algae management techniques (used alone or integrated with other management approaches) or in aquatic ecology related to the biology or management of regionally or nationally recognized nuisance aquatic vegetation (macrophytes, algae, or cyanobacteria).

Applicants: Solicitation for proposals is open to any full-time faculty member and/or graduate student of an accredited U.S. academic institution. A faculty sponsor must be identified if the application is submitted by a graduate student.

Amount: $40,000 (APMS does not pay overhead or indirect charges).

Duration: Two (2) years ($20,000 per year).

Proposal Deadline: Applications must be received by the APMS GSRG Coordinator no later than May 31, 2024.

Guidelines for Proposals: Proposals should contain a concise statement of the project, including its purpose and justification, as well as sections that discuss study objectives, methodology, schedule, budget, and planned publication of results. The résumé of the faculty applicant and graduate student (if known) should not exceed two (2) pages each. Proposals should not exceed ten (10) pages, and must be signed by the applicant (principal investigator) and an appropriate university official. Include copies or links of your five (5) most recent peer reviewed publications.

Please submit a pdf file of your full application via email to Lyn Gettys, APMS Vice President at: lgettys@ufl.edu

Award: Notification of award will be provided to the faculty member in time to make arrangements to attend the APMS 64th Annual Meeting (July 14-18, 2024 – Hilton St. Petersburg Bayfront, St. Petersburg, FL). Formal announcement of the recipient will be made at the Annual Meeting, with initiation of the grant scheduled for the 2024-2025 academic year. Payments in the amount of $20,000 will be made before January 31st of 2025 and 2026.

Requirements: Semi-annual progress reports must be submitted to APMS prior to June 30th and December 31st for each year of the grant. The faculty member and student must participate in at least one APMS Board of Directors meeting and attend the APMS Annual Meeting. The student must present results of the funded research at least one time over the duration of the grant, although it is preferred that presentations are made annually. Upon completion, a final report must be submitted to APMS.

For more information on the APMS Michael D. Netherland Graduate Student Research Grant
Visit the APMS website: http://www.apms.org

Inquiries: Dr. Lyn Gettys
APMS Vice President
lgettys@ufl.edu

CALL FOR PAPERS

64th Annual Meeting of the Aquatic Plant Management Society

July 15-18, 2024

Hilton St. Petersburg Bayfront – St. Petersburg, Florida

Present Your Original Research

You are invited to submit a title and abstract for the 64th Annual Meeting of the Aquatic Plant Management Society to be held at the Hilton St. Petersburg Bayfront in beautiful St. Petersburg, Florida. Oral and poster presentations are solicited for original research on the biology or ecology of aquatic and wetland plants and algae, control methods (biological, chemical, cultural/physical, mechanical) for invasive, exotic or nuisance plant or algal species, and restoration projects involving wetland or aquatic plants and algae. Presentation of original research will be given preference and should be indicated by including results in the abstract. This year's meeting is in the region of the Florida Aquatic Plant Management Society, so regional presenters are strongly encouraged to submit an abstract.

Oral presentations will be allotted a total of 15 minutes with an additional 5 minutes for questions and discussion. Contributed oral presentations should be scientific or technical in nature, which will be determined from the submitted abstract. All presenters will be required to upload their final PowerPoint presentation to the abstract submission portal prior to the meeting. Note: All presentations that include externally run programs, models or special animation, must be reviewed and approved by the Program Chair prior to the meeting. You will not be allowed to set up a personal computer for your presentation. A poster session will also be scheduled. Free-standing display boards (4' x 4') will be provided for posters.

Plenary Session – Back to the Basics: Control Methods – Past, Present, Future

The society will hold a special session to start the conference discussing the various aquatic plant and algae control methods, their development through the years including how they may have been used separately and integrated together, and what the future outlook is for optimal management outcomes. At the end of the session, each presenter will be available for a panel Q&A. Invited speakers and submitted talks will drive discussions around how weeds and algae are managed with these techniques (pros and cons), management objectives with stakeholder input, and more recent technology development. Abstracts submitted for the special session should be indicated during the abstract submission process.

Students

The society will provide all student presenters with room accommodations and complimentary registration. First, 2nd, and 3rd place prize money will be awarded in separate contests for both oral and poster presentations. In addition, a student tour of local management sites and scenic places is being put together for student enjoyment. Students may contact the Program Chair (Mr. Jeremy Slade; jeremy.slade@sepro.com) or the Student Affairs Committee Chair (Dr. Andrew Howell, awhowell@ncsu.edu) with any questions.

CALL FOR PAPERS
(Continued)

Abstract Submission Information
Abstracts must be submitted on the WSSA abstract system at https://weedscimeetingabstracts.com/. Instructions for abstract submittal are below. The WSSA Title and Abstract Submission System is now active and will remain open until **Friday, May 17, 2024**. Acceptance of contributed papers will not occur until after the abstract deadline and will be confirmed by a separate e-mail.

