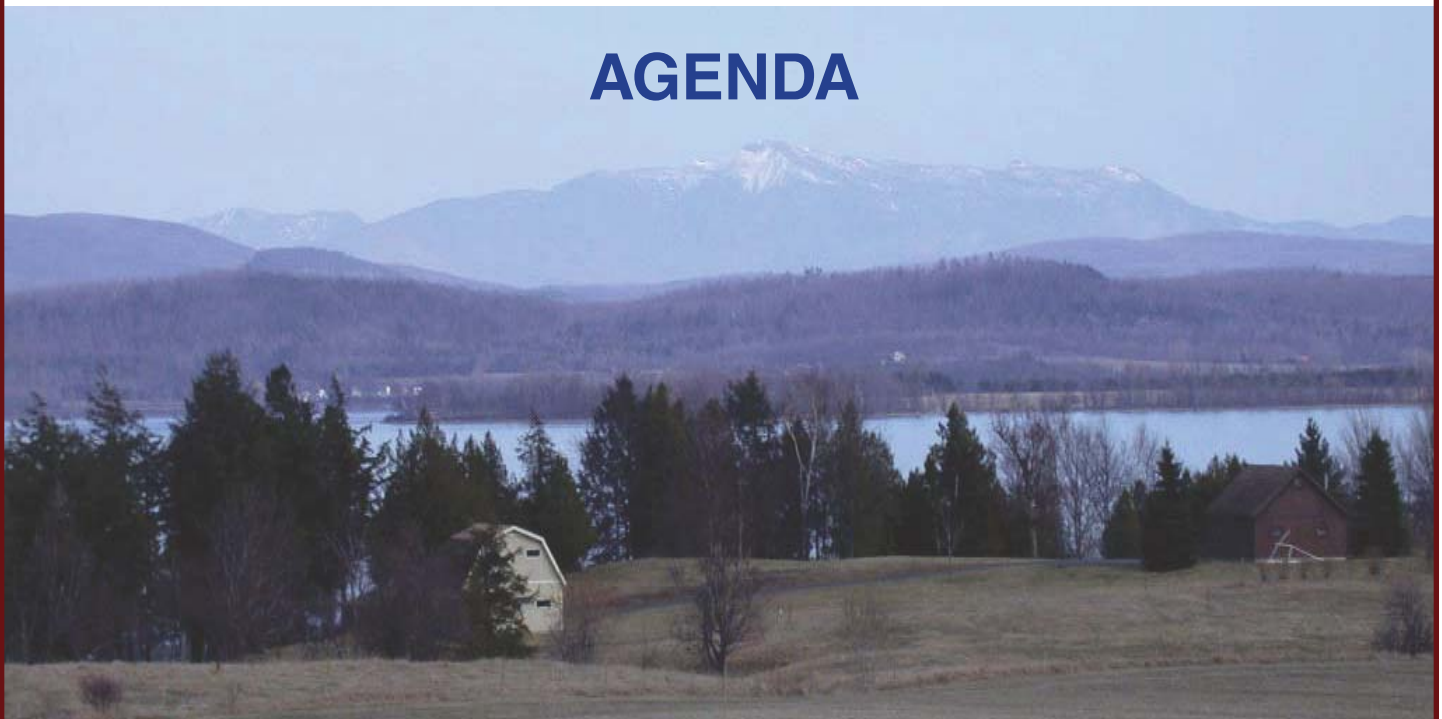


Climate Change Adaptation: Stormwater Management and Aquatic Ecosystem Impacts Workshops

March 25 - 26, 2014
Hilton Inn, Burlington, VT

AGENDA



For more information about the Climate Change Adaptation
workshop series, please visit www.lcbp.org.



