



2021 Research and Management Showcase

Presenter Bios



Przemek Bajer, PhD

Przemek Bajer is a Research Assistant Professor at the Minnesota Aquatic Invasive Species Research Center. He works on developing sustainable control solutions for the common carp. Most recently, he has been working on exploiting carp's social behaviors to train these fish to aggregate around bait and remove them in large numbers. He is currently also working on using the Whoosh System to remove carp from streams during spawning migrations. In addition to leading several research projects, he is the founder and owner of Carp Solutions LLC, a University of Minnesota startup company that works with local governments and citizens to help them manage their carp populations. When he's not chasing carp, he loves to fly fish for trout and steelhead.

Panel - Common Carp Management - 3:15 PM Web Room 2



Scott Ballantyne, PhD

Scott Ballantyne is a Professor of Biology at the University of Wisconsin - River Falls. His expertise is in molecular biology and specifically RNA regulation during early animal development. He became interested in zebra mussel control when they were recently discovered in his favorite lake. With the Minnesota Aquatic Invasive Species Research Center, he is conducting a project on the use of RNA interference to screen for zebra mussel biocontrol target genes.

Identifying Genes for Zebra Mussel Biocontrol - 11:15 AM & 3:15 PM Web Room 3



Julia Bohnen, PhD

Julia is involved in both research and teaching related to ecological restoration and invasive species management. Julia's current research involving non-native *Phragmites australis* (common reed) has several facets: 1) document populations in Minnesota 2) work with agency staff to facilitate a coordinated control effort 3) work with wastewater treatment facilities to transition away from the use of invasive *Phragmites* 4) work with U of M researchers to screen native *Phragmites* for use as an alternative for biosolids dewatering in wastewater treatment facilities. Julia also facilitates learning in a series of online ecological restoration courses, offered through Extension, that are targeted to early career professionals. She has 14 years of project management experience from the Minnesota Landscape Arboretum, where she was responsible for restoring, managing, and monitoring Spring Peeper Meadow, a landscape-scale ecological restoration.

Invasive *Phragmites* Control Efforts in Minnesota - 9:15AM & 2:15 PM Web Room 4



Valerie Brady, PhD

Valerie Brady is a Senior Research Program Manager at the University of Minnesota Duluth's Natural Resources Research Institute. She works on using aquatic invertebrates and fish to indicate the condition of aquatic ecosystems, as well as investigating effects of AIS on aquatic ecosystems. Her research with the Minnesota Aquatic Invasive Species Research Center focuses on an evaluation of the risk of dispersal of spiny water flea by angling equipment. Among other projects, she coordinates the Great Lakes Coastal Wetland Monitoring Program for USEPA GLNPO and teaches Wetlands Ecology.

Outreach Campaign to Prevent the Spread of Spiny Water Fleas - 10:15 AM & 3:15 PM Web Room 1



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Angelique Dahlberg

Angelique is a graduate student in the Phelps lab at the Minnesota Aquatic Invasive Species Research Center working towards a Ph.D. in Conservation Sciences. She received an M.S. in Integrated BioSciences from the University of Minnesota Duluth and a B.S. in Biological Aspects of Conservation from the University of Wisconsin Madison. Angelique also spent five years working for regional non-profits to manage and mitigate the impacts of invasive species. Angelique's current research investigates suppression methods for controlling zebra mussel populations in Minnesota lakes.

Low-Dose Copper for Suppression of Zebra Mussels in Minnesota Lakes - 11:15 AM & 2:15 PM Web Room 1



Kiley Davan

Kiley Davan is a PhD student in Dr. David Fulton's lab who is working towards a degree in the Conservation Sciences program. She received her M.S. in Wildlife and Fisheries Science at the University of Tennessee Knoxville and her B.S. in Wildlife Ecology from the University of Maine Orono. At the University of Minnesota, she will be exploring the public's understanding and attitudes of the use of genetic biocontrol to manage invasive species.

Genetic Biocontrol - Attitudes and Perceptions - 10:15 AM & 1:15 PM Web Room 2



Josh Dumke

Josh works on fisheries and aquatic ecology research within lakes and streams all around the Great Lakes basin, and inland Minnesota. Research interests include learning how native species interact with invasive species, identifying mechanisms of over-land transport supporting the spread of aquatic invasive species into new waterbodies, and ways to improve detection of invasive species. Josh spends all possible time hunting, fishing, trapping, milling lumber, and teaching his two boys about the outdoors and stewardship of natural resources.

Optimizing eDNA Monitoring for Multiple AIS - 9:15 AM & 1:15 PM Web Room 5



Daryl Gohl, PhD

Daryl Gohl leads the UMN Genomics Center's Innovation Lab and is a Research Assistant Professor in the Department of Genetics, Cell Biology, and Development at the UMN. Dr. Gohl's work focuses on developing new techniques for genomics-based measurements and genetic manipulation of complex biological systems. Dr. Gohl has applied such methods to diverse problems, from accurately measuring microbial communities, to studying the nervous system and infectious diseases such as HIV and the recent coronavirus pandemic. Dr. Gohl was part of the team that sequenced the zebra mussel genome, and is now working to use this genomic information to develop methods to genetically manipulate zebra mussels and to identify a genetic achilles heel that could aid biocontrol efforts.

