



UMISC

Upper Midwest Invasive Species Conference





















2020
ONLINE

Pathways to Success:
Partnership and Purpose






NOVEMBER 2 - 6, 2020

Pathways to Success: Partnerships & Purpose At-a-Glance Schedule and Full Program (10/22/2020)























Note: All times are Central Standard Time


Monday, November 2, 2020 (remember clocks "fall back" Sunday morning!)						
Monday AM	8:30 am - 10:00 am	WELCOME ADDRESS AND PLENARY - INVITED ELECTED OFFICIALS & DANIEL SIMBERLOFF				
	10:00 am - 10:20 am	BREAK				
	10:20 am - 12:00 pm	 Adaptive Management in Action	 Novel Detections Part 1: eDNA & Other Strategies	 Control of Floating-Leaf & Emergent Invasive Plants	 Jumping Worms: New Research & Outreach	 Invasive Plant Genetics & Implications for Management
Monday PM	12:00 pm - 1:30 pm	LUNCH				
	1:30 pm - 3:10 pm	 Unique Outreach for Unique Audiences	 Novel Detections Part 2: eDNA & Other Strategies	 Improved Eurasian Watermilfoil Management	 Protecting Mighty Oaks: Advances in Oak Wilt Detection	 Translating Science into Practice for Climate-Smart Invasive Species Management
	3:10 pm - 3:30 pm	BREAK				
	3:30 pm - 3:45 pm	VIRTUAL POSTER & EXHIBIT HALL WELCOME				
	3:45 pm - 5:00 pm	EXPLORE THE POSTER & EXHIBIT HALL				
	5:00 pm - 6:00 pm	HAPPY HOUR SOCIAL SPACE				
	Tuesday, November 3, 2020 (Don't forget to VOTE!)					
Tuesday AM	9:00 am - 10:00 am	PLENARY - DALE BURKETT				
	10:00 am - 10:20 am	BREAK				
	10:20 am - 12:00 pm	 Modeling to Understand Ecology & Invasive Species Spread	 Sustaining Community & Citizen Science through Volunteer Training	 Tackling Dreissenid Mussels and New Zealand Mudsnails	 Emerging Invasive Plants: Control & Prevention	 Invasives & Restoration 1: Grazing & Shading as Tools for Restoration & Invasive Control
Tuesday PM	12:00 pm - 1:30 pm	LUNCH				
	1:30 pm - 3:10 pm	 Genetic Biocontrol: Science, Policy, Ethics & Outreach	 Big Data! Invasive Species Mapping Tools	 Assessing & Addressing AIS Risks	 Insect Pests of Forest and Agricultural Lands	 Invasives & Restoration 2: Wetland Restoration - Successes with Cattail Invasions
	3:10 pm - 5:00 pm	EXPLORE THE POSTER & EXHIBIT HALL AND SOCIAL SPACES				

UMISC Program Photo & Cover Design by Christopher J. Benson, Duluth, MN

-  = Aquatic Track
-  = Forest Health Track
-  = Special Session or Symposium
-  = Terrestrial Track
-  = Interdisciplinary


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Wednesday, November 4, 2020						
Wednesday AM	9:00 am - 10:00 am	PLENARY - MAMIE PARKER				
	10:00 am - 10:20 am	BREAK				
	10:20 am - 12:00 pm	 Cooperative Invasive Species Management Area Round-Table	 WORKSHOP: Why Diversity, Equity & Inclusion are Vital to Conservation Goals	 Ballast Water: New Policies, Actions & Findings	 Legends of Forest Health: New Answers to Old Questions	 Invasives & Restoration 3: Terrestrial Restoration - Successes & Pollinator Benefits
Wednesday PM	12:00 pm - 1:30 pm	LUNCH				
	1:30 pm - 3:10 pm	 WORKSHOP: Bringing Divergent Views Together with Open Space Meetings	 Why the Words we Use Matter	 Boater Behavior: From Theory to Practice	 Using Herbicides to Improve Management of Invasive Plants, Part 1	 Invasives & Restoration 4: Lessons Learned - Planning & Improving Future Restorations
	3:10 pm - 5:00 pm	EXPLORE THE POSTER & EXHIBIT HALL AND SOCIAL SPACES				
Thursday, November 5, 2020						
Thursday AM	8:30 am - 10:10 am	 <i>Phragmites</i> Symposium Part 1: Current Approaches to Management	 Organisms in Trade: Fostering Responsible Businesses	 Using Herbicides to Improve Management of Invasive Plants, Part 2	 WIGL Summit 1: Welcome to WIGL - Who, What, Where, Why & How?	
	10:10 am - 10:30 am	BREAK				
	10:30 am - 12:10 pm	 <i>Phragmites</i> Symposium Part 2: Future Directions for Research & Management	 Organisms in Trade: Fostering Responsible Consumers	 Diversity, Equity, Inclusion & Justice: Change-makers in the Midwest	 WIGL Summit 2: The Importance of Biology in Managing Woody Species	
Thursday PM	12:10 pm - 1:30 pm	LUNCH				
	1:30 pm - 3:10 pm	 Invasive Carp: Modeling and Collaboration	 Promoting Behavior Change for Invasive Species Prevention	 Diversity, Equity, Inclusion & Justice: Conversations about Racism in Conservation	 WIGL Summit 3: The Trade Pathway - When Good Plants Go Bad	
	3:10 pm - 5:00 pm	EXPLORE THE POSTER & EXHIBIT HALL AND SOCIAL SPACES				

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Friday, November 6, 2020					
Friday AM	8:30 am - 10:10 am	<input type="checkbox"/> Right-of-Way Invasive Plant Management	<input type="checkbox"/> Regulatory Toolbox for Invasive Species Prevention & Management	<input type="checkbox"/> Biological Control of Forest Pests	<input type="checkbox"/> WIGL Summit 4: Integrated Strategies for Woody Invasive Control
	10:10 am - 10:30 am	BREAK			
	10:30 am - 12:10 pm	<input type="checkbox"/> On our Radar: New Invasive Plant Threats to the Upper Midwest	<input type="checkbox"/> WORKSHOP: R Statistical Software for Invasive Species Applications	<input type="checkbox"/> Silvicultural Responses to Invasive Species	<input type="checkbox"/> WIGL Summit 5: Herbicide Use to Control Woody Invasive Species
Friday PM	12:10 pm - 1:30 pm	LUNCH			
	1:30 pm - 3:10 pm	<input type="checkbox"/> Landscape Scale Management Approaches	<input type="checkbox"/> Lessons Learned in Starry Stonewort Management		<input type="checkbox"/> WIGL Summit 6: Public Perceptions & Engagement to be Part of the Solution!
	3:10 pm - 3:30 pm				

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Full Program - Plenaries, Concurrent Sessions, Symposia, and Workshops Monday, November 2, 2020 (all times are CST)

WELCOME PLENARY

8:30AM Opening remarks will be provided by:

UMISC Program Co-Chair Doug Jensen, Duluth Mayor Emily Larson, and Minnesota Department of Natural Resources Commissioner Sarah Strommen (*invited*)

9:00AM The State of Invasive Species Science in 2020 and Beyond

Dr. Daniel Simberloff, Gore Hunger Professor of Environmental Science, University of Tennessee - Knoxville

MORNING CONCURRENT SESSIONS

Adaptive Management in Action

Moderator: Paul Skawinski, University of Wisconsin Extension Lakes Program

Session Sponsor: University of Minnesota Extension

10:20AM Revising Minnesota's Invasive Species Management Plan: What Are Your Thoughts?

*Chelsey Blanke*¹, James Calkins², Doug Jensen³; Byron Karns⁴, Sascha Lodge¹, Cori Mattke⁵, Kelly Pennington¹, Katie Sickmann⁶; ¹ Minnesota Department of Natural Resources; ² Minnesota Nursery and Landscape Association; ³ University of Minnesota Sea Grant Program; ⁴ National Park Service - St. Croix National Scenic Riverway; ⁵ Minnesota Aquatic Invasive Species Research Center; ⁶ St. Croix River Association*

10:40AM Development, Implementation, & Evaluation of Michigan's Red Swamp Crayfish Adaptive Response Plan

*Lucas Nathan*¹, Seth Herbst¹, Brian Roth², Kelley Smith², Sara Thomas¹; ¹ Michigan Department of Natural Resources; ² Michigan State University*

11:00AM Using Impact Collaborative Innovation to Forecast Terrestrial Invasive Species Priorities in Minnesota

*Matthew Russell*¹, Angela Gupta², Regina McGoff²; ¹ University of Minnesota; ² University of Minnesota Extension*

11:20AM AIS Rapid Response in Pennsylvania: Case studies of Successes and Lessons Learned

Sara Stahlman, Pennsylvania Sea Grant

11:40AM Extended Panel Discussion/Q&A

Novel Detections: eDNA & Other Strategies - Part 1

Moderator: Patrick Mulcahy, University of Minnesota

Session Sponsor: Minnesota Aquatic Invasive Species Research Center

10:20AM AIS and Boating Access Sites: A Study of Michigan's Inland Lakes

Christina Baugher, Michigan Department of Natural Resources

10:40AM Sampling Design for Early Detection of Invasive Plants in Great Lakes Ports

*Andrew Tucker*¹, Lindsay Chadderton¹, Erick Elgin², Gust Annis¹, Joel Hoffman³; ¹The Nature Conservancy; ² Michigan State University Extension; ³ U.S. Environmental Protection Agency Office of Research and Development*

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Monday, November 2, 2020 - Morning Concurrent Sessions, cont.

