
41st WAPMS Conference

**WESTERN AQUATIC PLANT
MANAGEMENT SOCIETY**

76th WSWS Conference

WESTERN SOCIETY OF WEED SCIENCE

February 27th - March 2nd, 2023

The Grove Hotel ~ Boise, Idaho



WAPMS.ORG

WSWEEDSCIENCE.ORG

Past WAPMS Meetings Sites and President

2022	Tucson, AZ	Cory Greer
2021	Virtual (joint meeting w/WSWS)	Tom Warmuth
2020	-	-
2019	Mission Viejo, CA (joint meeting w/APMS)	Andrea Sealock
2018	Reno, NV	Amy Ferriter
2017	Coeur d'Alene, ID (joint meeting w/ WSWS)	Scott Nissen
2016	San Diego, CA	Joseph Vassios
2015	Portland, OR	Patrick Akers
2014	Reno, NV	Cody Gray
2013	Coeur d'Alene, ID	Mark Sytsma
2012	San Diego, CA	Toni Pennington
2011	Westminster, CO	Thomas Moorhouse
2010	Seattle, WA	Robert Leavitt
2009	Honolulu, HI	Tom McNabb
2008	Tahoe City, CA	Scott Shuler
2007	Coeur d'Alene, ID	Ross O'Connell/ Lars Anderson
2006	San Diego, CA (25 th Meeting)	Jenifer Parsons
2005	Denver, CO	George Forni
2004	Bellevue, WA	Terry McNabb
2003	Sacramento, CA	Shaun Hyde
2002	Coeur d'Alene, ID	Mike Mizumoto
2001	Las Vegas, NV	Ron Crocket
2000	Bozeman, MT	Valerie Van-Way
1999	Reno, NV	Stuart Perry
1998	San Diego, CA	Kathy Hamel
1997	Seattle, WA	Mark Sytsma
1996	Portland, OR	Vanelle Peterson
1995	Sacramento, CA	Fred Ryan
1994	Coeur d'Alene, ID	Paul Beatty
1993	Tucson, AZ	Lars Anderson
1992	Salt Lake City, UT	David Spencer
1991	Seattle, WA	Richard Thiery
1990	Sparks, NV	Tom McNabb
1989	Honolulu, HI	Barbra H. Mullin
1988	Fresno, CA	Fred Nibling
1987	Boise, ID	Winn Winkyaw
1986	San Diego, CA	Randall Stocker
1985	Phoenix, AZ	Nate Dechoretz
1984	Spokane, WA	Les Sonder
1983	Las Vegas, NV	Terry McNabb
1982	Denver, CO	First Business Meeting Terry McNabb (President); Paul Beatty (VP)
1981	Formation Interest meeting, San Diego, CA - Floyd Colbert and Lars Anderson (Co-chairs)	

Board of Directors

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The objectives of the Society shall be to:

1. Establish a forum for the exchange of information on aquatic vegetation management techniques, strategies, and research through periodic meetings and other appropriate means.
2. Cooperate with local, state, regional, and national agencies, both public and private, in the identification of and solution to aquatic vegetation problems.
3. Promote uniformity and coordination of activities among agencies concerned with the regulatory aspects of aquatic plant management.
4. Encourage scientific research and assist in promoting the control and management of aquatic plants through scientifically sound procedure.
5. Recognize and promote scientific advancement of the members and facilitate the education of aquatic plant scientists through scholarship and other assistance programs.
6. Extend and develop public interest in, and understanding of, aquatic plant management problems and solutions.
7. Cooperate with local chapters and other organizations with similar and related interests.