Logging in to the WSSA System
If you have used this system before, enter your e-mail address and password to sign on to the system. If you cannot remember your password, click "Forgot your password?" to reset the password.

If you do not have an account with the WSSA abstract submission system, click "Register as a new user" and follow the instructions.

Once you are logged in, you will see a list of conferences that are open for Title and Abstract submissions. Click on "My Titles" at the top, and then click on "Create New". You will be prompted to select a conference. Select "2024 APMS" and hit the "Continue" button.

Entering a Title: Type in the title capitalizing key words (e.g., Response of Eurasian and Hybrid Watermilfoil to Five Auxin-mimic Herbicides). Please do not submit your title in bold typeface or all caps. Just capitalize the major words in the title.

Students: Please indicate if you are a student. The society will provide all student presenters with room accommodations and complimentary registration. There will be a contest awarding 1st, 2nd, and 3rd place for both the oral and poster presentations.

Section: Indicate whether you are presenting an oral or poster presentation using the "Type" dropdown menu.

Presenter Biography: Please provide a short biography of the presenting author (200 word maximum).

Abstract: Type or copy the text of your abstract into the abstract box (300 word maximum).

Authors: Be sure to add the full names and contact information of all authors. Please indicate the presenting author with the checkbox. Please enter all authors in the correct order, and the order can be changed by dragging the boxes.

If you have any questions, please contact:
Mr. Jeremy Slade
2024 APMS Program Chair
jeremy.slade@sepro.com

Membership Update

As 2023 is coming to an end, we ask that you keep APMS in mind for membership, participation, and sponsorship in 2024 budgeting decisions. In addition to considering those in your company or organization who would benefit from being an APMS member, we ask our current APMS membership and sponsorship to please consider sharing any contact information that you have for state, local, and federal government decision makers for aquatic plant management activities. Also consider sharing any high school, college, or university programs that educate students on aquatic resource management activities or research.

Our goal is to focus on awareness of who APMS is, benefits of becoming involved in APMS, and highlighting the networking potential with government stakeholders, research updates, and industry leaders. Our conference is a great place for learning and networking. The APMS board of directors can engage and hopefully not only gain some new members, but also be a resource to them in the future. We have seen plenty of changes and challenges in the APM world in 2023. The research and networking that APMS forum provides is invaluable to our industry and the protection of our freshwater resources. Please reach out to at least one connection as holiday seasons are upon us and urge a new membership for APMS.

If you have any connections to share for consideration of official invitations to our society, please reach out to Matthew Johnson (Chair), or communicate with any of our committee members: Amy Giannotti, Amy Kay, Mirella Ortiz Ph.D., Candice Prince Ph.D., Gray Turnage Ph.D., Jeremy Slade, or Brian Isaacs.

Regional Chapter Updates

FAPMS UPDATE

FAPMS Website: https://www.fapms.org

The 2023 FAPMS training conference was held in St. Petersburg from October 16-19 and it was another great success. We had excellent attendance, with 266 registered participants at our 47th annual meeting. In addition to the informative program developed by program chair Ben Sperry, we once again had duck races, a fishing tournament, and a cornhole contest, all of which support FAPMS scholarships.
FAPMS went paperless at the 2023 conference and it went very smoothly! This wouldn't have been possible without tons of work by Jason Cull for running the eventScribe app and by Brett Bultemeier for setting up QR codes for digital CEUs. As always, Jennifer Myers and Stephanie Walters ensured the conference was a success by making sure everyone stayed on task, and we really couldn't do it without them! We thanked outgoing Past-President Lyn Gettys, Editor Amy Giannotti, and Directors Alex Onisko, Jay Ferrell, and Jason Cull for their service, and welcomed Matt Phillips as our new President, Jason Cull as our new President-Elect, and Marshall Snyder, Jake Thayer and Joe Malone as our new Board Members.
Awards given out at the Banquet included:

- Plant Manager of the Year Award: Jennings Lyng
- President's Award: Jeff Holland
- Michael D. Netherland Exemplary Colleague Award: Tim Harris

The next FAPMS conference will be October 7-10, 2024 in Daytona Beach – make plans to join us! For more information, please visit our website at https://fapms.org/

Respectfully submitted by Lyn Gettys, FAPMS Past-President

Jennings Lyng

Jeff Holland

Tim Harris

***FAPMS UPDATE* (continued)**

TAPMS UPDATE

TAPMS Website: http://www.tapms.org

Attendees of the Texas Aquatic Plant Management Society had the opportunity to tour the John Bunker Sands Wetland Center where pickerelweed, arrowhead, smartweed, crested caracara, greater yellow legs, northern shoveler, gadwall, pintail, cattail, bulrush, coyote, raccoon, otter, feral hog, red-shouldered bug and crab spider are just a few of the plants and animals observed by the group.