11:00AM DNA Meta-Barcoding-Based Identification of Fish Larvae for Invasive Species Early Detection

Joel Hoffman*¹, Christy Meredith², Erik Pilgrim¹, Anett Trebitz¹, Chelsea Hatzenbuehler¹, John Russell Kelly¹;

¹ U.S. Environmental Protection Agency Office of Research and Development; ² Montana Department of Environmental Quality

11:20AM AIS Aerial Detection Pilot Project

Tony Brough, Hennepin County, Minnesota, Jim Hughes, Laetitia Moreau

11:40AM Survey 123 for Fisheries Data Collection: Benefits Realized and Lessons Learned

Grace Loppnow, U.S. Fish and Wildlife Service

Control of Floating-Leaf & Emergent Invasive Plants

Moderator: Meg Duhr, University of Minnesota

Session Sponsors: 4-Control, Inc. & Nutrien Solutions

10:20AM Update on Promising Biological Control Options for Flowering Rush (*Butomus umbellatus*)

Jennifer Andreas*¹, Patrick Haefliger², Harriet Hinz²; ¹ University of Washington Extension; ² CABI

10:40AM The Phenology of Flowering Rush (*Butomus umbellatus*) in the Western United States

John Madsen*, USDA - Agricultural Research Service, Kurt Getsinger, U.S. Army - Engineer Research and Development Center

11:00AM European Frogbit - An Emerging Concern in the Great Lakes Region

Mark Warman* and Jennifer Hillmer, Cleveland Metroparks

11:20AM *Glyceria maxima* (Gly-max) Eradication in a Wisconsin Lacustrine Wetland

Kyle Duquaine, Eco-Resource Consulting, Inc.

11:40AM Successful Removal of Yellow Floating Heart (*Nymphoides peltata*)

Chris Hamerla, Golden Sands RC&D Council, Inc.

Jumping Worms: New Research & Outreach

Moderator: Erin Buchholz, University of Minnesota

Session Sponsor: Minnesota Invasive Terrestrial Plants and Pests Center

10:20AM Jumping Worms: Impacts, Identification, Actions, and Public Outreach


Laura Van Riper*, Minnesota Department of Natural Resources, Angela Gupta, University of Minnesota Extension


10:40AM Jumping Worms: Become a Worm Ranger!

Ryan Hueffmeier* and Stephan Carlson, University of Minnesota

11:00AM Jumping Worms - Ecology and Management Research

Lee Frelich*, Yoo Kyungsoo, Tyler Baumann, Shuai Yang, Erin Buchholz, University of Minnesota

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Monday, November 2, 2020 - Morning Concurrent Sessions, cont.

11:20AM Response of two Pheretimid Earthworms, *Amyntas tokioensis* and *A. agrestis*, to Different Litter Types
Bradley Herrick* and Marie Johnston, University of Wisconsin - Madison Arboretum

11:40AM Extended Panel Discussion/Q&A

Invasive Plant Genetics & Implications for Management



Moderator: Katie Grzesiak, Northwest Michigan Invasive Species Network

Session Sponsor: Minnesota Invasive Terrestrial Plants and Pests Center

10:20AM Diversity and Introgression of Knotweed (*Fallopia* spp.) in Minnesota

Dallas Drazan*, Alan Smith, Neil Anderson, Roger Becker, Matt Clark, Andrzej Noyszewski, Marie Abbey, University of Minnesota

10:40AM Improvements in Genetic Testing for the Identification of Palmer Amaranth in Seed Mixtures

Anthony Brusa*¹, Eric Patterson², Todd Gaines³, Philip Westra³, Don Wyse¹; ¹ University of Minnesota; ² University of Michigan; ³ Colorado State University

11:00AM Regional Patterns of Reed Canarygrass (*Phalaris arundinacea* L.) Genetic Structure along Six Major Minnesota Rivers

Andrzej Noyszewski*¹, Neil Anderson¹, Alan Smith¹, Andrzej Killan², Diana Dalbotton³, Emi Ito¹; ¹ University of Minnesota; ² Diversity Arrays Technology; ³ St. Anthony Falls Laboratory

11:20AM Trait Based Approach Showing Variations of Reed Canarygrass along Urbanization Gradient

Leah Weston*¹, Charles Day², Stephen Hovick¹; ¹ The Ohio State University; ² Cornell University

11:40AM Extended Panel Discussion/Q&A

AFTERNOON CONCURRENT SESSIONS

Unique Outreach for Unique Audiences



Moderator: Megan Weber, University of Minnesota Extension


Sessions Sponsor: Minnesota SeaGrant, Wisconsin Department of Natural Resources

1:30PM Don't Pack a Pest for Academic Travelers - Minnesota

Doug Jensen*¹, John Vreyens², Sam Chan³, Tania Siemens³; ¹ University of Minnesota Sea Grant Program; ² University of Minnesota Extension Global Initiatives; ³ Oregon State University Sea Grant Extension


1:50PM A Survey of Practitioners of Buddhist "Life Release" Residing in the United States and how such Information may lead to Reducing Invasion Risk

Tim Campbell*¹, Bret Shaw², Evelyn Hammond³, Luye Bao², Shiyu Yang², Peter Jurich²; ¹ University of Wisconsin Sea Grant; ² University of Wisconsin Department of Life Science Communication; ³ University of Wisconsin Division of Extension

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Monday, November 2, 2020 - Afternoon Concurrent Sessions, cont.

2:10PM Invasive Species Outreach to Waterfowl Hunters and Furbearer Trappers

Chris Hamerla, Golden Sands RC&D Council, Inc.

2:30PM Managing Aquatic Plants Together: Programs and Policies to Support Collaborative Natural Resource Management

Alison Mikulyuk, Madison Johansen, Michelle Nault, Wisconsin Department of Natural Resources*

2:50PM Fostering Informed Consumers of Aquatic Invasive Species Management

Megan Weber, Daniel Larkin, Patrick Mulcahy, University of Minnesota*

Novel Detections: eDNA & Other Strategies - Part 2

Moderator: Courtney Larson, University of Minnesota - Duluth

1:30PM Dispersal Dynamic and Recruitment of a Freshwater Invader using Otolith Chemistry

*Olivier Morissette*¹, Frédéric Lecomte¹, Nathalie Vachon¹, Annick Drouin¹, Pascal Sirois^{2,1} Ministère des Forêts, de la Faune et des Parcs; ² Université du Québec à Chicoutimi*

1:50PM Spatial Comparison of eDNA vs. Physical Fish Data from a Complex Freshwater Estuary

Anett Trebitz, Chelsea Hatzenbuehler, Joel Hoffman. Jon Barge, Greg Peterson, Erik Pilgrim, U.S. Environmental Protection Agency Office of Research and Development*

2:10PM Tracking the Invasion Front of Round Goby using eDNA and Traditional Methods

*Scott George*¹, Barry Baldigo¹, Christopher Rees², Meredith Bartron²; ¹ U.S. Geological Survey; ² U.S. Fish and Wildlife Service*

2:30PM eDNA for Early Detection of AIS: Where are We and Where are We Going?

Justin Townsend, Ramsey County Parks

2:50PM Extended Panel Discussion/Q&A

Improved Eurasian Watermilfoil Management

Moderator: Michelle Nault, Wisconsin Department of Natural Resources


Session Sponsor: Minnesota Aquatic Invasive Species Research Center

1:30PM Advancements in Eurasian Watermilfoil Research and Management in Wisconsin

Michelle Nault, Wisconsin Department of Natural Resources


1:50PM Assessment of Two Large-Scale ProcellaCOR EC Treatments in Northern Indiana

*Reid Morehouse*¹, Willey Leif², Mark Heilman¹; ¹ SePRO; ² Aquatic Control*

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Monday, November 2, 2020 - Afternoon Concurrent Sessions, cont.

2:10PM In-lake Evaluation of Floryprauxifen-benzyl (ProcellaCOR) on Invasive Hybrid Watermilfoil in a Central Minnesota Lake

*Keegan Lund**, *Kylie Cattoor**, *April Londo*, *Minnesota Department of Natural Resources*

2:30PM Integrating Genetics and Herbicide Studies to Improve Watermilfoil Management Outcomes

*Ryan Thum**¹, *Gregory Chorak*¹, *Raymond Newman*², *Jo Latimore*³, *Erick Elgin*³; ¹*Montana State University*; ²*University of Minnesota*; ³*Michigan State University*

2:50PM Extended Panel Discussion/Q&A

Protecting Mighty Oaks: Advances in Oak Wilt Detection 

Moderator: *Eli Sagor*, *University of Minnesota - Cloquet Forestry Center*

Session Sponsors: *Invasive Species Centre*, *Minnesota Invasive Terrestrial Plants and Pests Center*

1:30PM Spectral Reflectance Detects Oak Wilt Decline in Oaks at the Landscape Scale

*Gerard Sapes**¹, *Cathleen Lapadat*¹, *Jennifer Juzwik*², *Rebecca Montgomery*¹, *Nanfeng Liu*³, *Phillip Townsend*³; ¹*University of Minnesota*; ²*USDA Forest Service*; ³*University of Wisconsin - Madison*

1:50PM Seasonal and Regional Distributions, Degree-Day Models, and Phoresy Rates of the Major Sap Beetle (Coleoptera: Nitidulidae), Vectors of the Oak Wilt Fungus, *Bretziella fagacearum*, in Wisconsin

*Stephanie Jentz**¹, *Jennifer Juzwik*², *Patrick Tobin*³, *Kenneth Raffa*⁴; ¹*Wisconsin Department of Agriculture and Consumer Protection*; ²*USDA Forest Service*; ³*University of Washington*; ⁴*University of Wisconsin - Madison (emeritus)*

2:10PM Novel Rapid Detection Technology for Oak Wilt Disease

*Vinni Thekkudan Novi**¹, *Melanie Moore*², *Quichen Dong*¹, *Jennifer Juzwik*², *Abdenour Abbas*¹; ¹*University of Minnesota*; ²*USDA Forest Service*

2:30PM Oak Wilt Outreach in Ontario: A Model for Educating Communities on Invasive Species

Mackenzie DiGasparro, *Invasive Species Centre*

2:50PM Extended Panel Discussion/Q&A


Translating Science into Practice for Climate-Smart Invasive Species Management 

Moderator: *Julie Weisenhorn*, *University of Minnesota Extension*

Session Sponsor: *University of Minnesota Extension*

1:30PM Translational Invasion Ecology: Bridging Research and Practice to Address One of the Greatest Drivers of Global Change

*Toni Lyn Morelli**¹, *Carrie Brown-Lima*², *Jenica Allen*³, *Audrey Barker Plotkin*⁴, *Evelyn Beaury*⁴, *Emily Fusco*⁴, *Bridget Griffin*⁴, *Brittany Laginhas*⁴, *Lara Munro*⁴, *Bethany Bradley*⁴; ¹*U.S. Geological Survey*; ²*New York Invasive Species Research Institute*; ³*Mount Holyoke College*; ⁴*University of Massachusetts - Amherst*

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Monday, November 2, 2020 - Afternoon Concurrent Sessions, cont.