Climate Change Adaptation: Stormwater Management in the Lake Champlain Basin

Workshop Agenda

Tuesday, March 25, 2014

Green Mountain Room C

8:00 am - 9:00 am	<p style="text-align: center;"><i>Registration</i> <i>Coffee/Tea in Seasons on the Lake Room, 2nd Floor</i></p>
9:00 am - 9:05 am	<p style="text-align: center;">Opening Remarks: Dr. Eric Howe and Stephanie Castle, LCBP</p>
9:05 am - 10:00 am	<p style="text-align: center;">Plenary- "Understanding local and regional climate change: Implications for water resource management in the Lake Champlain Basin"</p> <p style="text-align: center;">Dr. Lesley-Ann Dupigny-Giroux, Vermont State Climatologist and Professor at UVM</p>
10:00 am - 10:30 am	<p style="text-align: center;"><i>Break (Mezzanine)</i></p>
10:30 am - 12:00 pm	<p style="text-align: center;">Findings, Issues and Recommendations from Green Infrastructure</p> <ul style="list-style-type: none"> • Mike Winslow: Building Community Flood Resilience: Lessons from Irene • Julie Moore: Stormwater Master Planning Around the Basin • Stephanie Hurley: <i>Green Stormwater Infrastructure: Implementation and Monitoring</i> <p style="text-align: center;"><u>Moderator:</u> Justin Kenney, VT DEC</p> <p style="text-align: center;">GOAL: <i>Green Infrastructure Recommendations for Climate Change</i></p>
12:00 pm - 1:00 pm	<p style="text-align: center;"><i>Lunch Buffet (Seasons on the Lake Room, 2nd Floor)</i></p>
1:00 pm - 3:00 pm	<p style="text-align: center;">Boots on the Ground: Applying Low Impact Design Standards (LIDS) in the Champlain Basin</p> <ul style="list-style-type: none"> • Padraic Monks: Vermont Stormwater Regulations and Low Impact Development • Emily DeBolt: Low Impact Design in the Lake George Watershed • Megan Moir: College Street Stormwater Retrofit Project Update • Tom Baird: Lake George Case Studies: Green Infrastructure, Cold Weather & Transportation Projects <p style="text-align: center;"><u>Moderator:</u> Jenn Callahan, VTtrans</p> <p style="text-align: center;">GOAL: <i>Management Strategies that Work in the Lake Champlain Basin</i></p>
3:00 pm - 3:30 pm	<p style="text-align: center;"><i>Break (Mezzanine)</i></p>
3:30 pm - 5:00 pm	<p style="text-align: center;">Roundtable Panel- Climate Adaptation and Stormwater Management in the Lake Champlain Basin</p> <ul style="list-style-type: none"> • Kevin Farrington (<i>City of Plattsburgh</i>) • Tom DiPietro (<i>City of South Burlington</i>) • Amy Macrellis (<i>Stone Environmental</i>) <p style="text-align: center;"><u>Moderator:</u> Becky Tharp, Sea Grant</p> <p style="text-align: center;">GOAL: <i>Suite of Management Tools for Stormwater/Climate</i></p>
5:00 pm	<p style="text-align: center;"><i>Adjourn</i></p>



Climate Change Adaptation: Impacts on Lake Champlain's Aquatic Ecosystem

Workshop Agenda

Wednesday, March 26, 2014

Seasons on the Lake Room

9:00 am - 10:00 am	Registration/NEAEB Exhibits (Mezzanine)
10:00 am - 10:05 am	Opening Remarks: Meg Modley and Stephanie Castle, LCBP
10:05 am - 11:00 am	Plenary- "Climate Change in the Champlain Basin" Dr. Curt Stager, Science Writer and Professor at Paul Smith's College
11:00 am - 12:00 pm	How Can AIS Management Be Prepared for Climate Change? Facilitated by: Ellen Marsden and Mark Malchoff GOAL: Preparation tools for climate change
12:00 pm - 1:00 pm	Lunch Buffet (Lake Champlain Salon) (NEAEB starts at 1 pm)
1:00 pm - 3:00 pm	Predicted Impacts on Native Aquatic Species: How to Manage Climate Change in Lake Champlain <ul style="list-style-type: none"> • Tim Mihuc: Long-term Patterns in Lake Champlain Plankton: the role of Invasive Species and Climate Change • Jason Stockwell: <i>Impacts of Cyanobacteria Blooms on Essential Fatty Acid Transfer to Fish</i> • Dan Isaak: Climate Change, Crowd-Sourcing, and 21st Century Conservation of Fish and Aquatic Resources <p>Moderator: Bill Ardren, USFWS</p> <p>GOAL: How to Apply Management Tools in the Champlain Basin</p>
3:00 pm - 3:30 pm	Break (Mezzanine)
3:30 pm - 5:00 pm	Roundtable Panel- ANS Management Tools: What's Working, What's Not? <ul style="list-style-type: none"> • Emily DeBolt (LGA) • Eric Holmlund (Paul Smith's) • Matt Probasco (VT DEC) <p>Moderator: Meg Modley, LCBP</p> <p>GOAL: Suite of ANS Management Tools</p>
5:00 pm - 5:30 pm	Walk to ECHO Lake Aquarium for NEAEB Poster Session
5:30 pm - 7:30 pm	Poster Reception/Networking at ECHO Lake Aquarium Co-Sponsored by NEAEB and LCBP
7:30 pm	Adjourn