Dr. Gray Turnage and Brittany Chesser also recently attended and presented at the 16th International Symposium on Aquatic Plants held at the University of Antwerp, Belgium. Both Gray and Brittany serve on the APMS Board of Directors – great to see the international representation!

Dr. Gray Turnage, current APMS BOD, presenting on the Ecology and Management of Cuban bulrush in the United States

Brittany Chesser, current APMS BOD, showing her poster on AquaPlant: A Success Story of an Extension Tool for Aquatic Vegetation Identification and Management

Group photo of all registrants to attend the 16th International Symposium on Aquatic Plants held at the University of Antwerp, Belgium

APMS BOD representation at conference reception

A familiar scene at Gravensteen Castle in Ghent, Belgium

Science Policy Report

December, 2023
By, Lee Van Wychen

Annu Kumari: 2023 – 2024 Weed Science Policy Fellow

Annu is a third-year Ph.D. student at Auburn University, pursuing her doctorate degree with Dr. Andrew Price and co-advised by Dr. Steve Li. Annu's dissertation project is focused on integrating herbicides and cover crops in southeastern production systems to control troublesome weeds. While trained as a weed scientist, Annu is developing skills in cross-functional disciplines as she has a minor in Statistics and Plant Pathology. She received a B.S. in Agriculture, majoring in Agronomy, from CCS Haryana Agricultural University, India. Annu grew up on a small family farm in southern Haryana and engaged in integrated farming practices. She had keenly observed the struggle of small producers to grow a successful crop. Also, while being on a farm, she learned the importance of integrated pest management practices to deliver economically viable yield parameters in a sustainable manner. Her enthusiasm for pest management directed her to pursue her education in the agricultural field with a major in weed science. Annu aims to improve her research and communication abilities to make a meaningful impact in weed science, ultimately working towards sustainable agriculture to tackle the food demands of the growing population. The Science Policy Fellowship gave her a great opportunity to gain substantial leadership experience in public policy and advocacy on a wide array of weed science policy issues. Recently, Annu had a great opportunity to interact with U.S. representatives from Alabama to discuss the importance of research funding, funding for the U.S. Department of Agriculture, the Endangered Species Act, and other science policy topics. Annu is grateful to the WSSA and Science Policy Committee for providing her with this great learning opportunity.

Cynthia Sias: 2023 – 2024 Weed Science Policy Fellow

Cynthia is a third year Ph.D. student at Virgina Tech studying under the direction of Dr. Michael Flessner. Her dissertation research is focused primarily on using cover crops for weed management in soybeans and corn production systems. Prior to her Ph.D. work, she received a B.S. in Agriculture from Cornell University and an M.S. in Agronomy from Texas A&M University. Cynthia is passionate about educating the public about agriculture, and helping farmers overcome challenges year to year. She is grateful for the opportunity to learn how decisions are made in our government, and to understand how that directly impacts farmers. Cynthia is eager to apply what she has learned during this time with the Science Policy Fellowship in hopes of creating more opportunities for farmers to be heard and be a part of the decisions being made.

WSSA Comments on EPA's Vulnerable Species Pilot Project

The EPA has identified 27 pilot species that are classified as either endangered or threatened based on documentation from the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS). EPA did not consult with FWS or NMFS to develop the list, but considers these species have a medium or high overall vulnerability to pesticides. Many thanks to Bill Chism, WSSA Endangered Species committee chair, for his extensive work on WSSA's comments for the vulnerable species pilot project.

Lee Van Wychen, Ph.D. - Executive Director of Science Policy, National and Regional Weed Science Societies
Lee.VanWychen@wssa.net | 202-746-4686

Science Policy Report

[Continued]

EPA's initial set of priority species includes:

- Group of plant species in Lake Wales Ridge area of Florida (including Avon park harebells (Crotalaria avonensis), Garrett's mint (Dicerandra christmanii), wireweed (Polygonella basiramea), scrub blazingstar (Liatris ohlingerae), short-leaved rosemary (Conradina brevifolia), scrub mint (Dicerandra frutescens), Florida ziziphus (Ziziphus celata), and several other species that occur in this area)
- Leedy's roseroot (Rhodiola integrifolia ssp. leedyi)
- **Mead's milkweed (Asclepias meadii)**
- Okeechobee gourd (Cucurbita okeechobeensis ssp. okeechobeensis)
- Palmate-bracted bird's beak (Cordylanthus palmatus)
- White bluffs bladderpod (Physaria douglasii ssp. tuplashensis)
- Madison cave isopod (Antrolana lira)
- Ouachita rock pocketbook (Arkansia wheeleri)
- Rayed bean (Villosa fabalis; freshwater mussel)
- Scaleshell mussel (Leptodea leptodon)
- Winged mapleleaf (Quadrula fragosa)
- Riverside fairy shrimp (Streptocephalus woottoni) and San diego fairy shrimp (Branchinecta sandiegonensis)
- **American burying beetle (Nicrophorus americanus)**
- Poweshiek skipperling (Oarisma poweshiek)
- Rusty patched bumble bee (Bombus affinis)
- **Taylor's checkerspot (Euphydryas editha taylori)**
- Ozark cavefish (Amblyopsis rosae)
- Attwater's prairie chicken (Tympanuchus cupido attwateri)
- Buena vista lake ornate shrew (Sorex ornatus relictus)
- Wyoming toad (Bufo hemiophrys baxteri)