1:50PM Biological Control Programs as a Model of Translational Invasion Research

Carrie Brown-Lima, New York Invasive Species Research Institute

2:10PM Resilient and Connected: Our Vision for Protecting Biodiversity

Shaun Howard, The Nature Conservancy

2:30PM Stakeholder-Driven Tools for Visualizing and Listing Climate-Driven Range Shifts in Terrestrial Invasive Plants

*Jenica Allen*¹, Jeff Garnas², Chuck Bargeron³, Joseph LaForest³, Bethany Bradley⁴; ¹Mount Holyoke College; ²University of New Hampshire; ³University of Georgia; ⁴University of Massachusetts - Amherst*

2:50PM Building a Regional Collaboration of Northeast State Invasive Species Councils to Proactively Address Range-Shifting Invasive Plants

*Bethany Bradley*¹, Carrie Brown-Lima², Toni Lyn Morelli³, Jenica Allen⁴, Evelyn Beaury¹, Emily Fusco⁴, Brittany Laginhas¹; ¹University of Massachusetts - Amherst; ²New York Invasive Species Research Institute; ³U.S. Geological Survey; ⁴Mount Holyoke College*

POSTER & EXHIBIT HALL OPENING & DEMO

3:30 - 4:00PM

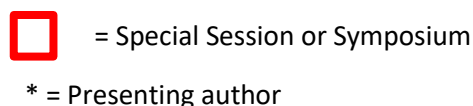
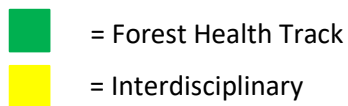
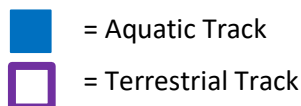
It has been a bit of a strange year, hasn't it? When we were last together at UMISC 2018 in Rochester, it is unlikely any of us were thinking about how to present a poster virtually or how to develop a compelling online exhibit page. But here we are! And we've been thrilled by the enthusiasm and ingenuity of our poster presenters and exhibitors! Join us for a few brief words of welcome and a demo of things to look for in the poster hall by your intrepid admin, Clair Ryan.

HAPPY HOUR!

5:00 - 6:00PM

Its five o' clock right here! (give or take a time zone) We will have some Zoom rooms open just for mixing, mingling and commiserating over what a wild year it's been. Bring your favorite snack and beverage. Stay the whole hour or drop by for a few minutes.

Reminder: if there are a specific people you want to hang with, we encourage you to set up your own meeting rooms! You can use the UMISC Event Space messaging app to send invite information to anyone attending the conference





Tuesday, November 3, 2020 (Election Day, U.S.) (all times are CST)

MORNING PLENARY

9:00AM Opening remarks and announcements will be provided by:

Clair Ryan, UMISC Administrative Lead and Mark Renz, UMISC Program Co-Chair

9:10AM Actions Taken and Lessons Learned Along the Journey: Six Decades of Sea Lamprey Control

Dale P. Burkett, Sea Lamprey Control Director, Great Lakes Fishery Commission

MORNING CONCURRENT SESSIONS

Modeling to Understand Ecology & Invasive Species Spread

Moderator: Krista Lutzke, North American Invasive Species Management Association

Session Sponsor: Minnesota Invasive Terrestrial Plants and Pests Center

10:20AM Developing Phenological Models to Improve Management of Pesky Plants

*Rebecca Montgomery**, *Abigail Anderson*, *Byju Govindan*, *Stephan Carlson*; *University of Minnesota*

10:40AM Assessing Eastern U.S. Forest Susceptibility to Four Invasive Insect Pests in the Context of Landscape Connectivity

*Jason Reinhardt** and *Matthew Russell*; *University of Minnesota*

11:00AM Making Better MaxEnt Models for Invasive Species

*Amy Morey**; *University of Minnesota*, *Rob Venette*; *USDA Forest Service and University of Minnesota*

11:20AM Improving Predictions of Range Expansion for Invasive Species using Joint Species Distribution Models and Surrogate Co-occurring Species

*Ryan Briscoe Runquist**, *Thomas Lake*, *David Moeller*; *University of Minnesota*

11:40AM Terrestrial Eutrophication and Afforestation as Major Driver of Invasion

Stephen Thomforde; *Stantec Consulting Environmental Services*

Sustaining Community & Citizen Science through Volunteer Training

Moderator: Anne Pearce, University of Wisconsin - Madison

Session Sponsor: University of Minnesota Extension

10:20AM Invasive Species and Community Action


Lauren Bell; *Invasive Species Centre*

10:40AM Managing Invasive Species with the Help of Citizen Scientists and Experienced Mentors

Christopher Gaetzke; *Lower Chippewa Invasives Partnership, Inc.*

11:00AM EmpowerU: Energizing Citizens with the Skills to Affect Change in their Communities

*Gail Epping Overholt*¹*, *Anne Pearce*²*; ¹ *University of Wisconsin - Arboretum*, ² *University of Wisconsin - Madison*

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Tuesday, November 3, 2020 - Morning Concurrent Sessions, cont.

11:20AM Online Volunteer Program: Increasing Accessibility, Flexibility, and Engagement in Rural Communities

Lindsay Peterson; Wild Rivers Invasive Species Coalition (WRISC)

11:40AM Successfully Inheriting an Invasive Species Outreach Program

Rachel Carroll, Rebekah Wallace, Chuck Bargeron; University of Georgia*

Tackling Dreissenid Mussels and New Zealand Mudsnails

Moderator: Megan Weber, University of Minnesota Extension

10:20AM Lake Michigan Quagga Mussel (*Dreissena rostriformis bugensis*) Control Demonstration Project

*Erika Jensen*¹, Doug Bradley², Harvey Bootsma³, Vincent Deneff⁴, Kathryn Schmidt⁴, Brenda Moraska Lafrancois⁵;*
¹ Great Lakes Commission; ² LimnoTech; ³ University of Wisconsin - Milwaukee; ⁴ University of Michigan; ⁵ National Park Service

10:40AM Eradicating Invasive Mollusks (*Dreissena* and NZMS) when Fish are Present

David Hammond, EarthTec QZ, Gavin Ferris, Solitude Lake Management, Inc.*

11:00AM Field Studies on Low-dose Copper Treatments for Dreissenid Mussel Control

*Angelique Dahlberg*¹, Diane Waller², James Luoma², Nicholas Phelps¹, Matthew Barbour²;*
¹ University of Minnesota; ² U.S. Geological Survey

11:20AM The Great Lakes New Zealand Mud Snail Collaborative

Jeremy Geist; Trout Unlimited, Inc.

11:40AM Conservation Dogs Locate AIS Infestations: A Collaborative Project Overview

Amy Wagnitz and Laura Holder; Midwest Conservation Dogs, Inc.*

Emerging Invasive Plants: Control & Prevention

Moderator: Chris Evans, University of Illinois Extension

Session Sponsors: Wisconsin Department of Agriculture, Trade and Consumer Protection, Quercus Land Stewardship Services

10:20AM Japanese Stiltgrass (*Microstegium vimineum*) Management in Southern Indiana


Emily Finch; Dubois County Soil & Water Conservation District

10:40AM EDDMapS Pro Mapping Applications Aid in Early Detection and Rapid Response to Potential Pest Threats

Tricia Bethke; The Morton Arboretum


11:00AM Biocontrol of Tree of Heaven (*Ailanthus altissima*) in an Integrated Management Plan

*Francesca Marini*¹, Massimo Cristofaro¹, Enrico de Lillo², Radmila Petanović³, René Sforza⁴, Biljana Vidović³, Philip Weyl⁵;*
¹ Biotechnological and Biological Control Agency; ² University of Bari Aldo Moro; ³ University of Belgrade; ⁴ USDA-ARS European Biological Control Laboratory; ⁵ CABI

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Tuesday, November 3, 2020 - Morning Concurrent Sessions, cont.