Climate Change Adaptation and Stormwater Management Sessions

9:00-10:00 **Plenary:** “Understanding local and regional climate change: Implications for water resource management in the Lake Champlain Basin.” Dr. Lesley-Ann Dupigny-Giroux will give an overview of local and regional climate shifts, providing some background science to better understand the impacts. She will outline how climate change may alter management needs, with specific implications for water resource managers in the greater Lake Champlain watershed. Her talk will provide fundamental climate change science for the rest of the workshop.

10:30-12:00 **Findings, Issues and Recommendations from Green Infrastructure**
Moderated by Justin Kenney, Green Infrastructure Coordinator for Vermont Department of Environmental Conservation

This session will focus on climate-related green infrastructure recommendations. How can green infrastructure be used to better prepare for future climate shifts? What have we learned from past storm events? What will green infrastructure look like in 10 years? Mike Winslow (LCC) will present on Lessons Learned from Irene, which will focus on good shoreline management practices to keep in mind to prepare for the next big storm. Dr. Stephanie Hurley (UVM) will provide an overview of ecological landscape design solutions for sustainable stormwater management. Julie Moore (Stone Environmental) will highlight her recent work in the northern Lake Champlain region focusing on stormwater master planning.

1:00-3:00 **Boots on the Ground: Applying Low Impact Design Standards (LIDS) in the Champlain Basin**

Moderated by Jenn Callahan, Operations Stormwater Technician for the Vermont Agency of Transportation

How is green infrastructure being applied in the Champlain Basin? This session will focus on project outcomes from around the basin, with speakers sharing their insights for how to apply low impact design standards to prepare for future storm events. Padraic Monks (VT DEC) will discuss progress made on the Vermont Stormwater Manual. Emily DeBolt (LGA) will present recent sustainable stormwater project outcomes from Lake George. Megan Moir (City of Burlington) will share highlights from the College Street stormwater retrofit project completed last year. And Tom Baird (Barton & Loguidice) will show how pervious pavements in Lake George can prevent cold weather storm damage.

3:30-5:00 **Climate Adaptation and Stormwater Management in the Lake Champlain Basin**
Moderated by Becky Tharp, Land Use Planning and Water Quality Educator at Lake Champlain Sea Grant

This roundtable discussion with Kevin Farrington (City of Plattsburgh), Tom DiPietro (City of South Burlington) and Amy Macrellis (Stone Environmental) will focus on how cities around Lake Champlain can adapt to climate change. Panelists will share stormwater project successes, failures and constructive advice to prepare for the next big storm. What are the best tools for success? What are some complications? The result of this discussion will be a suite of management tools for stormwater operators to prepare for the effects of a changing climate.



Climate Change Adaptation: Impacts on Lake Champlain's Aquatic Ecosystem Sessions

10:00-11:00 **Plenary:** "Climate Change in the Champlain Basin." Dr. Curt Stager will provide an overview of climate impacts on the local and regional level. He will use cutting edge research to illustrate how more frequent storm events, warmer winters and rising temperatures may impact both native and invasive aquatic species. Drawing from his 2010 Nature Conservancy report, Dr. Stager will discuss what we may expect to see in the next several years.