In 2022, Enlist was banned in 11 Arkansas counties because of the American Burying Beetle. A similar "prevention" tactic will be tested next year in Washington and Oregon, but **with a major difference**. In Arkansas, **no critical habitat** had been designated, but it will be in Oregon and Washington for **Taylor's Checkerspot butterfly**. EPA has determined that the appropriate mitigation measure for Taylor's Checkerspot butterfly is to **prohibit all broadcast and aerial spraying of pesticides** in the areas where the butterfly is found. These will be referred to as "Pesticide Use Limitation Areas" or **PULA's**. This will essentially create large areas of Oregon and Washington where pesticides cannot be sprayed. The plan is slated to go into effect next year. Without any changes, it will have a massive impact on pest management in places like Oregon's Willamette Valley.

Weed Science Societies Provide Comments to Improve EPA's "Herbicide Strategy" for Endangered Species Mitigations

Executive Summary- The Weed Science Societies suggest nine additional ways to mitigate the impact of herbicides on listed species due to spray drift, which includes decreased buffers for ultra-coarse droplets, additional types of vegetation to intercept spray droplets and grower education.

We also suggest six additional ways to mitigate herbicide runoff and erosion, which also includes grower education, more specific terminology for agricultural vs specialty crops as well as assigning more compensatory mitigation points for fields with subsurface drainage or cover crop practices.

Most importantly, the Weed Science Societies want to stress that grower education will be the most effective way to implement EPA's Herbicide Strategy. We recommend a minimum of a 3-5 year phase-in period for the herbicide strategy ESA mitigation practices, which

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corresponds to the 3-5 year interval that pesticide applicators must be recertified.

The Weed Science Societies also present the results of a survey of weed scientists from across the country that looked at the 13 crop scenarios for pesticide runoff and erosion mitigation points that the EPA provided, plus 2 additional crop scenarios. Alarmingly, only 2 of the 15 crop production scenarios, or 13%, could obtain the nine runoff/erosion mitigation points considered necessary to maintain existing weed control practices.

We provide additional information on conservation specialists and programs in different states as well as a rationale for why EPA should create a database of the mitigation points needed by crop, pesticide use limitation area (PULA), and herbicide. We also provide suggestions to enhance "Bulletins Live Two!" as well as a list of topics in dire need of research funding so we can best help protect T&E species and their critical habitat.

Finally, we have provided a list of suggested education and training activities to successfully launch the ESA mitigation practices for pesticides.

The Weed Science Societies comments and suggestions to improve **EPA's draft herbicide strategy** for endangered species are at: https://wssa.net/wp-content/uploads/Weed-Science-Society-comments-on-EPA-Herbicide-Strategy_Final.pdf

This was truly a national and regional effort! I'd like to especially acknowledge the members of WSSA's Endangered Species Act Committee for their tireless work on these issues:

- Bill Chism, Chair, WSSA ESA Committee
- Stanley Culpepper, University of Georgia
- Taylor Randell-Singleton, University of Georgia
- Mark VanGessel, University of Delaware
- Sarah Lancaster, Kansas State University
- Aaron Hager, University of Illinois
- Brad Hanson, University of California - Davis
- Cameron Douglass, USDA Office of Pest Management Policy
- Lee Van Wychen, Executive Director of Science Policy, WSSA
- Leah Duzy, Compliance Services International
- Emily Unglesbee, Getting Rid of Weeds (GROW)
- Sarah Chu, Graduate Student Representative, Texas A&M
- Daewon Koo, Graduate Student Representative, Virginia Tech

FIFRA SAP Meets Again on EPA's Use of 11 Atrazine Microcosm/Mesocosm Studies

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Scientific Advisory Panel (SAP) provides independent scientific advice to the EPA on health and safety issues related to pesticides. There are seven permanent positions on the SAP, which is augmented by additional experts who assist in reviews. The FIFRA SAP conducted on August 22-24, 2023 was titled: **"Examination of Microcosm/ Mesocosm Studies for Evaluating the Effects of Atrazine on Aquatic Plant Communities".**

Four of the nine ad hoc members selected for this SAP included the following APMS and WSSA members: 1) **Aaron Hagar**, University of Illinois; 2) **Jay Ferrell**, University of Florida; 3) **John Madsen**, retired USDA-ARS, and 4) **Kurt Getsinger**, US Army Corps of Engineers. They provided excellent review of the 11 atrazine studies in questions.