11:20AM NAISMA Certified Weed Free Mulch Standards: A New Tool for a Critical Invasive Species Pathway
Elizabeth Brown and Belle Bergner; North American Invasive Species Management Association*

11:40AM Extended Panel Discussion/Q&A

Invasives & Restoration 1: Grazing & Shading as Tools for Restoration & Invasive Control

Moderator: Justin Townsend, Ramsey County, MN

Session Sponsor: Minnesota Invasive Terrestrial Plants and Pests Center

10:20AM Cover it Up! Four Years of Restoring Herbs to Control Common Buckthorn

*Peter Wragg*¹, Michael Schuster¹, Lee Frelich¹, Alex Roth², Paul Bockenstedt³, Shawn Schottler⁴, Mike Goodnature⁵, Paul Kortebein⁶, Peter Reich¹; ¹ University of Minnesota; ² Friends of the Mississippi River; ³ Stantec; ⁴ St. Croix Watershed Research Station; ⁵ Ramsey County; ⁶ Three Rivers Park District*

10:40AM The Effectiveness of using Targeted Grazing for Vegetation Management: A Meta-Analysis

Katherine Marchetto, Tiffany Wolf, Daniel Larkin; University of Minnesota*

11:00AM Using Sheep to Control Buckthorn, Honeysuckle, and Garlic Mustard

Angela Miner; The Nature Conservancy

11:20AM Suppression of *Phalaris arundinacea* by Assisted Succession: A 16-Year Restoration Experiment

Kattia Palacio-Lopez, Steve Hovick, Kali Mattingly, Leah Weston, Nathaniel Hofford, Logan Finley; The Ohio State University*

11:40AM Extended Panel Discussion/Q&A

AFTERNOON CONCURRENT SESSIONS

Genetic Biocontrol: Science, Policy, Ethics & Outreach

Moderator: Justin Townsend, Ramsey County, MN

1:30PM Engineering Genetic Biocontrol Agents for Terrestrial and Aquatic Invasive Species


Michael Smanski; University of Minnesota

1:50PM Gene Drive: A Novel Tool for Non-Native Invasive Plant Management

Alan Smith, Nicholas Johnson, Roger Becker, Neil Anderson; University of Minnesota*

2:10PM U.S. and Other Policy Considerations Relevant to Invasive Species Control

Stas Burgiel, National Invasive Species Council

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Tuesday, November 3, 2020 - Afternoon Concurrent Sessions, cont.

2:30PM Thinking Beyond the Federal Framework Governing Genetic Biocontrol: Legal and Policy Considerations from the International to Local Scale

Stephanie Otts; National Sea Grant Law Center, University of Mississippi

2:50PM Engaging the Public when Biotechnology Goes "Wild"

Jason Delborne; North Carolina State University

Big Data! Invasive Species Mapping Tools 

Moderator: Jason Granberg, Wisconsin Department of Natural Resources

Session Sponsor: Center for Invasive Species and Ecosystem Health, University of Georgia

1:30PM Wild Spotter - Mapping Invasives in America's Wild Places

*Mike Ielmini *¹, Pat Conzemius ², Dane Huinker ², Chuck Bargeron ³, Rachel Carroll ³; ¹ USDA - Forest Service; ² Wildlife Forever; ³ University of Georgia*

1:50PM The USGS NAS Database: Actionable Tools and Data for AIS Management

Matthew Neilson, Daniel Wesley, Ian Pfingsten; U.S. Geological Survey*

2:10PM ISMTrack: Easing Coordination for Long-term Management of Invasive Knotweeds (*Polygonum* spp.)

*Christina Basch*¹, Monika Chandler ¹, Chuck Bargeron ², Barb Perry ³, Edward Dittmer ⁴, Dustin Looman ⁴; ¹ Minnesota Department of Agriculture; ² University of Georgia; ³ Minnesota Department of Natural Resources; ⁴ Conservation Corps of MN & IA*

2:30PM Focus on the Audience, Not the Technology

Chuck Bargeron, Rebekah Wallace, Rachel Carroll, Joe LaForest; University of Georgia*

2:50PM Extended Panel Discussion/Q&A

Assessing & Addressing AIS Risks 

Moderator: Jo Latimore, Michigan State University

1:30PM Aquatic Plant Pathway Risk Assessment for the Laurentian Great Lakes


*Ceci Weibert*¹, Erika Jensen ¹, Lindsay Chadderton ², Andrew Tucker ², Kate Wyman-Grothem ³; ¹ Great Lakes Commission; ² The Nature Conservancy; ³ U.S. Fish and Wildlife Service*


1:50PM Online Decision Support Tool to Prioritize AIS Surveillance and Watercraft Inspection Activities

*Nicholas Phelps*¹, Amy Kinsley ¹, Robert Haight ², Petra Muellner³. Ulrich Muellner ³, Zoe Kao ¹, Eva Enns ¹; ¹ University of Minnesota; ² USDA - Forest Service; ³ Epi-Interactive*

2:10PM Assessing the Risk of Fish Pathogen Introduction via Illegal Release of Live Baitfish in Minnesota

Meg McEachran, Nicholas Phelps*, Janice Mladonicky, Catalina Picasso; University of Minnesota*

 = Aquatic Track

 = Terrestrial Track

 = Forest Health Track

 = Interdisciplinary

 = Special Session or Symposium

* = Presenting author

Tuesday, November 3, 2020 - Afternoon Concurrent Sessions, cont.

2:30PM How "Hidden Mitten" Exposed an Illicit Invasive Species Threat

Sharon Gary and Holli Polansky*; U.S. Fish and Wildlife Service*

2:50PM Potential Sources of Infectious Disease Introduction: An Overview of the U.S. Live Exotic Aquatic Animal Trade from Asia

*Alexander Primus*¹, Amy Kinsley¹, Tiffany Wolf¹, Kristine Smith², Carlos Zambrana², Nicholas Phelps¹; ¹ University of Minnesota; ² EcoHealth Alliance*

Insect Pests of Forest and Agricultural Lands 

Moderator: Julie Weisenhorn, University of Minnesota Extension

Session Sponsors: Wisconsin Department of Agriculture, Trade and Consumer Protection and Wisconsin Department of Natural Resources

1:30PM Host Preferences of Velvet Longhorned Beetle, *Trichoferus campestris*

*Grace Haynes*¹, Marissa Streifel², Angie Ambourn², Brian Aukema¹; ¹ University of Minnesota; ² Minnesota Department of Agriculture*

1:50PM The History of Gypsy Moth (*Lymantria dispar*) Management in Wisconsin: From Weather Balloons to iPhones

Christopher Foelker; Wisconsin Department of Agriculture, Trade & Consumer Protection

2:10PM Gypsy Moth (*Lymantria dispar*) Program Updates on Surveys and Treatments

Natasha Northrop; Minnesota Department of Agriculture

2:30PM Cost-effective Organic Controls for Spotted-wing Drosophila: Bio-pesticides and High Tunnel Exclusion

Matthew Gullickson, Gigi DiGiacomo*, Mary Rogers; University of Minnesota*

2:50PM The Parasitoid *Aphelinus certus* as a Biological Control Agent of the Soybean Aphid

James Miksanek and George Heimpel; University of Minnesota*

Invasives & Restoration 2: Wetland Restoration - Successes with Cattail Invasions 

Moderator: Megan Weber, University of Minnesota Extension

Session Sponsors: 4-Control, Inc., Nutrien Solutions, Quercus Land Stewardship Services

1:30PM Invasive Species Before, During and After Restorations


Gina Quiram and Wade Johnson; Minnesota Department of Natural Resources*

1:50PM Restoration of Wetlands Infested with Hybrid Cattail in Voyageurs National Park

*Reid Plumb*¹, Steve Windels¹, Chandra Wiley¹, Bryce Olson²; ¹ National Park Service; ² Russurs Consulting LLC*

2:10PM Wetland Restoration Implications of Invasive Plants and High Water Levels in the St. Louis River Estuary

*Dustin Haines*¹, Anna Hall², Hannah Ramage¹; ¹ Lake Superior National Estuarine Research Reserve; ² U.S. EPA*

 = Aquatic Track

 = Forest Health Track

 = Special Session or Symposium

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 = Interdisciplinary

* = Presenting author




Tuesday, November 3, 2020 - Afternoon Concurrent Sessions, cont.

2:30PM Removing Invasive Cattail to Restore Wild Rice in Allouez Bay

Kelly Beaster and Amy Eliot; University of Wisconsin - Superior*

2:50PM Extended Panel Discussion/Q&A

 = Aquatic Track

 = Terrestrial Track

 = Forest Health Track

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Wednesday, November 4, 2020 (all times are CST)

MORNING PLENARY

9:00AM Opening remarks and announcements will be provided by:

Clair Ryan, UMISC Administrative Lead

9:10AM Closing Gaps and Building Bridges in our Socially Distant World

Dr. Mamie Parker, President of M.A. Parker & Associates and former Assistant Director of Fisheries and Habitat Conservation, U.S. Fish & Wildlife Service

MORNING CONCURRENT SESSIONS

Cooperative Invasive Species Management Area Round-Table 

Moderator: Kelly Kearns, Wisconsin Department of Natural Resources

Session Sponsor: Wisconsin Department of Natural Resources

10:20AM - 12:00PM - *Lightning talks by CISMA representatives focused on what's new, what has been successful, and what has been particularly challenging.*

Workshop: Why Diversity, Equity and Inclusion are Vital to Conservation Goals 

Instructor: C. Parker McMullen Bushman; EcoInclusive Strategies, LLC

10:20AM - 12:00PM - [Please register here if you plan to attend](#) (included with UMISC registration)

Ballast Water: New Policies, Actions & Findings 

Moderator: Jeff Stollenwerk, Duluth Seaway Port Authority

Session Sponsor: Duluth Seaway Port Authority

10:20AM Predicting the Risk of Pathogen Introduction from Ballast Water Discharge into the St. Louis River Estuary, Minnesota


*Julia Zimmer**, Randall Hicks, Chan Lan Chun; University of Minnesota - Duluth

10:40AM Great Waters Research Collaborative's Journey to Find Effective Ballast Water Management Strategies

*Kelsey Prihoda**¹, Meagan Aliff², Kimberly Beesley¹, Lana Fanberg¹, Steven Gebhard¹, Holly Wellard Kelly², Marylee Murphy¹, Christine Polkinghorne¹, Euan Reavie², Elaine Ruzyccki², Heidi Saillard¹, Heidi Schaefer¹, Tyler Schwerdt³, and Matthew TenEyck¹; ¹ University of Wisconsin - Superior; ² University of Minnesota - Duluth; ³ AMI Consulting Engineers


11:00AM Bench-scale Evaluation of Ballast Water Treatment for Bacterial Communities

*Lisa DeGuire**¹, Matthew TenEyck², Heidi Saillard², Christine Polkinghorne², Chan Lan Chun¹, Randall Hicks¹; ¹ University of Minnesota - Duluth; ² University of Wisconsin - Superior

 = Aquatic Track

 = Forest Health Track

 = Special Session or Symposium

 = Terrestrial Track

 = Interdisciplinary

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Wednesday, November 4, 2020 - Morning Concurrent Sessions, cont.