11:00-12:00 **Discussion: How Can AIS Management Prepare for Climate Change?**

Facilitated by Dr. J. Ellen Marsden, Fisheries Professor, University of Vermont and Mark Malchoff, Extension Program Leader and Aquatic Resource Specialist, Lake Champlain Sea Grant

How will climate change impact invasive species? How can we adapt our management strategy to prepare for these changes? Ellen Marsden (UVM) will investigate possible tools for resource managers to use to prepare for future events. Mark Malchoff (Sea Grant) will add to the discussion by providing the latest research on how climate changes may affect regional resource management plans.

1:00-3:00 **Predicted Impacts on Native Aquatic Species: How to Manage Climate Change in Lake Champlain**

Moderated by Bill Ardren, Senior Fish Scientist, US Fish & Wildlife Service

How will climate change impact native fisheries? Tim Mihuc (SUNY Plattsburgh/LCRI) will present data from his latest research on Adirondack macroinvertebrates and possible climatic impacts. Jason Stockwell (UVM) will discuss how cyanobacteria affects fish and provide updates from the Rubenstein Lab at UVM. Dan Isaak (USFS) will provide an overview of modeling potential climate impacts on native fisheries, with a fresh perspective from the Rocky Mountains.

3:30-5:00 **ANS Management Tools: What's Working, What's Not?**

Moderated by Meg Modley, Aquatic Nuisance Species Coordinator, Lake Champlain Basin Program

This roundtable discussion will focus on ANS management updates from around the region, and what tools are available to resource managers to deal with climate change. Panelists will discuss tools that can adapt to a changing environment- specific to handling new threats and climatic events. Emily DeBolt (LGA) will provide updates from the Lake George Association AIS management plan. Eric Holmlund (Paul Smith's) will provide an overview of boat launch steward data for the past several years. Matt Probasco (VT DEC) will discuss the state of Vermont's Aquatic Species Rapid Response General Permit.



Climate Change Adaptation: Stormwater Management and Aquatic Ecosystem Impacts

Speaker Biographies

Dr. Bill Ardren, Senior Fish Biologist, U.S. Fish and Wildlife Service

William (Bill) Ardren, Ph.D. is a Senior Fish Biologist with the U.S. Fish and Wildlife Service (USFWS). He provides science expertise related to aquatic resource conservation with an emphasis on fisheries management, reintroduction of species, and conservation of endangered species. Bill has extensive experience in population genetics and molecular systematics focused on conservation of fish populations throughout the USA. He is currently leading a large interdisciplinary team of researchers and managers focused on restoring natural populations of landlocked salmon to Lake Champlain. Bill is a member of the Lake Champlain Fisheries Technical Committee, Lake Champlain Basin Program Technical Committee, and Connecticut River Atlantic Salmon Commission Technical Committee. He is also a Dartmouth College visiting scholar in the Department of Environmental Studies, an adjunct assistant professor in the Department of Biology at the University of Vermont, and an adjunct assistant professor in the Department of Fisheries and Wildlife at Oregon State University.

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Thomas C. Baird, P.E., CPESC, Barton & Loguidice, D.P.C.

Mr. Baird has more than 23 years of experience in transportation and environmental design for various state agencies, municipalities and private industry. His experience includes complex rural and urban projects, roundabouts, intersection design, noise analysis, drainage design and the development of mitigation strategies for a wide range of project types. Mr. Baird's experience also includes the design of green infrastructure and stormwater management systems specializing in porous asphalt and designs for linear transportation projects. He is a Licensed Professional Engineer and Certified Professional in Erosion and Sediment Control (CPESC).

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Jenn Callahan, Operations Stormwater Technician, Vermont Agency of Transportation

Jenn Callahan is the Operations Stormwater Technician for the Vermont Agency of Transportation. Jenn has worked for VTrans since 2012; preceding that she was employed with the Vermont Department of Environmental Conservation and assisted in developing and implementing Vermont's stormwater TMDLs. She has a BS in Geology from the University of Massachusetts and a MS in Geology from the University of Rhode Island.