Science Policy Report

[Continued]

There is an excellent white paper by EPA that presents EPA's reevaluation of 11 atrazine microcosm and mesocosm studies identified by the 2012 FIFRA SAP as warranting further review. These studies are part of EPA's Ecological Risk Assessment of atrazine and are specifically used in assessing the effects to aquatic plant communities. The use of cosm studies in the ecological assessment of atrazine has a long, 20-year history involving multiple SAPs and EPA reviews.

At issue is EPA's use of a 3.4 ppb concentration-equivalent level of concern (CE-LOC) that EPA issued in an interim atrazine registration decision last year. The CE-LOC for atrazine was previously 15 ppb. After EPA issued the 3.4 ppb CE-LOC last year, many stakeholder groups, including WSSA, asked the EPA to conduct this independent FIFRA SAP because they felt the science was not justified to have a CE-LOC that low. The CE-LOC is the atrazine concentration level that triggers required monitoring and/or mitigation to protect aquatic plant communities.

The atrazine SAP is currently deliberating and writing their final recommendations for EPA. Based on the SAP's discussions, most of the 11 atrazine studies did suffer from various flaws and should not be used to calculate a CE-LOC for atrazine. This would likely lead EPA to establishing a higher CE-LOC, thus leading to less atrazine restrictions for corn, sorghum and sugarcane growers and other atrazine users. More info at: https://www.regulations.gov/search?filter=EPA-HQ-OPP-2023-0154

Glyphosate Warning Label in CA Unconstitutional

Nov 7 (Reuters) - A federal appeals court upheld an injunction barring California from requiring businesses to warn consumers that glyphosate, the active ingredient in Roundup weedkiller, causes cancer. In a 2-1 decision, the 9th U.S. Circuit Court of Appeals said it was unconstitutional for California to require Bayer AG's Monsanto unit, which makes Roundup, and some agricultural producers to provide the warning under a state law known as Proposition 65. The court said the warning conveyed the "at best, disputed" message that glyphosate is unsafe, and that requiring objectors to convey a "controversial, fiercely contested message that they fundamentally disagree with" violated the First Amendment.

Annual Cost of Invasive Species Put at Half-A-Trillion Dollars

Invasive species cause more than $423 billion per year in damage to agriculture, fisheries, water supplies, and other ecosystem-dependent benefits worldwide, according to the summary of a comprehensive review by dozens of scientists, released Sep. 4, 2023. The monetary losses, adjusted for inflation, have quadrupled every decade since 1970, the study's baseline, the summary says. The report is the first on the topic from the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, which has 143 member nations. The estimated financial loss is "a huge, huge underestimate," Helen Roy of the UK Centre for Ecology & Hydrology, who co-chaired the group that wrote the report, said in a media briefing; many costs such as weeding invasive plants have not been quantified, she said. More than 3500 species are known to have become invasive after people moved them, intentionally or unintentionally, to new locations where they have crowded out native plants and animals, some of which supported local economies. The number of invasive species is rising faster than ever because increases in global trade and travel help spread them, the summary says. But only 17% of countries have laws or regulations to prevent or manage invasions of these species.

Federal Agency Funding Opportunities

By Steve Young, Jim Kells and Vijay Nandula
Federal departments and agencies with expertise in weed and invasive plant science were brought together at a symposium held during the Weed Science Society of America 63rd Annual Meeting. Individuals from Animal and Plant Health Inspection Service (APHIS), Agricultural Research Service (ARS), National Institute of Food and Agriculture (NIFA), Office of Pest Management Policy (OPMP), Natural Resources Conservation Service (NRCS), US Forest Service (USFS), Bureau of Land Management (BLM), US Geological Survey

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(USGS), National Park Service (NPS), Department of Defense (DOD), Army Corps of Engineers (ACOE), National Aeronautics and Space Administration (NASA), and National Science Foundation (NSF) shared current research and management efforts and participated in a discussion focused on the identification of funding opportunities and other issues pertaining to research gaps and management needs among this society's membership.

Table 1. Funding opportunities for select federal agencies that focus on weeds and invasive plants.