11:20AM Vessel Incidental Discharge Act (VIDA) – The U.S. Regulatory Framework for Discharges from Commercial Vessels

*Jack Faulk**; U.S. Environmental Protection Agency and *Matthew A. Reudelhuber**, U.S. Coast Guard

11:40AM *Ballast Water Management in the Great Lakes*

Thomas Rayburn; Lake Carriers' Association

Legends of Forest Health: New Answers to Old Questions

Moderator: Eric Otto, University of Minnesota

10:20AM American Chestnut (*Castanea dentata*) as a Model for Tackling Introduced Pests and Pathogens

Keith Gilland; University of Wisconsin - Stout

10:40AM Butternut Canker Disease: 50 years of Study and We Still Have Questions

James Jacobs; USDA - Forest Service

11:00AM The Resurgence of Larch Casebearer in the Great Lakes Region

Brian Aukema^{*1}, *Spencer Stout*¹, *Samuel Ward*²; ¹ University of Minnesota; ² Mississippi State University

11:20AM Winning the Dutch Elm Disease Battle by Developing Resistant Elms for Minnesota

Benjamin Held^{*1}, *Chad Giblin*¹, *Ryan Murphy*¹, *Garrett Beier*², *Robert Blanchette*¹; ¹ University of Minnesota; ² Farmingdale State College

11:40AM Extended Panel Discussion/Q&A

Invasives & Restoration 3: Terrestrial Restoration - Successes & Pollinator Benefits

Moderator: Julie Weisenhorn, University of Minnesota Extension

Session Sponsors: 4-Control, Inc. & Nutrien Solutions

10:20AM Influence of Landscape, Establishment Practices and Management on Invasive Plants and Native Forbs when Establishing Pollinator Habitat

*Mark Renz**, *Yuebo Su*, *Jasmine Wyant*, *Erin Warner*, *Laura Judge*; University of Wisconsin - Madison

10:40AM Restoration of Native-Dominated Plant Communities on a Spotted Knapweed-Infested Site

Neil MacDonald, Grand Valley State University


11:00AM Best Management Practices for Pollinator-friendly Invasive Species Management

*Baerbel Ehrig** and *Michele Sadauskas**; Oneida County Land & Water Conservation Department

11:20AM Long-term Impacts of Organic Soil Amendments on Urban Prairie Restoration

*Leah Weston**, *Stephen Hovick*, *Scott Demyen*, *Nicholas Basta*; The Ohio State University

11:40AM Extended Panel Discussion/Q&A

 = Aquatic Track

 = Forest Health Track

 = Special Session or Symposium

 = Terrestrial Track

 = Interdisciplinary

* = Presenting author

Wednesday, November 4, 2020 cont.

AFTERNOON CONCURRENT SESSIONS

Workshop: Bringing Divergent Views Together with Open Space Meetings

Instructors: April Rust and Brian Stenquist, Minnesota Department of Natural Resources

1:30PM - 3:10PM - [Please register here if you plan to attend](#) (included with UMISC registration)

Why the Words We Use Matter

Moderator: Jeanne Scherer, University of Wisconsin Extension

Session Sponsor: Minnesota SeaGrant

1:30PM Disconnects between Communicated Impact and Ecological Impact of Biological Invasions

Kali Mattingly, Tara Pelletier, Jessie Lanterman, Danielle Frevola, Benjamin Stucke, Kaitlin Kinney, Ross Schwartz, Drew Spacht, Graham Dixon, Stephen Hovick; The Ohio State University*

1:50PM What's In a Name? Thoughtful Nomenclature Makes a Difference

*Angela Gupta*¹, Megan Weber¹, Doug Jensen²; ¹ University of Minnesota Extension; ² University of Minnesota Sea Grant Program*

2:10PM Outreach in a Digital World

Rebekah Wallace, Chuck Bargeron, Rachel Carroll; University of Georgia*

2:30PM Seeing, Hearing and Feeling: The Clean Drain Dry Partnership Message

Dane Huinker; Wildlife Forever

2:50PM PlayCleanGo®: Upper Midwest Partnerships and How Your Organization Can Participate

Krista Lutzke; North American Invasive Species Management Association

Boater Behavior: From Theory to Practice

Moderator: Meg Duhr, University of Minnesota

Session Sponsors: Wisconsin Department of Natural Resources, CD3 Systems

1:30PM Lake Public Access Observations for Aquatic Invasive Species Prevention Behaviors


*Tony Brough*¹, Carolyn Dindorf², Katie Farber²; ¹ Hennepin County; ² Fortin Consulting, Inc.*

1:50PM A Comparison of Watercraft Decontamination Methods: Invasive Species Removal, Boater Outreach, and Cost

*Maria Bleitz*¹, Jo Latimore¹, Kevin Walters²; ¹ Michigan State University; ² Michigan Department of Environment, Great Lakes, and Energy*


2:10PM Online Boater Led Check-In/Check-Out Alternative to In-Person Inspections: A COVID-19 Response Pilot

Mark Apfelbacher and Edgar Rudberg; CD3, General Benefit Corporation*

 = Aquatic Track

 = Forest Health Track

 = Special Session or Symposium

 = Terrestrial Track

 = Interdisciplinary

* = Presenting author

Wednesday, November 4, 2020 - Afternoon Concurrent Sessions, cont.

2:30PM AIS Prevention During COVID-19

Erin McFarlane^{*1}, Jeanne Scherer²; ¹ University of Wisconsin Extension Lakes; ² Wisconsin Department of Natural Resources & University of Wisconsin - Madison Extension

2:50PM Extended Panel Discussion/Q&A

Using Herbicides to Improve Management of Invasive Plants, Part 1

Moderator: Justin Townsend, Ramsey County, MN

Session Sponsor: Corteva Agriscience

1:30PM Introduction to Rinskor™: A New Molecule for Increased Control of Broadleaf Weeds and Brush

Scott Flynn; Corteva Agriscience

1:50PM TerraVue - A New Standard for Broadleaf Weed Control: Use Sites and Effectiveness

Jerome Otto* and Karissa Floerchinger*; Corteva Agriscience

2:10PM Comparison of Effectiveness of TerraVue to Standards on Roadsides in Wisconsin

Mark Renz; University of Wisconsin - Madison

2:30PM Desirable Forb Tolerance to Applications of Rinskor®-containing Herbicides (Duracor™ & TerraVue™) in Rangeland, Pastures and Non-Crop Sites

Chad Cummings; Corteva Agriscience

2:50PM Extended Panel Discussion/Q&A

Invasives & Restoration 4: Lessons Learned - Planning & Improving Future Restorations

Moderator: Kari Hagenow, The Nature Conservancy

Session Sponsor: Quercus Land Stewardship Services

1:30PM The Effects of Dams on Minnesota Fish Communities

Amy Childers* and Luther Aadland; Minnesota Department of Natural Resources

1:50PM Reed Canarygrass: Implications for Control of an Invasive Species When It Is Native


Neil Anderson^{*1}, Andrzej Noyszewski¹, Alan Smith¹, Diana Dalbotten¹, Emi Ito¹, Anne Timm²; ¹ University of Minnesota; ² USDA - Forest Service

2:10PM Diversity Makes the World Go Round: Resisting Invasion by Design

Megan Benage; Minnesota Department of Natural Resources


2:30PM Reducing Risk of Exotic Plant Introduction in Native Prairie Seed Provenancing

Jennifer Larson^{*1}, Diane Larson¹, Rob Venette²; ¹ U.S. Geological Survey; ² USDA - Forest Service & University of Minnesota

 = Aquatic Track

 = Forest Health Track

 = Special Session or Symposium

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* = Presenting author



Wednesday, November 4, 2020 - Afternoon Concurrent Sessions, cont.


2:50PM Improving Ecological Restoration to Curb Biotic Invasion


*Diane Larson**¹, *Qinfeng Guo*², *Dale Brockway*², *Deli Wang*³, *Hai Ren*⁴; ¹ U.S. Geological Survey; ² USDA - Forest Service; ³ Northeast Normal University; ⁴ Chinese Academy of Sciences

CISMA SOCIAL

3:15 - 5:00PM

Every UMISC we look forward to bringing CISMA staff and participants together to socialize and share their successes and challenges in a less formal setting. Were there things brought up during the CISMA Roundtable session you want to hear more about? This is the perfect place to do it! Grab your favorite snack and stay the whole time or as long as you're able. This is a live Zoom event (not livestreamed).