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Emily DeBolt, Outreach Coordinator, Lake George Association

Emily DeBolt is the Outreach Coordinator for the Lake George Association. She has been with the LGA for 7 years working on invasive species, land use, and other water quality issues. She has coordinated their flagship education program the Floating Classroom, their award winning AIS prevention Lake Steward Program, and their Lake-Friendly Living outreach program for homeowners around the lake. She is currently in charge of their communications and outreach, after welcoming her first child this past summer. She has an undergraduate degree from Cornell University and a master's degree from SUNY- ESF (College of Environmental Science and Forestry). She also owns and operates a native plant nursery with her husband called Fiddlehead Creek that specializes in growing native plants for sustainable landscapes.

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Tom DiPietro, Deputy Director of Public Works, City of South Burlington

Tom DiPietro is the Deputy Director of Public Works for the City of South Burlington and has managed the South Burlington Stormwater Utility since 2006. Tom is also on the Board of Directors for the Green Mountain Water Environment Association. He has a B.S. in Environmental Management from the Rochester Institute of Technology and a M.S. in Plant and Soil Science from the University of Vermont.

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Dr. Lesley-Ann Dupigny-Giroux, Professor, University of Vermont; State Climatologist

An applied climatologist by training, Dr. Dupigny-Giroux's research interests intersect a number of interdisciplinary fields including hydroclimatic natural hazards and climate literacy as well as the use of remote sensing and GIS (Geographic Information Systems) in the fields of spatial climate and land-surface processes. Dr. Dupigny-Giroux is also the State Climatologist for Vermont. Her work takes her across Vermont to assist colleagues in State Agencies (transportation, emergency management, agriculture, forestry and legislators) to help plan for and adapt to climate change. She is an expert in floods, droughts and severe weather and the ways in which these affect Vermont's landscape and people. She also works extensively with K-12 teachers and students, bringing the use of satellites and understanding climate to all levels of the pre-university curriculum. She is the lead editor of Historical climate variability and impacts in North America, the first monograph to deal with the use of documentary and other ancillary records for analyzing climate variability and change. Nationally, she serves on two NOAA Science Advisory Board Committees related to climate research across the US. She is also a contributing author to the Climate Change in the Northeast: A Sourcebook, for the NorthEast Region chapter of the 2013 National Climate Assessment report, US Global Change Research Program. She holds a B.S. in Physical Geography and Development Studies from the University of Toronto (1989), an M.S.(1992) in Climatology and Hydrology and a Ph.D. (1996) in Climatology and Geographic Information Systems from McGill University.

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Kevin Farrington, City Engineer, City of Plattsburgh

Kevin Farrington is a licensed Professional Engineer and has been the City Engineer in Plattsburgh since 2002 where he designs, reviews and implements stormwater management plans for compliance with State and Local guidelines. Prior to that he worked in a private consulting firm

where he specialized in design of stormwater management plans for a variety of Federal, State, local and private commercial, industrial and recreational clients. Kevin serves on the LCBP Technical Advisory Committee and is currently the Project Manager on a LCBP funded Stormwater Conveyance System and Green Infrastructure Planning Project for the City of Plattsburgh.

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Dr. Eric Holmlund, Professor, Paul Smith's College

Eric Holmlund is the founding director of Paul Smith's College's Watershed Stewardship Program, the spread prevention and education wing of the Adirondack Watershed Institute. He is a Professor of Environmental Studies and Program Director for Liberal Arts, Environmental Studies and Recreation at Paul Smith's College in New York's Adirondack Park. He recently co-authored, with Emily DeBolt, Hilary Smith, Meghan Johnstone, and Kristen Rohne, a report requested by the NYSDEC entitled "Boat Inspection and Decontamination for Aquatic Invasive Species Prevention: Recommendations for the Adirondack Region", which is intended to be a management resource for landscape-level ANS spread prevention.