The Western Aquatic Plant Management Society geographic region includes the states of:
Alaska, Arizona, California, Colorado, Hawaii, Idaho, Oregon, Nevada, New Mexico, Montana,
Utah, Washington, and Wyoming

WESTERN AQUATIC PLANT MANAGEMENT SOCIETY

joint meeting with

WESTERN SOCIETY OF WEED SCIENCE

February 27th - March 2nd, 2023

The Grove Hotel ~ Boise, Idaho

PROGRAM

Monday, February 27

12:00 – 9:00 **Conference Registration & Exhibition/Posters Set Up**

6:00 – 9:00 **Welcome Reception**
Boise Centre West – Room 100A

Tuesday, February 28

WAPMS Sessions will be held in the Boise Centre West, Room 120A

9:00 – 12:00 **Welcome to the WAPMS & WSWS Conference, Registration and CEU Sign-in, Updates, and Keynote Speakers**

9:00 – 9:05 **Intro and Announcements**
Curtis Rainbolt; BASF, Meridian, ID

9:05 – 9:20 **Western Society of Weed Science Presidential Address**
Joel Felix; Oregon State University, Ontario, OR

9:20 – 9:35 **Western Aquatic Plant Management Society Presidential Address**
Douglas Kleweno; Cygnet Enterprises, Inc., Camas, WA

9:35 – 9:50 **Women of Aquatics Update**
Amy Kay; SOLitude Lake Management, Oakwoods Hills, FL

9:50 – 10:00 **Aquatic Ecosystem Restoration Foundation Update**
Carlton Layne; Executive Director, AERF, Marietta, GA

10:00 – 10:10 **Aquatic Plant Management Society Update**

10:10 – 10:30 **DC Update**
Lee Van Wychen; Executive Director of Science Policy, WSSA, Alexandria, VA

Session A **Keynote Speakers**

10:30 – 11:45

- 10:30 – 11:15 **Challenges and Adaptive Management Opportunities in Breaking the Annual-grass Fire Cycle: Insights from the Boise and SW Idaho Area**
Matt Germino, Supervisory Research Ecologist, FIREss team: Fire, Invasives, and Restoration Ecology of Sagebrush Steppe
- 11:15 – 11:45 **Facing Water Management Challenges Throughout the West - a Federal Perspective**
Roland Springer; Deputy Regional Director, Columbia-Pacific Northwest Region, Bureau of Reclamation
- 11:45 – 1:15 **Lunch** (On your own)
- Session B** **Water in the West: Implications for Weed Management**
1:15 – 3:15 Moderators: Jane Mangold and Mirella Ortiz
- 1:15 – 1:45 **Western US Climate Change Trends & Spring Seasonal Outlook**
Sophia Adams, National Weather Service Meteorologist, WFO Boise, ID
- 1:45 – 2:15 **Evolving Water Resource Management in the Southwest**
Charles Ester III, Salt River Project
- 2:15 – 2:45 **Follow the Water—Invasive Plants and Global Change in a Dry Grassland – Virtual Presentation**
Dana Blumenthal, Research Ecologist, USDA-ARS Rangeland Resources & Systems Research Unit, Fort Collins, CO
- 2:45 – 3:15 **Traits that Confer Weediness also Facilitate Adaptation to Climate Change**
Ian Burke, Washington State University
- 3:15 – 3:30 **Break**
- Session C** **Continuation Water in the West: Implications for Weed Management**
3:30 – 5:00 Moderators: Jane Mangold and Mirella Ortiz
- 3:30 – 4:00 **Predicting Plant Invasions Under Climate Change in Aquatic and Riparian Systems in the Pacific Northwest**
David R. Clements¹, Emma Nikkel², and Jennifer Williams²; ¹Trinity Western University, Langley, BC, Canada; ²University of British Columbia, Vancouver, BC, Canada
- 4:00 – 4:30 **Runaway Lakeshores and Widespread Plant Invasions: Insights on Revegetating Wetlands in the Arid West**
Jes Braun and Karin Kettenring, Utah State University
- 4:30 – 5:00 **Water & Weeds: Supporting Idaho’s Thriving Agricultural Economies**
Paul Arrington, Executive Director & General Counsel, Idaho Water Users Association
- 5:00 – 6:30 **Students Reception**

Wednesday, March 1

WAPMS Sessions will be held in the Boise Centre West, Room 120A

Session D

7:00 – 10:15

Registration, Posters, WAPMS/WSWS Conference, Registration and CEU Sign-in.