 = Aquatic Track

 = Terrestrial Track

 = Forest Health Track

 = Interdisciplinary

 = Special Session or Symposium

* = Presenting author

Thursday, November 5, 2020 (all times are CST)

EARLY MORNING CONCURRENT SESSIONS

Phragmites Symposium 1: Current Approaches to Management

Moderator: Jason Granberg, Wisconsin Department of Natural Resources

Session Sponsor: The Great Lakes *Phragmites* Collaborative

8:30AM Great Lakes *Phragmites* Collaborative: Working Towards a Common Agenda

*Erika Jensen**¹, *Samantha Tank*¹, *Patrick Canniff*¹, *Kurt Kowalski*²; ¹ Great Lakes Commission; ² U.S. Geological Survey

8:50AM Non-native *Phragmites* (*Phragmites australis* subsp. *australis*) Management in Coastal Southwestern Lake Superior

Travis Bartnick; Great Lakes Indian Fish & Wildlife Commission

9:10AM Coordinated Response to Invasive *Phragmites* in Minnesota

*Julia Bohnen**, *Daniel Larkin*, *Susan Galatowitsch*; University of Minnesota

9:30AM Semi-Automated Identification and Monitoring of *Phragmites australis* Using Drones and Satellites

*Connor Anderson**, *Daniel Heins*, *Keith Pelletier*, *Joseph Knight*; University of Minnesota

9:50AM Mapping invasive *Phragmites* Treatment Outcomes with UAS Imagery

*Charlotte Weinstein**, *Colin Brooks*, *Andrew Poley*, *Amanda Grimm*, *Nicholas Marion*, *Dana Hansen*; Michigan Tech Research Institute

Organisms in Trade: Fostering Responsible Businesses

Moderator: Emily Cook, Northwest Michigan Invasive Species Network

8:30AM Recent Trade-Pathway Invasive Species Prevention Efforts in Minnesota

Chelsey Blanke; Minnesota Department of Natural Resources

8:50AM Preventing Aquatic Invasive Species Introductions through Retailer Engagement

*Paige Filice**¹, *Jo Latimore*²; ¹ Michigan State University Extension; ² Michigan State University


9:10AM "Don't Let It Loose" - Building an Outreach Campaign to Prevent Aquatic Invasive Species

*Sara Cowell**¹, *Stephanie Sardelis*¹, *Julie Carpentier*¹, *Jeff Brinsmead*², *Laureen Janusz*³, *Martina Beck*⁴; ¹ Fisheries and Oceans Canada; ² Ontario Ministry of Natural Resources and Forestry; ³ Government of Manitoba; ⁴ Government of British Columbia

9:30AM Be PlantWise – Making a Difference to Reduce the Spread of Horticulturally Invasive Plants in British Columbia

Danielle Toperczer; Invasive Species Council of BC

9:50AM Extended Panel Discussion/Q&A

 = Aquatic Track

 = Forest Health Track

 = Special Session or Symposium

 = Terrestrial Track

 = Interdisciplinary

* = Presenting author

Thursday, November 5, 2020 - Early Morning Concurrent Sessions, cont.

Using Herbicides to Improve Management of Invasive Plants, Part 2

Moderator: Chris Evans, University of Illinois Extension

Sessions Sponsors: 4-Control, Inc., Nutrien Solutions, Minnesota Native Landscapes

8:30AM Protecting Valuable Native Plants and Reducing Herbicide Use while Controlling Non-native Invasive Plants

*John Lampe*¹, Taylor Bokman*²; ¹Green Shoots, LLC; ²Minnesota Native Landscapes*

8:50AM Is there a Magic Bullet? Greenhouse Screening of Herbicides on Bohemian Knotweed (*Fallopia x bohemica*)

Roger Becker, Alan Smith, Neil Anderson, Jeanie Katovich, Mary Marek-Spartz, Ryan Mentz; University of Minnesota*

9:10AM How can Adjuvants Improve Herbicide Efficacy?

Joe Vaillancourt; Loveland Products, Inc.

9:30AM Effectiveness of Herbicides when Controlling Golden Creeper (*Thladiantha dubia*)

Leo Roth and Mark Renz; University of Wisconsin - Madison*

9:50AM Extended Panel Discussion/Q&A

WIGL Summit 1: Welcome to WIGL - Who, What, Where, Why & How?

Moderator: Kari Hagenow, The Nature Conservancy

Session Sponsor: The Woody Invasives of the Great Lakes Collaborative

8:30AM Welcome to WIGL!

Clair Ryan; Midwest Invasive Plant Network

8:50AM Restoring Invaded Forests: Ecological Impacts of Woody Shrubs

Sara Kuebbing; University of Pittsburgh

9:10AM What Does the Forest Inventory and Analysis Program tell us about Woody Invasive Species Distribution?


Cassandra Kurtz and Randy Morin, USDA Forest Service

9:30AM Woody Invasives of the Future Great Lakes - EDDMapS Predictive Tools Demo

Clair Ryan; Midwest Invasive Plant Network


9:50AM The WIGL Collaborative's Tools for Understanding and Managing Woody Invasive Species of the Great Lakes

Susan Franklin, Clair Ryan; Midwest Invasive Plant Network*

 = Aquatic Track

 = Forest Health Track

 = Special Session or Symposium

 = Terrestrial Track

 = Interdisciplinary

* = Presenting author

Thursday, November 5, 2020

LATE MORNING CONCURRENT SESSIONS

Phragmites Symposium 2: Future Directions for Research & Management

Moderator: Jason Granberg, Wisconsin Department of Natural Resources

Session Sponsor: The Great Lakes *Phragmites* Collaborative

10:30AM The *Phragmites* Adaptive Management Framework: Managing *Phragmites* with Science on Your Side

*Samantha Tank**¹, *Erika Jensen*¹, *Christine Dumoulin*², *Patrick Canniff*¹, *Clinton Moore*^{2&3}, *Kurt Kowalski*^{3,1} *Great Lakes Commission*; ² *University of Georgia*; ³ *U.S. Geological Survey*

10:50AM Introducing Biological Control of Introduced Common Reed (*Phragmites australis*) in Ontario

*Michael McTavish**¹, *Sandy Smith*¹, *Rob Bouchier*^{2,1} *University of Toronto*; ² *Agriculture and Agri-Food Canada*

11:10AM Targeting Gene Expression to Develop Species-specific Approaches to Manage Non-native *Phragmites*

*Kurt Kowalski**¹, *Ping Gong*^{2,1} *U.S. Geological Survey*; ² *U.S. Army Engineer Research and Development Center*

11:30AM Microbial Intervention for *Phragmites* Management: Progress and Possibilities

*Wesley Bickford**¹, *Kurt Kowalski*¹, *James White*², *Keith Clay*^{3,1} *U.S. Geological Survey*; ² *Rutgers University*; ³ *Tulane University*

11:50AM Is there a New Wetland Invader in Ontario? Assessing Potential Hybridization in *Phragmites*

*Joanna Freeland** and *Abigail Warren*; *Trent University*

Organisms in Trade: Fostering Responsible Consumers

Moderator: Tim Campbell, University of Wisconsin Extension Lakes Program

Session Sponsors: Minnesota SeaGrant, Wisconsin Department of Natural Resources

10:30AM Incidence of Red-eared Slider (*Trachemys scripta elegans*) Surrender to Minnesota Herpetological Society

*Jorge Polanco** and *Jeff LeClerc**; *Minnesota Herpetological Society*

10:50AM Expanding Invasive Species Prevention through Unique Community Partnerships

*Doug Jensen**¹, *Randy Carey**², *Jeff LeClerc**³, *Bartley Blume**^{4,1} *University of Minnesota Sea Grant Program*; ² *Minnesota Aquarium Society*; ³ *Minnesota Herpetological Society*; ⁴ *Bent Brewstillery*

11:10AM Plant-Smart Water Gardening


Janet Schreier; *Minnesota Water Garden Society*

11:30AM A Trusted Spokesperson Can Amplify Your AIS Prevention Message

*Jeanne Scherer**¹ and *Melinda Myers**; ¹ *University of Wisconsin - Madison Extension*


11:50AM Invasive Crayfish Enforcement in the Live Food and Pet Industries

Robert Stroess; *Wisconsin Department of Natural Resources Bureau of Law Enforcement*

 = Aquatic Track

 = Forest Health Track

 = Special Session or Symposium

 = Terrestrial Track

 = Interdisciplinary

* = Presenting author

Thursday, November 5, 2020 - Late Morning Concurrent Sessions, cont.

Diversity, Equity, Inclusion & Justice: Change-makers in the Midwest & Beyond

Moderator: Kasandra Richardson, National Wildlife Federation

10:30AM Removing Social Biases from Conservation by Addressing Internal Cultures and Changing the Hiring Pipeline
August Ball; Cream City Conservation

10:50AM Environmentalists of Color, Catalyzing Racial Equity in the Environmental Field through A Member-Driven Network
Raquel García-Álvarez; Forest Preserves of Cook County

11:10AM Conversations about Racism, Creating Dialogue within Ourselves and Our Organizations to Catalyze Change
Rowzat Shipchandler; Minnesota Department of Natural Resources

11:30AM The Roger Arliner (RAY) Young Diversity Fellowship: Empowering Emerging Leaders of Color in Conservation
Guilu Murphy, RAY Diversity Fellowship

11:50AM Extended Panel Discussion/Q&A

WIGL Summit 2: The Importance of Biology in Managing Woody Species

Moderator: Mari Hardel, Minnesota Department of Agriculture

Session Sponsor: The Woody Invasives of the Great Lakes Collaborative


10:30AM Nonnative Invasive Woody Species: What Makes Them So Successful?
Lauren Pile; USDA - Forest Service


10:50AM Biology of the Callery pear (*Pyrus calleryana*) and Why it is so Difficult to Eradicate
Theresa Culley; University of Cincinnati

11:10AM Interactions between the Invasive Amur Honeysuckle, *Lonicera maackii*, and Overabundant White-tailed Deer, and Implications for Management
David Gorchov; University of Miami

11:30AM Some Native Shrubs can Mitigate Phenological Advantages of Invasive Buckthorn (*Rhamnus cathartica*)
Michael Schuster, Peter Wragg, Peter Reich; University of Minnesota*

11:50AM Extended Panel Discussion/Q&A

 = Aquatic Track

 = Terrestrial Track

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Thursday, November 5, 2020

AFTERNOON CONCURRENT SESSIONS

Invasive Carp: Modeling and Collaboration

Moderator: Pat Mulcahy, University of Minnesota

1:30PM Addressing the Invasion of Grass Carp in Lake Erie

John Navarro; Ohio Department of Natural Resources

1:50PM Adaptive Grass Carp (*Ctenopharyngodon idella*) Response Actions in Lake Erie

John Buszkiewicz, Lucas Nathan, Seth Herbst; Michigan Department of Natural Resources*

2:10PM Status of Grass Carp Spawning in Lake Erie Tributaries and Implications for Management

*Nicole King*¹, Patrick Kocovsky², Christine Mayer¹, Song Qian¹; ¹ University of Toledo - Lake Erie Center; ² U.S. Geological Survey*

2:30PM Identification of Probable Spawning Areas for Invasive Carps using Inverse Drift Modeling