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Dr. Stephanie Hurley, Professor, University of Vermont

Dr. Stephanie Hurley is an Assistant Professor in the Plant and Soil Science (PSS) Department at the University of Vermont. Her background integrates the fields of landscape architecture, land use planning, ecological restoration, and watershed protection. Her current stormwater research projects include the design, construction, and monitoring of the University of Vermont Bioretention Laboratory (funded by Lake Champlain Sea Grant and the Lintilhac Foundation), and a parking lot retrofit with green stormwater infrastructure in Waitsfield, VT (funded by the Vermont Ecosystem Restoration Program). Dr. Hurley is a member of a collaborative research team that is using "crowdsourcing" techniques to engage stakeholders in identifying climate change solutions for our region via the Research on Adaptation to Climate Change (RACC) project. Her research lab also develops landscape visualizations for agricultural best management practices that target climate change resiliency as part of a collaborative effort within the UVM Food Systems research arena. Dr. Hurley teaches courses in Landscape Design Fundamentals and Ecological Landscape Design.

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Dr. Daniel Isaak, Research Fisheries Scientist, U.S. Forest Service

Dan Isaak is a Research Fisheries Scientist with the U.S. Forest Service, in Boise, Idaho. He grew up in South Dakota & has a Ph.D. from the University of Wyoming. His research focuses on understanding the effects of climate change and environmental gradients on stream habitats and fish populations, monitoring and modeling of stream temperature and fish populations, development and application of spatial statistical models for stream networks, and use of digital and social media to connect people, information, and landscapes.

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Justin Kenney, Green Infrastructure Coordinator, Vermont DEC

Justin Kenney, Green Infrastructure Coordinator at the Vermont Department of Environmental Conservation (VTDEC), is a graduate of the University of Vermont with a Bachelor of Science in Environmental Sciences and a concentration in Ecological Design. Justin has worked in the

environmental field for over 10 years and has worked with a number of organizations on a wide array of projects involving agricultural sustainability, habitat enhancement and restoration, forest stewardship, and stormwater management. Justin joined VTDEC in early 2013 and now works diligently to promote better site design and sustainable stormwater management throughout the Vermont.

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Amy Macrellis, Project Water Quality Specialist, Stone Environmental

Amy Macrellis is a Project Water Quality Specialist in the Water Resources Management Group at Stone Environmental. Amy has over a decade of experience providing technical leadership and editorial support for water quality assessments, stormwater treatment system and policy evaluations, wastewater planning and feasibility studies for unsewered communities, and research projects. Her current work interests include the ongoing revisions to Vermont's Stormwater Management Manual, as well as research into how to quantify the stormwater treatment benefits of trees and the potential to incorporate "tree credits" into the Manual or municipal permitting processes. Amy earned her Master's degree in Environmental Geoscience from Michigan State University, and her undergraduate degree in Geological Sciences from Albion College.

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Mark Malchoff, Extension Program Leader, and Aquatic Resource Specialist, Lake Champlain Sea Grant

Mark is an adjunct faculty member at SUNY Plattsburgh, where he serves as an Aquatic Resource Specialist with the Lake Champlain Sea Grant. His responsibilities deal primarily with outreach/extension aspects of aquatic invasive species and fisheries issues in the Lake Champlain Basin of New York and Vermont. His recent efforts include co-authorship of *Post tournament release movements of black bass in Lake Champlain*. Other interests/projects include fish passage and invasive species barrier options for the Champlain Canal. He currently serves as co-chair of the Northeast Aquatic Nuisance Species Panel. He holds an M.S. degree in Environmental Studies from Bard College, and a B.S. in Natural Resources from Cornell University. Current organizations/committees include: Lake Champlain Basin Program Technical Advisory Committee, Lake Champlain Fisheries Technical Committee, and the American Fisheries Society.

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Dr. J. Ellen Marsden, Professor of Fisheries, University of Vermont

Ellen received her Masters degree and PhD from Cornell University, and was a post-doctoral associate at Cornell for two years before moving to the Illinois Natural History Survey, where she was director of the Lake Michigan Biological Station for six years. In 1996, she moved to the University of Vermont. Her research focuses on early life history of lake trout, population dynamics of lake whitefish, alternative control methods for sea lamprey, ecology of exotic species, and effects of lake habitat fragmentation. She is currently studying the effects of alewife on lake trout reproductive success, and the use of artificial reefs to enhance lake trout spawning.