Identifying Genes for Zebra Mussel Biocontrol - 11:15 AM & 3:15 PM Web Room 3



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Robert Haight, PhD

Robert Haight is a Research Forester and Project Leader with the USDA Forest Service Northern Research Station located on the St. Paul Campus of the University of Minnesota. Robert earned a Ph.D. in forest management from Oregon State University in 1985, joined Forest Service Research in 1987, and has since studied the economics of wildlife conservation, wildfire management and invasive species management. Robert is currently working with state and county planners in Minnesota to help analyze the efficiency and efficacy of watercraft inspection efforts.

Improving the Efficiency of Watercraft Inspections Through Coordination and Cooperation - 11:15 AM & 2:15 PM Web Room 5



Gretchen Hansen, PhD

Gretchen Hansen is an assistant professor in the Fisheries, Wildlife, and Conservation Biology Department at the University of Minnesota. Her research focuses on large scale drivers of change in freshwater ecosystems, including climate, land use, and invasive species. She is especially interested in how local management and lake characteristics influence the resilience of fish populations and communities to regional and global change. Gretchen previously worked as a research scientist for state fisheries management agencies, and is committing to conducting actionable science via collaboration with stakeholders and managers. To answer complex questions she employs multiple approaches including statistical analyses of historical data, observational field studies, simulation modeling, and large-scale experimentation.

Eurasian Watermilfoil Ecology and Impacts - 9:15 AM & 2:15 PM Web Room 3



Amy Kinsley, PhD

Gretchen Hansen is an assistant professor in the Fisheries, Wildlife, and Conservation Biology Department at the University of Minnesota. Her research focuses on large scale drivers of change in freshwater ecosystems, including climate, land use, and invasive species. She is especially interested in how local management and lake characteristics influence the resilience of fish populations and communities to regional and global change. Gretchen previously worked as a research scientist for state fisheries management agencies, and is committing to conducting actionable science via collaboration with stakeholders and managers. To answer complex questions she employs multiple approaches including statistical analyses of historical data, observational field studies, simulation modeling, and large-scale experimentation.

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Jessica Kozarek, PhD

Jessica Kozarek is a Research Associate at St. Anthony Falls Laboratory. Her research focuses on ecohydraulics (or the interactions between flow, sediment, and aquatic biota), and stream and river restoration and management. She has just begun a new project with the Minnesota Aquatic Invasive Species Research Center to test the feasibility of multi-beam sonar methods to detect zebra mussel beds.

Multibeam Sonar for Zebra Mussel Detection - 10:15 AM & 1:15 PM Web Room 3



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Dan Larkin, PhD

Dr. Larkin specializes in aquatic and wetland plant management and restoration. His research addresses applied problems concerning how to reduce the spread and impacts of invasive plant species and support the recovery of impacted areas through ecological restoration and management. His work with MAISRC involves research and extension on risk assessment, control, and post-treatment restoration of aquatic habitats affected by Eurasian watermilfoil, curly-leaf pondweed, non-native *Phragmites*, starry stonewort, and other invasive plants.

Invasive *Phragmites* Control Efforts in Minnesota - 9:15 AM & 2:15 PM Web Room 4

Restoring Native Aquatic Vegetation - State of the Field - 1:15 & 3:15 PM Web Room 4



Meg McEachran

Meg McEachran is a Ph.D. candidate in the Phelps lab at the Minnesota Aquatic Invasive Species Research Center studying the release of live bait by anglers as a potential pathway for the spread of invasive species. She's interested in taking an interdisciplinary approach to AIS issues drawing from disease ecology, conservation biology, and the social sciences.

Illegal Release of Live Baitfish by Recreational Anglers Drives Fish Pathogen Introduction Risk in Minnesota - 9:15AM & 1:15 PM Web Room 1



Ray Newman, PhD

Ray Newman is a Distinguished Teaching Professor in the Department of Fisheries, Wildlife and Conservation Biology at the University of Minnesota specializing in aquatic invasive plants. He is passionate about aquatic ecology and understanding the interaction between plants, invertebrates, and fish. His work with the Minnesota Aquatic Invasive Species Research Center includes restoring native plant communities after invasive plants - such as Eurasian watermilfoil and Curly-leaf pondweed - have been introduced and assessing the distribution of hybrid watermilfoil and management implications of different genotypes. He was previously researching sustainable methods of biocontrol involving weevils and integrated approaches to milfoil management.

Genetic Tools for Watermilfoil Management - 10:15 & 11:15 AM Web Room 4



Nick Phelps, PhD

Nicholas Phelps is Director of the Minnesota Aquatic Invasive Species Research Center and Assistant Professor in the Fisheries, Wildlife, and Conservation Biology Department. His research broadly focuses on emerging threats to aquatic ecosystem health and sustainability, including aquatic invasive species, infectious diseases of farmed and wild fish, and risk assessment. His work with MAISRC has consisted of risk assessments for Viral Hemorrhagic Septicemia Virus, invasive pathogen discovery, biological control of carp species, understanding the impacts of Heterosporosis, and predicting the spread and establishment of a variety of AIS.