*Ryan Jackson*¹, Patrick Kocovsky¹, Charlie Cigrand¹, Nicole King², Christine Mayer², Song Qian²; ¹ U.S. Geological Survey; ² University of Toledo - Lake Erie Center*

2:50PM Using Collaboration to Prevent the Establishment of Asian Carps

*Rebecca Schroeder*¹ and Brook Schryer*²; ¹ Invasive Species Centre; ² Ontario Federation of Anglers and Hunters*

Promoting Behavior Change for Invasive Species Prevention

Moderator: Julie Weisenhorn, University of Minnesota Extension

1:30PM Utilizing Technology to Understand the Effectiveness of Outreach Initiatives

Megan Pistolese and Brittney Rogers*; The Nature Conservancy*

1:50PM Wisconsin Boaters' and Anglers' Perceptions of Aquatic Invasive Species Prevention

Evelyn Hammond, Ayse Okur-Ozdemir, Tim Campbell, Jeanne Scherer; University of Wisconsin - Madison*

2:10PM Developing a Clean Drain Dry Behavior Change Strategy in New York State


Ken Donnelly; Beyond Attitude Consulting

2:30PM Bridging the Gap: State and Local Behavior Change Initiatives for AIS Prevention in Minnesota

Tina Fitzgerald; Minnesota Department of Natural Resources

2:50PM Pathways to Partnership: How Three CISMAs Collaborated for Consistent Messaging

*Rosie Page*¹, Lindsay Peterson*², Alix Bjorklund*³, Tracy Beckman⁴; ¹ Wisconsin Headwaters Invasives Partnership; ² Wild Rivers Invasive Species Coalition; ³ Timberland Invasives Partnership; ⁴ Lumberjack RC&D Council*

 = Aquatic Track

 = Forest Health Track

 = Special Session or Symposium

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 = Interdisciplinary

* = Presenting author

Thursday, November 5, 2020 - Afternoon Concurrent Sessions, cont.

Diversity, Equity, Inclusion & Justice Panel: Conversations about Racism in Conservation

Moderator: Kasandra Richardson, Midwest Invasive Plant Network

1:30PM Panelist Introductions and Participant Guidelines

Ariana Cano; University of Vermont, The Gund Institute

Josh Anadu; Oklahoma State University

LaTresse Snead; National Parks Foundation

1:50PM – 3:10PM Extended Panel Discussion/Q&A

WIGL Summit 3: The Trade Pathway - When Good Plants Go Bad

Moderator: Rachel Steward, Plant Sentry

Session Sponsor: The Woody Invasives of the Great Lakes Collaborative, Alpha Nurseries

1:30PM Indiana's Plant Assessment Process and its Vital Role in Development of the Terrestrial Plant Rule

Dawn Slack; The Nature Conservancy

1:50PM Use of Plant Sentry™ to Educate Consumers and Provide Plants that only Benefit the Environment

Tom Buechel^{1&2} and Rachel Stewart²; ¹ Buechel Horticulture Solutions, LLC; ² Plant Sentry

2:10PM Mislabeling and Hybridization: Untangling Invasive Bittersweet (*Celastrus orbiculatus*) from its Native Relative (*C. scandens*)


David Zaya; Illinois Natural History Survey

2:30PM Sterile Cultivars: A Plant Breeding Approach to Invasive Species Problems

Mark Brand; University of Connecticut

2:50PM Go Beyond Beauty: Northwest Michigan's Approach to Invasive Ornamentals

Katie Grzesiak; Northwest Michigan Invasive Species Network

 = Aquatic Track

 = Terrestrial Track

 = Forest Health Track

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Friday, November 6, 2020 (all times are CST)

EARLY MORNING CONCURRENT SESSIONS

Right-of-Way Invasive Plant Management

Moderator: Mark Renz, University of Wisconsin - Madison

Session Sponsor: 4-Control, Inc. & Nutrien Solutions

8:30AM Documenting Impacts of Training Municipalities to Control Invasive Plants on Wisconsin Roads

Anne Pearce and Mark Renz; University of Wisconsin - Madison*

8:50AM Lessons Learned from Plant Growth Regulator (PGR) and Invasive Weed Control Roadside Programs

Jim Bean; BASF Corporation

9:10AM Working with Counties & Municipalities to Control Invasive Plants on Roadsides

Lee Shambeau; 4-Control, Inc.

9:30AM Integrating Control Methods for Wild Parsnip (*Pastinaca sativa*) in Rights of Way with Imazapic + Metsulfuron for Grass Height Suppression

*Leo Roth*¹, Mark Renz¹, Lee Shambeau², Ken Schroeder³, Jerome Clark³, Leigh Presley³; ¹ University of Wisconsin - Madison; ² 4-Control, Inc.; ³ University of Wisconsin Extension*

9:50AM Extended Panel Discussion/Q&A

Regulatory Toolbox for Invasive Species Prevention & Management

Moderator: Julie Weisenhorn, University of Minnesota Extension

8:30AM Listing Noxious Weed Seeds in Minnesota: A Risk Assessment Model

Michael Merriman, Denise Thiede, Don Opdahl; Minnesota Department of Agriculture*

8:50AM Timeline of Palmer Amaranth in Minnesota

Eric Yu, Shane Blair, Monika Chandler, Anthony Cortilet, Denise Thiede; Minnesota Department of Agriculture*


9:10AM Executive Action on Aquatic Invasive Species in the Great Lakes Basin

Kevin Irons; Illinois Department of Natural Resources

9:30AM The Success of Injurious Wildlife Listing Under the Lacey Act


*Susan Jewell*¹ and Pam Fuller²; ¹ U.S. Fish and Wildlife Service; ² U.S. Geological Survey*

9:50AM Extended Panel Discussion/Q&A

 = Aquatic Track

 = Forest Health Track

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 = Interdisciplinary

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Friday, November 6, 2020 - Early Morning Concurrent Sessions, cont.

Biological Control of Forest Pests

Moderator: Kelsey Taylor, Fond du Lac Band of Lake Superior Chippewa

8:30AM Emerald Ash Borer Biological Control: A Management Strategy for the Forest

Chris Mallet*¹, Angie Ambourn¹, Jonathan Osthus¹, Brian Aukema², Rob Venette^{2&3}; ¹ Minnesota Department of Agriculture; ² University of Minnesota; ³ USDA - Forest Service

8:50AM The Continued Search for Associational Protection against Emerald Ash Borer

Dora Mwangola*¹, Jennifer Burrington², Angie Ambourn², Mark Abrahamson², Brian Aukema¹; ¹ University of Minnesota; ² Minnesota Department of Agriculture

9:10AM Cold Tolerance and Overwintering Mortality of *Spathius galinae* in Minnesota

Jacob Wittman*¹, Jian Duan², Rob Venette^{1&3}, Brian Aukema¹; ¹ University of Minnesota; ² USDA - Agricultural Research Service; ³ USDA - Forest Service

9:30AM Is There a Way Forward for the Biological Control of Common Buckthorn, *Rhamnus cathartica*?

Philip Weyl* and Harriet Hinz; CABI

9:50AM Crown Rust Fungus Infects Two Wetland Invaders: Glossy Buckthorn and Reed Canarygrass

Nicholas Greatens*¹, Pablo Olivera Firpo¹, Yue Jin²; ¹ University of Minnesota; ² USDA - Agricultural Research Service

WIGL Summit 4: Integrated Strategies for Woody Invasive Control

Moderator: Chris Evans, University of Illinois Extension

Session Sponsor: The Woody Invasives of the Great Lakes Collaborative

8:30AM Choosing the Right Tools for Mechanical Control of Woody Invasive Species

Chris Evans; University of Illinois Extension

8:50AM Directed Flaming to Control Invasive Plants

Jeffery Ward; Connecticut Agricultural Experiment Station


9:10AM Integrated Management of Woody Invasives in a Remnant Forest Ecosystem

Kurt Dreisilker; The Morton Arboretum

9:30AM Prescribed Grazing for Managing Invasive Woody Vegetation in Eastern Hardwood Forests

Ron Rathfon; Purdue Extension

9:50AM Extended Q&A

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Friday, November 6, 2020

LATE MORNING CONCURRENT SESSIONS

On our Radar: New Terrestrial Invasive Plant Threats to the Upper Midwest

Moderator: Monika Chandler, Minnesota Department of Agriculture

10:30AM Carrot Family Identification, Part 1 - Smaller Species

Dave Hanson; Minnesota Department of Transportation

10:50AM Carrot Family Identification, Part 1 - Larger Species

Dave Hanson; Minnesota Department of Transportation

11:10AM Public Gardens as Sentinels against Invasive Plants

*Kurt Dreisilker*¹, Theresa Culley², Clair Ryan², Hans Landel³, Brittany Schultz⁴, Nadia Cavallin⁵, Roger Gettig⁶, Sai Ravichandran¹; ¹The Morton Arboretum; ²Midwest Invasive Plant Network; ³Ladybird Johnson Wildflower Center; ⁴Missouri Botanical Garden; ⁵Royal Botanical Garden; ⁶Holden Arboretum*

11:30AM Heads Up! What we can Learn From our Neighbors - Survey Results and Lightning Talks

Speakers TBD

Workshop: R Statistical Software for Invasive Species Applications

Instructor: Matthew Russell; University of Minnesota

10:30AM - 12:10PM - [Please register here](#) (included with UMISC registration)

Silvicultural Responses to Invasive Species

Moderator: Anne Pearce, University of Wisconsin - Madison

10:30AM Wisconsin's Emerald Ash Borer Management Toolkit

Colleen Matula and Paul Cigan*; Wisconsin Department of Natural Resources*

10:50AM Native Plant Community Silviculture Strategies Managing Black Ash Forests in Minnesota

Paul Dubuque and Mike Reinikainen*; Minnesota Department of Natural Resources*


11:10AM Trees and Shrubs in Current and Former Oak Wilt Pockets

Brian Schwingle, Rachael Nicoll, Megan O'Neil, Eric Otto; Minnesota Department of Natural Resources*

11:30AM Minnesota's Dwarf Mistletoes: Investigating a Novel Invasive Through a Native System


Ella Gray, Marcella Windmuller-Campione, Matthew Russell; University of Minnesota*

11:50AM Extended Panel Discussion/Q&A

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Friday, November 6, 2020 - Late Morning Concurrent Sessions, cont.