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Dr. Tim Mihuc, Director of the Lake Champlain Research Institute at SUNY Plattsburgh

Timothy (Tim) Mihuc has served as the director of the Lake Champlain Research Institute at SUNY-Plattsburgh since 1999. He holds a Ph.D. in Biology from Idaho State University (1994) and a M.S. degree in Zoology from Oklahoma State University (1989) and a B.S. in Biology from Oral Roberts University. Tim began his career with an undergraduate independent research project on nutrient limitation of algae in a small eutrophic lake in Oklahoma. He continued his education with a Master's thesis on invertebrate life-history ecology in a Colorado alpine wetland and Ph.D. thesis on post-fire food web dynamics in Yellowstone National Park streams. He spent several years at Louisiana State University as a post-doctoral researcher (1994-96) conducting invasive species research in the Atchafalaya River Basin, the largest contiguous hardwood swamp ecosystem in the U.S. From 1996-1999 Tim served as director of the Great Rivers Field Station (Illinois Natural History Survey) where he led a multidisciplinary research team working on the Upper Mississippi River. He has published over 35 research articles including journals such as *Ecology*, *Freshwater Biology*, *Aquatic Sciences*, *Hydrobiologia*, *Journal of Great Lakes Research* and *American Midland Naturalist* and has co-edited the book volume titled "*Lake Champlain: Partnership and research in the new millennium*" published by Kluwer Academic publishers. Tim's professional areas of interest include aquatic food webs, plankton ecology, river ecology, fish population dynamics, ecological integrity and aquatic biodiversity. He enjoys outdoor activities, particularly fly-fishing, skiing, hiking and mountain climbing (preferably combined).

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Meg Modley, Aquatic Nuisance Species Management Coordinator, LCBP

M. Modley is the Aquatic Nuisance Species Manager Coordinator at the Lake Champlain Basin Program in Grand Isle, VT where she has worked since 2003. She has a Bachelor of Arts Degree in Environmental Studies and Geology from the University of Vermont and a Masters Degree in Public Administration from the University of Vermont. Her work has focused on invasive species rapid response planning in the states of New York and Vermont and the province of Quebec. She is a member of the National Aquatic Nuisance Species Task Force and is the current Treasurer of the Northeast Aquatic Nuisance Species Panel. Modley supervises the Lake Champlain Boat Launch Steward Program on Lake Champlain, coordinates an invasive species grant program in the basin, and enjoys assisting partners with field management control and rapid response efforts.

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Megan Moir, Manager of Stormwater Program, City of Burlington

Ms. Moir has served as the manager of the City of Burlington Stormwater Program and the administrator of the Stormwater and Erosion Control articles of the City's Chapter 26 Wastewater, Stormwater and Pollution Control Ordinance since 2009. She has ten years of technical expertise in stormwater management and erosion prevention and sediment control, including retrofit planning and design, the development and review of post-construction and construction plans, administration of the City's stormwater ordinance and management of the City's MS-4 stormwater permit compliance and stormwater infrastructure. Prior to working with the Department, she worked for the Vermont Agency of Natural Resources Stormwater Section after working for the private sector. Ms. Moir holds an M.S. in Water Resources from the University of Vermont.

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Padraic Monks, Program Manager, Stormwater Division, VT DEC

Padraic Monks is the manager of the Vermont DEC Stormwater Program, a 12-person office charged with implementing several state and federal stormwater regulations. Padraic has been with DEC since 1997, where he also worked as an ecologist for several years with the Wetlands Program. Prior to joining DEC he worked in environmental consulting and residential construction. Padraic holds a BS from Northeastern University, and an MS in Natural Resources from the University of Michigan.