Agency	Program	Notes
ARS	Areawide Pest Management Program	This is an internally funded program at ARS
APHIS	Plant Protection Act Section 7721	Search website
DOD	Strategic Environmental Research and Development Program Environmental Security Technology Certification Program	Link to funding Link to funding
EPA	EPA Grants	Search for weeds and/or invasive plants
NASA	Applied Sciences Program – Agriculture, Ecological Conservation	Browse practitioner resources, including opportunities that links to NSPIRES (NASA Solicitation and Proposal Integrated Review and Evaluation System)
NIFA	Agriculture and Food Research Initiative (AFRI) Crop Protection and Pest Management Methyl Bromide Transition IR-4 Organic Agriculture Research and Extension Initiative Organic Transitions Specialty Crop Research Initiative	Several programs, including inter-disciplinary, in plant health and production categories Link to RFA Link to RFA Link to RFA Search program information Search program information Link to RFA
DOI	Funding Guide for Invasive Species Management	Search program information
NRCS	Conservation Innovation Grants	This program has funded projects on weeds and invasive plants
NSF	Plant Biotic Interactions	A joint program with NIFA that focuses on agricultural species
USFS	Invasive Forest Plants	Requests for applications through the Working with Us link

Each federal department and agency gathered at the symposium support weed and invasive plant science research and/or management through grant funding, technical assistance, and scientific studies. They represent a diversity of stakeholders who may be separated geographically yet have a common focus on weeds and invasive plants in crop, terrestrial, and aquatic ecosystems.

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NISAW 2024 is February 26 – March 3, 2024 in Washington DC.

Planning for the 25th anniversary of National Invasive Species Awareness Week (NISAW) is ongoing. My hope is that all the invasive species stakeholder groups traveling to Washington DC will make establishing an invasive species management fund their #1 priority.

National and Regional Weed Science Society Meetings

Dec. 11 - 14, 2023 North Central Weed Science Society (NCWSS), Minneapolis, MN www.ncwss.org
Jan. 8 - 11, 2024 Northeastern Weed Science Society (NEWSS), Boston, MA www.newss.org
Jan. 22 - 25, 2024 Southern Weed Science Society (SWSS), San Antonio, TX www.swss.ws
Jan. 22 - 25, 2024 Weed Science Society of America (WSSA), San Antonio, TX www.wssa.net
Feb. 26–Mar. 3, 2024, 25th National Invasive Species Awareness Week, Washington DC www.nisaw.org
Mar 4 - 7, 2024 Western Society of Weed Science (WSWS), Denver, CO www.wsweedscience.org
Jul. 14 - 18, 2024 Aquatic Plant Management Society (APMS), St. Petersburg, FL www.apms.org

Sustaining Members

APMS wishes to express our gratitude to our Sustaining Members for their support during the 2023-2024 period. Sustaining Members play a crucial role in the success and sustainability of organizations like APMS.

If you're interested in learning more about what Sustaining Membership entails or if you want to become a Sustaining Member yourself, you can visit the following link for more information: APMS Sustaining Members.

Sustaining Memberships often come with benefits like increased visibility, networking opportunities, and a deeper connection with the organization, so it can be a rewarding partnership for both the organization and its supporters.

Thank you all for your support in 2023-24!

AgroShield has been serving the Agriculture and Aquatic industries since 2015. Our Vodaguard product was developed to cure infections in the upper water column. Vodaguard's unique follow the bloom technology concentrates the cure where it is needed the most. Vodaguard C is a copper sulphate pentahydrate product. Vodaguard O is a sodium percarbonate that becomes hydrogen peroxide when introduced to water. Both products have a patented formulation that allows them to be buoyant for 24 to 36 hours. Reduces manpower, machinery, and un-necessary product which reduces cost. Please visit us at: https://www.agro-shield.com/our-products/algaecides.

Since 1981, Applied Aquatic Management, Inc., (AAM) has provided innovative and effective water management services, selective vegetation control, wetland management and exotic weed control. AAM has clients throughout Florida including developers, homeowners associations, golf courses, mobile
home communities, utilities, local, state and federal government agencies and industry. Our experienced professional staff provides unique knowledge along with advanced equipment to manage all types of waterway, right-of-way, wetland, and upland systems.

AquaTechnex, LLC is a lake and aquatic plant management firm that operates in the Western United States. The company is expert in the use of aerial and boat GIS/GPS technologies to assess aquatic environments. The firm is also expert in the management of invasive aquatic weed species and phosphorous mitigation to suppress toxic cyanobacteria blooms. Our web site is www.aquatechnex.com; please drop by regularly to get news updates as we have moved our blog onto the site.

Sustaining Members

Aquatic Control, Inc. has been managing aquatic resources since 1966. As a distributor of lake management supplies, floating fountain aerators, and diffused aeration systems, Aquatic Control represents all of the major brands of quality supplies and equipment. Aquatic Control has eight offices that offer aquatic vegetation management services including vegetation mapping, application services, fountain and aeration system installation, equipment maintenance, and factory-trained service and warranty repair throughout the Midwest. Harmful Algae Bloom monitoring programs with our in-house laboratory allow us to customize treatment plan design through control of the algae causing taste and odor or toxin production issues.