WIGL Summit 5: Herbicide Use to Control Woody Invasive Species

Moderator: Mark Renz, University of Wisconsin - Madison

Session Sponsor: The Woody Invasives of the Great Lakes Collaborative

10:30AM Choosing the Right Application Method for Woody Invasives

Stephen Enloe, University of Florida

10:50AM Choosing the Herbicide for Woody Invasives

Stephen Enloe, University of Florida

11:10AM Application Method Lightning Round & Industry Product Updates

Low-volume foliar application - Jim Bean, BASF Corporation

Hack-and-squirt/stem-injection - Jason Belcher, Bayer

Low-volume basal bark, cut stump, dormant stem application - Scott Flynn, Corteva Agriscience

AFTERNOON CONCURRENT SESSIONS

Landscape Scale Management Approaches

Moderator: Anne Pearce, University of Wisconsin - Madison

1:30PM Lessons, Experiences and Insights on Invasive Vegetation Management

Todd Polacek, Brandon Moore*, Fugui Wang; Applied Ecological Services*

1:50PM Innovative Control Methods and Tools to Control Invasive Species on Tribal Lands

Michael Arce; Oneida Nation - Environmental Health, Safety and Land Division


2:10PM The Progression of Pulling Together: Becker County Cooperative Weed Management Area Plan 2006-2020

Marsha Watland; Becker County Cooperative Weed Management Area & Becker County SWCD

2:30PM Challenges of Riverside Japanese Hop (*Humulus japonicus*) Eradication in Southeast Minnesota


*Christina Basch*¹, Monika Chandler¹, Emilie Justen¹, Shane Blair¹, Barb Perry², Edward Dittmer³; ¹ Minnesota Department of Agriculture; ² Minnesota Department of Natural Resources; ³ Conservation Corps of MN and IA*

2:50PM Extended Panel Discussion/Q&A

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Friday, November 6, 2020 - Afternoon Concurrent Sessions, cont.

Lessons Learned in Starry Stonewort Management

Moderator: Michelle Nault, Wisconsin Department of Natural Resources

1:30PM The Starry Stonewort Collaborative

David Carr; Finger Lakes Institute

1:50PM Predictive Modelling Assessment of Suitable Habitats for Starry Stonewort (*Nitellopsis obtusa*)

*Emily Neuman*¹, Sean Woznicki ¹, Kenneth Karol ², James McNair ¹, Sarah Hamsher ¹; ¹Grand Valley State University; ²New York Botanical Garden*

2:10PM Monitoring and Management of Starry Stonewort (*Nitellopsis obtusa*) in Wisconsin Lakes

Michelle Nault; Wisconsin Department of Natural Resources

2:30PM Multi-year Evaluation of Copper Sulfate and Hydrothol 191 to Control Starry Stonewort in a Central Minnesota Lake

Kylie Cattoor, Keegan Lund*, April Londo; Minnesota Department of Natural Resources*

2:50PM Large-scale Management of Starry Stonewort (*Nitellopsis obtusa*) in a Large Minnesota Lake

Christine Jurek and Emelia Hauck Jacobs; Minnesota Department of Natural Resources*

WIGL Summit 6: Public Perceptions & Engagement to be Part of the Solution!

Moderator: Caroline Marschner, Cornell University Extension

Session Sponsor: The Woody Invasives of the Great Lakes Collaborative

1:30PM Best Practices for Public Engagement

Ken Donnelly, Beyond Attitude Consulting

1:50PM Engaging Private Residential Neighbors in Controlling Buckthorn to Benefit a Sensitive Natural Area

Mathew Ueltzen and Brett Peto*, Lake County Forest Preserve District*

2:10PM Just Because it's Sold Doesn't Mean it's Good - Using Landscape Alternatives to make Good Plant Choices

Clair Ryan, Midwest Invasive Plant Network


2:30PM Tweet! Post! Like! Using Social Media to Promote Forest Health and Invasive Species Awareness

David Coyle, Clemson University

WIGL SUMMIT WRAP-UP & SOCIAL


3:00 - 4:00PM

We might be pushing our luck a bit at the end of a long day and a long conference. But we'd love to hear any feedback you have for us on how to improve our messaging on invasive woody management issues. Grab your favorite snack and stay the whole time or as long as you're able. This is a live Zoom event (not livestreamed).

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UMISC 2020 Poster Hall

2021 Invasive Species Calendar from the Minnesota Invasive Species Advisory Committee

Laura Van Riper¹, Missy Anderson², Jennifer Burington³, Sascha Lodge¹; ¹ Minnesota Department of Natural Resources; ² Three Rivers Park District; ³ Minnesota Department of Agriculture

A Simple(r) Method to Measure PCR Inhibition by Environmental DNA Templates

Craig Jackson, Chris Merkes, and Jon Amberg; U.S. Geological Survey

Advancing Host-plant Resistance for Sustainable Management of Soybean Aphid

Siddhi Bhusal, Robert Koch, and Aaron Lorenz; University of Minnesota

An Update: Biological Control of Garlic Mustard with Crown-Boring and Seed-Feeding Weevils

Elizabeth Katovich¹, Roger Becker¹, Ghislaine Cortat², Hariet Hinz², Laura Van Riper³, Mary Marek-Spartz¹; ¹ University of Minnesota; ² CABI; ³ Minnesota Department of Natural Resources

Biological Control of Emerald Ash Borer in Minnesota

Patrick Walrath¹, Angie Ambourn¹, Jonathan Osthus¹, Christopher Mallet¹, Monika Chandler¹, Brian Aukema²; ¹ Minnesota Department of Agriculture; ² University of Minnesota

Building Resiliency in Black Ash in Preparation for Emerald Ash Borer

Colleen Matula and Graham Wessberg; Wisconsin Department of Natural Resources

Comparison of Early Detection Survey Approaches during Two New Fish Introductions

Greg Peterson¹, Joel Hoffman¹, Anett Trebitz¹, Chelsea Hatzenbuehler², Jared Myers³, Erik Pilgrim¹, Sara Okum¹; ¹ U.S. Environmental Protection Agency; ² Badger Technical Services; ³ U.S. Fish and Wildlife Service

Developing Airborne eDNA Technology to Detect Hemlock Woolly Adelgid (*Adelges tsugae*)

Meg Sanders and Charlyn Partridge; Annis Water Resources Institute, Grand Valley State University

Garlic Mustard Monitoring Efforts Inform a Coupled Weed-Herbivore Population Model for Simulating the Release of Potential Biocontrol Agents

Mary Marek-Spartz¹, Roger Becker¹, George Heimpel¹, Lori Knosalla², Rebecca Montgomery¹; ¹ University of Minnesota; ² Minnesota Department of Natural Resources

Global Genetic Diversity in Hydrilla (*Hydrilla verticillata*) and Evidence for a Novel Invasive Strain in North America

Nicholas Tippery¹, Lori Benoit², Donald Les², Gregory Bugbee³, Summer Stebbins³; ¹ University of Wisconsin - Whitewater; ² University of Connecticut; ³ Connecticut Agricultural Experiment Station

Improvements to Drone Technology for Effective Pest and Noxious Weed Management

Curtis Olsen¹, Kerry Sun¹, Inchara Laksmiaryan¹, Eric Yu², Domo Gebre-Egziabher¹; ¹ University of Minnesota; ² Minnesota Department of Agriculture

Invasive Species and Citizen Science Initiatives while Social Distancing

Angela Gupta; University of Minnesota Extension

Invasive Species Signage Anyone?

Anna Peterson¹, Doug Jensen¹, Christopher Filstrup²; ¹ Minnesota SeaGrant; ² Natural Resources Research Center



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UMISC 2020 Poster Hall (continued)

Multi-agency Cooperation in Managing Garlic Mustard within the Northwoods Cooperative Weed Management Area
Ramona Shackelford; Northwoods Cooperative Weed Management Area

Native Pine Engravers Avoid Pheromones of Mountain Pine Beetle
Zach Smith, Aubree Kees, Brian Aukema; University of Minnesota

Predicting Range Expansion of Invasive Species: Obtaining Biologically Realistic Projections
Thomas Lake; University of Minnesota

Prioritizing Minnesota's Top Terrestrial Invasive Plants & Pests for Research
Rob Venette and Amy Morey; University of Minnesota

Ratings of Invasive Species of Concern to Minnesota
Laura Van Riper¹, Missy Anderson², Jennifer Burington³, Megan Weber³; ¹ Minnesota Department of Natural Resources; ² Three Rivers Park District; ³ University of Minnesota Extension

Reporting Northeast Minnesota Aquatic Invasive Species Sightings
Alyssa Hagemeyer¹, Doug Jensen¹, Josh Dumke²; ¹ Minnesota SeaGrant; ² Natural Resources Research Institute

Spotlight on ISM Track
Mari Hardel¹, Monika Chandler¹, Christina Basch¹, Anne Pearce², Bob Dunning³, Chuck Barger⁴; ¹ Minnesota Department of Agriculture; ² Wisconsin First Detectors Network; ³ Stearns County, Minnesota; ⁴ University of Georgia

Using DNA Tools to Elucidate Source of Dreissena to Western Lake Superior
Jonathan Barge, Chelsea Hatzenbuehler, Anne Cotter, Joel Hoffman, Christy Meredith, Greg Peterson, Sara Okum, Erik Pilgrim, Barry Weichman, Anett Trebitz; U.S. Environmental Protection Agency