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Julie Moore, Leader of Water Resources Management Group, Stone Environmental

Julie Moore is the leader of the Water Resources Management Group at Stone Environmental. Julie has led a variety of watershed planning and assessment projects, often culminating in implementation of specific measures to address identified concerns, including projects related to stormwater management, agricultural stewardship, wetland restoration, and riparian corridor protection. She has led the successful implementation of a variety of projects related to stormwater management, including the design and construction of numerous low impact development practices, such as step pool conveyance, bioretention treatment areas and subsurface gravel wetlands. Prior to joining Stone, Julie worked for the Vermont Agency of Natural Resources where she was the director of the Clean & Clear Program and managed the state's efforts to implement the TMDL (total maximum daily load) for phosphorus pollution in Lake Champlain. Julie earned a Bachelor of Science in Civil Engineering from the University at Buffalo, a master's degree in Environmental Engineering from Johns Hopkins University, and is a registered professional engineer in Vermont.

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Matt Probasco, Aquatic Nuisance Control, VT DEC

Matthew Probasco is the Aquatic Nuisance Control & Pesticide General Permit Coordinator for Vermont's Department of Environmental Conservation (VT DEC), Lakes & Ponds Program. In '95 he received a Bachelor's Degree in Natural Science from The Ohio State University while working for the Ohio Sea Grant Program and Stone Laboratory on Lake Erie. More recently, he earned a Master's of Public Administration from the University of Vermont in '06, and has worked for VT DEC ever since. When he's not reviewing permit applications to control aquatic nuisance species, he enjoys his lead role in coordinating the Agency of Natural Resources' intra-departmental Aquatic Species Rapid Response General Permit.

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Dr. Curt Stager, Professor, Paul Smith's College

Curt Stager is a paleoecologist and science writer with a Ph.D. in biology and geology from Duke University. An authority on the climatic history of Africa and the Adirondack region, he has also investigated El Niño in Peru, human impacts on lakes in Sweden, exploding lakes in Cameroon, and bat pollination in Melanesia. He has published over three dozen papers in journals including *Science* and *Quaternary Research*, served on the Intergovernmental Panel on Climate Change, has written extensively in periodicals such as *National Geographic*, *Fast Company*, and *Adirondack Life*, and co-hosts the science program *Natural Selections* on North Country Public Radio. Curt has taught natural sciences at Paul Smith's College since 1987 and was chosen as 2013 New York State

Professor of the Year by the Carnegie Foundation. And if nobody stops him, he has been known to play a mean banjo.

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Dr. Jason Stockwell, Director of Rubenstein Ecosystem Science Lab, University of Vermont

Dr. Stockwell received his doctorate from the University of Toronto in 1996, followed by post-doctoral associate positions at Colorado State University and Michigan State University. More recently, he was the station chief at the USGS Lake Superior Biological Station in Ashland, Wisconsin, and a pelagic ecologist at the Gulf of Maine Research Institute in Portland, Maine. Much of Dr. Stockwell's previous work focused on the Great Lakes where he developed a unified research framework to help identify the mechanisms underlying cisco recruitment, modeled linkages between population dynamics and habitat supply, and transitioned and integrated a long-term monitoring program into a template for examining energy flow through food webs across habitat gradients. He also has extensive experience investigating the role of diel vertical migration in the ecology of pelagic species.

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Becky Tharp, Land Use Planning and Water Quality Educator, Lake Champlain Sea Grant

Becky is responsible for managing LCSG's urban non-point source pollution and stormwater education programs. She develops and conducts outreach and trainings that teach the connection between land use and water quality by drawing on relevant scientific research. Becky holds a BA from Harvard University and an MS from the University of Vermont where she investigated the use of *Mentha aquatica* (an emergent mint species) as a living drinking water disinfectant in developing communities.

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Mike Winslow, Staff Scientist, Lake Champlain Committee

Mike Winslow has been the staff scientist with the non-profit Lake Champlain Committee since 2001. He is the author of *Lake Champlain: A Natural History*, and the chair of the Lake Champlain Basin Program's Technical Advisory Committee. In Mike's past he taught in a high school classroom in Maryland, a vocational center in Ecuador, and environmental education programs in Vermont and Virginia. He holds a Bachelor's degree from St. Lawrence University in Biology and Environmental Studies, and a Master's in Botany from the University of Vermont.

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