Aquatic Vegetation Control, Inc. (AVC) is a Florida corporation founded in 1986 offering vegetation management and general environmental consulting services throughout the southeast. Since its establishment as an exotic/nuisance vegetation management company specializing in the control of invasive wetland, aquatic and upland species, AVC has broadened its scope of capabilities to include; certified lake management, fish stocking, re- vegetation, mitigation and restoration services, mitigation monitoring services, aquatic, roadside, forestry and utility vegetation management, and environmental/ecological consulting.

Atlantic-Oase is a proud member of the Oase Group, the global leader of the Water Feature industry. We offer a continuously growing roster of the most respected products in the world. From enchanting Fountain and Water Entertainment systems of every size imaginable, to innovative Formal Spillways, Spouts and WaterWalls, we offer unique products for the hardscape. From the strongest Pond-free Vaults, Eco- Blox and FastFalls to the most advanced filtration products, we satisfy the most demanding landscaper and hobbyist. We also design, build and bring to market the most extensive line of water garden and fountain pumps, along with dependable aeration products, pond accessories and lighting systems.

Black Lagoon advocates for a proactive and integrated approach to waterbody management. We mitigate conditions impacting water quality, land use, ecosystem balance, property value, recreation, and overall aesthetics by implementing technically sound management programs. We establish connected, long-term relationships with our clients to manage the water quality challenges faced by their lakes, ponds, and wetlands…because everybody deserves clean, safe, enjoyable water.

Brewer International is a reputable manufacturer of aquatic and land management adjuvants that has been providing distribution services nationwide for over 40 years, with its headquarters located in Vero Beach, Florida. The company specializes in producing surfactants designed to improve pesticide penetration, wetting, bonding, and drift control. Our products are widely utilized by aquatic and land managers across the country to enhance pesticide uptake, thereby increasing efficiency while reducing the chemical footprint in natural environments. As a family-owned business, Brewer International is committed to producing only the highest- quality products and has consistently invested in product development and manufacturing innovation to provide its distribution partners with the best possible value. We take great pride in our reputation as a reliable partner, providing superior quality products that meet and exceed industry standards.

Chem One is a national leader of Organic Copper Sulfate for aquatic management. With eight standard EPA label grades; Fine 20, 25, 30, 100, 200, Small, Medium and Large. Chem One has a grade to meet every customer's needs. With our corporate offices and 78,000+ square foot warehouse in Houston, Texas, Chem One is a national wholesale company that is certified to ISO 9001, ISO 14001, OHSAS 18001.

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Compliance Services International (CSI) is a leading regulatory consultancy providing innovative solutions for organizations faced with regulatory and environmental challenges. CSI's experienced scientists and regulatory specialists in the USA and the EU provide innovative approaches to solving regulatory and environmental challenges – combining traditional sciences with developing technologies to deliver economically sensible and scientifically sound results.

Cygnet Enterprises, Inc. is a national single source distributor of aquatic management products with offices and warehouses in Michigan, Indiana, Pennsylvania, North Carolina, California and Idaho. Cygnet is proud of its reputation for outstanding service, friendly, knowledgeable staff and our unmatched support of the aquatics industry. Cygnet Enterprises is the only aquatic distributor at the Charter Gold Member level in the Aquatic Ecosystem Restoration Foundation (AERF).

Duke Energy "Building a smarter energy future". Duke Energy (NYSE: DUK), a Fortune 150 company headquartered in Charlotte, N.C., is one of the largest energy-holding companies in the U.S. It employs 30,000 people and has an electric generating capacity of 51,000 megawatts through its regulated utilities, and 3,000 megawatts through its nonregulated Duke Energy Renewables unit. Duke Energy is transforming its customers' experience, modernizing the energy grid, generating cleaner energy, and expanding natural gas infrastructure to create a smarter energy future for the people and communities it serves. More information about the company is available at duke-energy.com. Follow Duke Energy on Twitter, LinkedIn, Instagram and Facebook.

Since 1973, Diversified Waterscapes, Inc. has offered lake management services and ecological products to professional applicators. Our proven field experience in pond and lake cleaning enabled us to develop an eco-friendly line of products that show dramatic results in any aquatic environment. With more than 45 years of experience, we have been providing aquatic treatment products and maintenance service for some of the world's best water features, including the famous Bellagio Fountain in Las Vegas – delivering clearly better results without harming the environment. Our mission is to combine extensive industry experience, mechanical aptitude and scientific knowledge to bring clarity, cleanliness and beauty to water features across the country.

Lake Restoration, located in MN, has specialized in controlling pond weeds, lake weeds, and nuisance algae since 1977. Lake Restoration's product line-up includes: Mizzen, a copper based algaecide, Spritflo and Dibrox herbicides, a variety of pond dyes and nutrient reducers. Lake Restoration also manufactures the TORMADA product application boat, Vitaflume floating fountains, the retractable Goose D-Fence system, and the patented LAKEMAID to eliminate lake weeds automatically.