Illegal Release of Live Baitfish by Recreational Anglers Drives Fish Pathogen Introduction Risk in Minnesota - 9:15AM & 1:15 PM Web Room 1

Panel - Common Carp Management - 3:15 PM Web Room 2



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Steven Polasky, PhD

Stephen Polasky is a Regents Professor and the Fesler-Lampert Professor of Ecological/Environmental Economics at the University of Minnesota where he has a joint appointment in the Department of Applied Economics and the Department of Ecology, Evolution & Behavior. Stephen is also a fellow of the University's Institute on the Environment. Stephen's research interests focus on issues at the intersection of ecology and economics and include the impacts of land use and land management on the provision and value of ecosystem services and natural capital, biodiversity conservation, sustainability, environmental regulation, renewable energy, and common property resources.

Eurasian Watermilfoil Ecology and Impacts - 9:15 AM & 2:15 PM Web Room 3



Amit Pradhananga, PhD

Amit Pradhananga's research centers on investigating linkages between natural environments and human systems. He has applied qualitative and quantitative social science research methodologies to examine the human, social, and policy dimensions of natural resources in the context of water resource, forest, invasive species, and recreation resource management, as well as climate change adaptation. His research areas include: 1) social and psychological drivers of conservation behavior, and 2) diversity and inclusion in environmental planning and management. In the area of AIS management, he is interested in understanding public perceptions and values related to AIS and AIS management.

Panel - Common Carp Management - 3:15 PM Web Room 2



Chris Rounds

Christopher Rounds is working toward his M.S. the Conservation Sciences program at the University of Minnesota. Chris is a member of the Hansen Lab and is working on a project using environmental DNA. The project seeks to optimize the detection of invasive species using eDNA and understand how detection rates of invasive species change seasonally, spatially and during different life history periods. With this project, Chris would love to help agencies develop best practices for using eDNA to detect and sample invasive species. During his free time, Chris enjoys spending time in the great outdoors, reading, and eating the best pizza in Minnesota.

Optimizing eDNA Monitoring for Multiple AIS - 9:15 AM & 1:15 PM Web Room 5



Amy Schrank

Amy Schrank is a fish ecologist studying how human activities affect aquatic ecosystems and fishes. Her research with MAISRC examines how hybrid cattail affects native plant and fish communities in nearshore lake ecosystems. Her other projects include understanding how dams affect fish movement patterns in streams as well as research and outreach to gauge the potential for a sustainable aquaculture industry in the Great Lakes region. In addition to research, she collaborates with fisheries and aquaculture researchers and stakeholders around Minnesota to provide research support and a bridge to communicate technical information to stakeholders, managers, and the public.

Enhancing Habitat and Diversity in Cattail-Dominated Shorelines - 9:15 & 11:15 AM Web Room 2



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Mike Smanski, PhD

Michael Smanski is an Assistant Professor of Biochemistry in the College of Biological Sciences. His expertise is in natural product discovery, genome mining, and genetic systems engineering. With the Minnesota Aquatic Invasive Species Research Center, he is conducting a project on the genetic control of invasive fish.

Panel - Common Carp Management - 3:15 PM Web Room 2



Mike Verhoeven

Mike Verhoeven is a MAISRC Graduate Fellow. His research focuses on ecology of aquatic plants, especially management of aquatic invasive plants and restoration of native plants. His work uses stakeholder-contributed plant surveys to evaluate aquatic plant management in the state of Minnesota and field experiments to assess ecological mechanisms that drive the dynamics of invasive plants.

Restoring Native Aquatic Vegetation - State of the Field - 1:15 & 3:15 PM Web Room 4



Diane Waller, PhD

Diane is a research fishery biologist with the USGS Upper Midwest Environmental Sciences Center in LaCrosse, WI. Her research focuses on development and evaluation of selective management strategies for aquatic invasive species, particularly zebra and quagga mussels. She is especially interested in developing control tools and application methods that minimize impacts to nontarget species. Diane also conducts research on native freshwater mussels including life history studies, development of health assessment tools and investigating causes of mussel mortality events.

Low-Dose Copper for Suppression of Zebra Mussels in Minnesota Lakes - 11:15 AM & 2:15 PM Web Room 1



Megan Weber

Megan Weber is an Extension Educator at the Minnesota Aquatic Invasive Species Research Center and University of Minnesota Extension. Megan's work focuses on the development and delivery of AIS education, volunteer, and citizen science programs that work towards solutions to aquatic invasive species problems. Megan completed her B.S. in marine biology at the University of California Santa Cruz and her M.S. in environmental studies at San Jose State University before returning to her home state of Minnesota to work on invasive species issues.

Frozen: Can invasive freshwater golden clams withstand Minnesota's winters? - 10:15 AM & 3:15 PM Web Room 5