7:15 – 8:45

Poster Session

8:45 – 9:15

Artificial Intelligence Algorithm Development for Harmful Algal Bloom Prediction

Kerry Caslow¹, Frederic Leroudier², and Andrew Luessenhop¹; ¹In-Situ, Inc., Fort Collins, Colorado; ²BiOceanOr, France

9:15 – 9:35

The Very Recent Hydrilla Invasion on Lake Apopka, Florida: A Wickedly Big Problem with a Need for Immediate and Long-Term Solutions

James Leary PhD*¹, Assistant Professor Agronomy Department, Center for Aquatic and Invasive Plants, University of Florida, J., N. Visscher², K. Gladding¹, and J. Glueckert¹; ¹Center for Aquatic and Invasive Plants, Institute of Food and Agricultural Science, University of Florida, ²Invasive Plant Management Section, Florida Fish and Wildlife Conservation Commission

9:35 – 9:55

What is the Desired Oxygen Level in the Water and at the Sediment- Water Interface in a Lake? A Literature Review and Possible New Paradigm Shift

Patrick Goodwin, PhD, Naturalake Biosciences

9:55 – 10:15

The Effect of Repeated Clipping on Dioecious Hydrilla Subterranean Turions

Taylor L. Darnell*¹, Benjamin P. Sperry², Candice M. Prince³; ¹University of Florida/Center for Aquatic Invasive Plants, Gainesville, FL, ²US Army Corps of Engineers, Gainesville, FL, ³University of Florida, Gainesville, FL

10:15 – 10:25

Break

Session E

10:25 – 11:30

10:25 – 10:30

Intro for next 3 Speakers

Dennis Zavaglo, Tahoe Regional Planning Agency (TRPA)

10:30 – 10:50

Implementation of the Control Management Test (CMT) at the Tahoe Keys Lagoons, Part 1

Lars Anderson, PhD, Waterweed Solutions, Pt. Reyes, CA. Tahoe Keys Property Owners Association; Sierra Ecosystem Resources

10:50 – 11:10

Controlling Aquatic Plants using Short Wavelength Ultraviolet Light

John J. Paoluccio, Inventive Resources, Inc.

11:10 – 11:30

Implementation of the Control Management Test (CMT) at the Tahoe Keys Lagoons, Part 2

Toni Pennington, PhD, Environmental Science Associates

11:30 – 2:00

Joint WAPMS-WSWS Awards Luncheon

Boise Centre West Room 100B

Session F

2:15 – 3:15

2:15 – 2:35

Translating Herbicide Use Pattern for Floating Plant Control with Spray Tracker Technology

Jonathan Glueckert*¹, Amber Riner², James Leary², Alex Dew³; ¹University of Florida, Boynton Beach, FL, ²University of Florida, Gainesville, FL, ³Fish and Wildlife Conservation Commission, Tallahassee, FL

2:35 – 2:55

In-Stream Bioremediation Filters and E. coli Reduction

Amy Kay, Partners of Scott County Watersheds, City of Davenport, IA

2:55 – 3:15

Developing Aerial Surveillance Methods for Identifying Cryptic Water Hyacinth (Eichhornia crassipes [Mart.] Solms) on Lake Lochloosa in Florida

Amber Riner*, Jonathan Glueckert, James Leary, Amr Abd-Elrahman; University of Florida, Gainesville, FL

3:15 – 3:30

Break

Session F

3:30 – 6:20

3:30 – 3:50

Whole-genome Sequencing of an Herbicide Selection Experiment Identifies a Chromosomal Region Associated with Fluridone Resistance in Eurasian Watermilfoil