The Lee County Hyacinth Control District was formed by the Florida Legislature in June 1961to curtail excessive growths of water hyacinth. That same year, water managers from across the state convened in Lee County and formed the Hyacinth Control Society, now APMS, to share control strategies and develop a comprehensive management approach to Florida's most prolific aquatic plant. T. Wayne Miller, Jr. of Lee County served as the Society's President for the first two years and Lee County has been a supporting member of

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APMS since its inception.

Maxunitech is an integrated enterprise focusing on the Research and Development, production, sales of agrochemicals, and relevant intermediates and other fine chemicals. Established in 2000, under the principles of "people oriented, united for innovation and pursue excellence," we have been researching and developing new products, solving commercial issues from the perspective of technology, and fulfilling enterprise value with value added for our clients.

For more than 100 years we've been growing with you, bringing crop protection choices to our supply partners and the growers they serve. Nufarm solutions are developed and manufactured right her in America from three state-of-the-art US manufacturing facilities.

Nutrien Solutions is a full-service vegetation management company, providing innovative solutions and quality products for the aquatic plant management industry. The cornerstone of our success is our highly educated and trained field staff. With strong commitments to environmental stewardship, innovation, and technology, Nutrien Solutions provides customized programs tailored to specific locations throughout the U.S. We are the country's leading vegetation management provider, and we're excited to introduce you to everything Nutrien Solutions has to offer.

SOLitude Lake Management is a nationwide environmental firm committed to providing sustainable solutions that improve water quality, enhance beauty and preserve natural resources. SOLitude's team of aquatic scientists specializes in the development and execution of customized lake, stormwater pond, wetland and fisheries management programs. Services include water quality testing and restoration, algae and aquatic weed control, installation and maintenance of fountains and aeration systems, shoreline erosion control, muck and sediment removal and invasive species management. SOLitude partners with homeowners associations, golf courses, private landowners, businesses and municipalities. For more information, visit SOLitude Lake Management at solitudelakemanagement.com.

Invasive weeds can devastate both natural and commercial habitats. Syngenta provides high performance products to control destructive weeds while helping to restore the habitat of aquatic environments. Syngenta offers proven aquatic herbicides like Reward® and Tribune™ that provide fast burn-down, work well in cool weather and are rainfast in as little as 30 minutes. The active ingredient, diquat dibromide, has been used successfully in sensitive aquatic areas for over 25 years.

UPL NA, Inc. is a premier supplier of crop protection products and technologies designed for the agricultural, specialty, fumigation and aquatic markets. The Aquatics Division is part of the Environmental Solutions group which has manufactured aquatic herbicides and algaecides for the management of lakes, ponds, rivers and irrigation canals for more than 40 years. These products are marketed as Aquathol®, Hydrothol®, AquaStrike®, Current®, Symmetry®, Cascade®, Teton®, and Top Deck™. Most recently the development and commercialization of the ADAPT aquatic drone boat for improved application accuracy and efficiency was launched. With a customer-centric focus, UPL is committed to providing product stewardship and technical support to ensure your plant management operations are successful.

Incorporated in 1961 as a forum to share water hyacinth control experiences, today APMS and its seven Regional Chapters promote research and outreach to manage all species of aquatic plants and algae.

General Info for Membership, Etc.

The Aquatic Plant Management Society, Inc. is an international organization of scientists, educators, students, commercial pesticide applicators, administrators, and concerned individuals interested in the management and study of aquatic plants and algae. The membership reflects a diversity of federal, state, and local agencies, universities and colleges around the world, corporations, and small businesses.

VISION

The Vision of the Aquatic Plant Management Society is to be the leading international organization for scientific information on aquatic plant and algae management.

MISSION

The Mission of the Aquatic Plant Management Society is to provide a forum for the discovery and dissemination of scientific information that advances aquatic plant and algae management policy and practice.

STATEMENT ON EQUITY, DIVERSITY, & INCLUSION

Creating an atmosphere of inclusion is vital to the Aquatic Plant Management Society (APMS). Contributions and perspectives from all members, students, event participants, and our local and international communities are important. Diversity includes age, culture, disability, ethnicity, gender, national origin, color, race, religion, sexual orientation, and diversity of thoughts and ideas. We recognize that embracing and encouraging diversity is critical to fulfilling our mission to 'Provide a forum for the discovery and dissemination of scientific information that advances aquatic plant and algae management policy and practice'. APMS will strive to further cultivate a Society built on mentorship, encouragement, tolerance, and mutual respect, and foster a welcoming environment for all.

To join, visit this link: http://www.apms.org/society/membership/

To renew a membership, login and visit this link: http://www.apms.org/member-login/

Follow us on Social Media at:

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APMS now has a Professional Organizational Page (@Aquatic Plant Management Society), as well as a Public Group

Many of our regional chapters are active on social media, too. Give them a like and a follow!