Ryan Thum*¹, Gregory M. Chorak²; ¹Montana State University, Bozeman, MT, ²Montana State University Department of Plant Science, Bozeman, MT

3:50 – 4:10

Spray Retention of Commonly Managed Invasive Emergent Aquatic Macrophytes

Andrew W. Howell*¹, Erika J. Haug², Benjamin P. Sperry³, Christopher R. Mudge⁴, Robert J. Richardson², Kurt D. Getsinger⁵; ¹North Carolina State University, Pittsboro, NC, ²North Carolina State University, Raleigh, NC, ³US Army Corps of Engineers, Gainesville, FL, ⁴U.S. Army Engineer Research & Development Center, Baton Rouge, LA, ⁵US Army Corps of Engineers, Vicksburg, MS

4:10 – 4:30

Alaska's First Invasive Aquatic Plant, Elodea

J T Gravelie, Travis Fuller*, SePRO; Aditi Shenoy, Fairbanks Soil and Water Conservation District

4:30 – 4:50

A Centralized Database of Watermilfoil Strains Across the United States: Initial Insights, and Utility for Stakeholder Communication and Management Decision-Making

Ryan Thum¹, Ashley L. Wolfe*¹, Raymond Newman²; ¹Montana State University, Bozeman, MT, ²University of Minnesota, St. Paul, MN

4:50 – 6:20

What's New in the Industry

5:30 – 6:30

Women of Aquatics ~ Happy Hour

Bardenay Restaurant & Distillery - 610 W Grove St, Boise, ID

Thursday, March 2

WAPMS Sessions will be held in the Boise Centre West, Room 120A

Session G

WAPMS and WSWs Conference & Registration and CEU Sign-in

8:00 – 12:00

8:00 – 9:30

WAPMS Business Breakfast

All WAPMS registered guests are invited to attend the breakfast and participate in the business meeting. Rooms 110A & 110B.

9:30 – 9:50

Hydrilla Verticillata Phenology and Growth in Lotic Systems

Jens P. Beets*¹, Erika J. Haug¹, Robert J. Richardson¹, Benjamin P. Sperry²;
¹North Carolina State University, Raleigh, NC, ²US Army Corps of Engineers, Gainesville, FL

9:50 – 10:10

The WeeDrone-120: Aquatic Maintenance Vessel

Noah Williams*, Marketing at Seafloor Systems, Sacramento, CA; Dean Kinney, Senior Agronomic Sales Representative, Rocklin, CA

10:10 – 10:30

Use of Unmanned Aerial Systems (Drone) Technology for the Control of Aquatic Vegetation in Hard to Access Sites

Thomas J McNabb*, Clean Lakes, Inc. and Thomas Moorhouse, Clean Lakes, Inc., Coeur d'Alene, ID

10:40 – 11:00

Restoring Aquatic Ecosystems with Selective Herbicides and Phosphorus Mitigation Technology

Kaitlyn H. Quincy*¹, Byran Fuhrmann²; ¹SePRO, Denver, CO, ²SePRO, Whitakers, NC

11:00 – 11:20

Aquatic Photosynthetic Organisms

Luke C. Huffman; University of Wisconsin, Madison, WI

11:20 – 11:40

Drawdown Applications of Three Acetolactase Synthase-Inhibiting Herbicides to Suppress Dioecious Hydrilla Tuber Sprouting

Taylor L. Darnell¹, Candice M. Prince², Benjamin P. Sperry³; ¹Graduate Student, University of Florida Agronomy Department, Gainesville FL, ²Assistant Professor of Agronomy, University of Florida, Gainesville, FL, ³Research Biologist, US Army Engineer Research & Development Center, Gainesville, FL

11:40 – 12:00

Clonal Diversity of Invasive Crested Floating Heart in the Southeastern United States

Zachary J. Kuzniar*, Ryan A. Thum; Montana State University, Bozeman, MT

Closing Remarks

Exhibitor Breakdown
