

Pooled Monitoring Forum: Restoration Research to make Science and Regulatory Connections

Tuesday, June 9, 2020, from 10 AM to 4 PM

This year we are going remote and here is how to join this meeting:

WebEx Meeting Link	https://cbtrust.webex.com/cbtrust/j.php?MTID=m9ddee56fb7be6449edbe2b17cc9f4ca2
Audio	Two options: <ol style="list-style-type: none">1. <u>Join by computer audio</u> automatically. *Recommended*2. <u>Join by phone</u>: Use this option if your computer lacks an internal microphone or if you do not have access to a computer.<ol style="list-style-type: none">a. Call 415-655-0001b. Enter meeting access code/meeting number: 160 353 5588c. Enter your attendee ID # (must join WebEx meeting through meeting link <u>first</u> to access your ID #) & <u>if joining by phone only</u> skip this step & mute your phone

The Maryland Department of Natural Resources, the Maryland Department of the Environment, the Maryland Department of Transportation's State Highway Administration, the National Fish and Wildlife Foundation through the Environmental Protection Agency's Chesapeake Bay Program Office, Montgomery County Department of Environmental Protection, the Chesapeake Bay Trust, and other Pooled Monitoring partners are excited to invite you to a forum in which the most recent restoration research will be presented and discussed. At this forum, regulatory staff and practitioners will have an opportunity to ask new questions and clarify the current state of scientific knowledge. Topics include efficacy of research practices for water quality and biological resources, potential chemical/physical impacts, effectiveness of stream restoration practices, climate change impacts/solutions, and "trade-offs." The speakers and audience will be charged with discussing how this science is used or could be used by regulators, discussing how the existing scientific knowledge could be translated to be useful for regulators and others, and identifying what questions remain unanswered.

This Pooled Monitoring Initiative's Restoration Research award program is a follow up item from a series of similar conversations held in 2012, 2013, 2014, and 2015, when the needs of both regulators and practitioners were articulated, and important questions asked and prioritized. The questions were posed to the research community to garner their help through the program that is now known as the Pooled Monitoring Initiative that asks questions through the Restoration Research award program. This forum keeps the promise made following those prior meetings to work towards answering the priority questions. This forum is the 5th annual event where the Restoration Research awardees present their work to the regulatory audience and practitioners for their use and receive feedback for future research needed to support their work. Finally, at this forum we will gather additional research questions for future Request for Proposals in the program.

Charge to participants

- Regulatory Community – Use the information from this Forum to help inform the permit process. Ask the restoration researchers questions that can help with the permit process and help design future research projects to answer lingering questions.
- Practitioners – Use the information from this forum to design and build the most effective projects possible from a water quality and stream ecology standpoint. Ask questions that can help design future research projects that will help determine the types of projects that are most effective, as well as where and how they should be built.
- Researchers – Present your findings that addressed the key restoration question posed in the Restoration Research Request for Proposals. Be specific about the research question(s) identified for the study, previous work done on the

subject, the experimental design, the results, the level of uncertainty/confidence in the findings, and most importantly how the audience can use the information you presented. Listen to what the audience still needs to know to make management decisions in their respective fields and how you might address their questions in future research.

Agenda

- 10 am to 10:30 am – Morning Session
 - Technology “Landing” – Getting comfortable with Webex platform and tech ground rules for the day
 - **Welcome and charge for the day - Jana Davis**, Executive Director of the Chesapeake Bay Trust, and introduce guest speaker **Lee Currey**, Director of the Water and Science Administration, Maryland Department of the Environment (MDE)
 - Pooled Monitoring Initiative – Restoration Research program background, current state, and future of the program/science (**Sadie Drescher**, Director of Restoration Programs, Chesapeake Bay Trust)
 - Key restoration research needs from the federal and state agencies, the state of the science, and how science can support the regulatory community

Presentations from recent Restoration Research projects to answer the key restoration questions in watershed restoration in Maryland and in the Chesapeake Bay. This work is tailored to be useful to the regulatory and practitioner efforts.

- 10:30 am to 11:00 am – **Jon Butcher** (Tetra Tech, Inc.), “Climate impacts to restoration practices”
 - Translation of the presentation by Megan Granato, Senior Program Director, Chesapeake and Coastal Service, Maryland Department of Natural Resources
- 11:00 am to 11:30 am – **Roxolana (Lana) Kashuba** (Exponent, Inc.), “The effect of BMPs on water quality: Optimizing monitoring to reduce uncertainty and maximize scientific value”
 - Translation of the presentation by Joshua Thompson, Senior Engineer, Watershed Protection & Restoration Program, Anne Arundel County Department of Public Works
- 11:30 am to 12:00 pm – **Cindy Palinkas** (University of Maryland Center for Environmental Science (UMCES)) Horn Point Laboratory), “Long-term impacts of living shorelines to Submerged Aquatic Vegetation habitats in Chesapeake Bay”
 - Translation of the presentation by Jana Davis, Executive Director, Chesapeake Bay Trust
- 12:00 am to 12:30 pm – Lunch Break
- 12:30 am to 1:00 pm – **Tom Schueler**, Executive Director of the Chesapeake Stormwater Network, “Value of Pooled Monitoring Program & Practitioner stream restoration research needs”
- 1:00 pm to 1:30 pm – **Tess Thompson** (Virginia Tech), “Linking stream restoration success with watershed and design characteristics”
 - Translation of the presentation by Ari Engelberg, Implementation Project Officer, Chesapeake and Coastal Service, Maryland Department of Natural Resources
- 1:30 pm to 2:00 pm – **Bob Hilderbrand** (UMCES), “Determining ecologically realistic restoration objectives”
 - Translation of the presentation by Ken Mack, Senior Water Quality Specialist, Montgomery County Department of Environmental Protection with input from Chris Ruck, Ecologist IV, Stormwater Planning Division, Watershed Assessment Branch, Fairfax County Department of Public Works & Environmental Services
- 2:00 pm to 2:30 pm – **Jesse Iliff** (Arundel Rivers Federation) and **Tom Jordan** (Smithsonian Environmental Research Center), “Assessing Watershed-Scale Restoration Effectiveness: Treatment Impacts and Monitoring Requirements”
 - Translation of the presentation by Erik Michelsen, Watershed Protection and Restoration Program Administrator, Anne Arundel County’s Department of Public Works
- 2:30 pm to 3:00 pm – **Carol Wong** (Center for Watershed Protection, Inc.), “Literature review on techniques to reduce salt

loadings to streams: Which techniques of salt application to roadways will result in less loadings to streams?"

- Translation of the presentation by Karl Berger, Principal Environmental Planner, Metropolitan Washington Council of Governments
- 3:00 pm to 3:30 pm – Break Out Groups to Change the World (of Restoration)
 - Group #1 = Regulatory Community – facilitated discussion by **Jeff White & Deborah Cappuccitti**, MDE
 - Jeff White, Chief, Integrated Water Planning Program - Watershed Restoration Division, MDE
 - Debora Cappuccitti, Senior Regulatory Compliance Engineer, Water and Science Administration, MDE
 - Group #2 = Practitioners/Researchers – facilitated discussion by **Katrina Emery Davis**, Senior Estimator, Environmental Quality Resources, LLC (EQR) & Maryland Stream Restoration Association (MSRA) representative

What are the issues rising to the top for you as a regulator and as a practitioner? How can these issues be addressed using this Pooled Monitoring Initiative's Restoration Research Award Program? Let's talk about this and circle back together to see what research questions rise to the top for next year's Request for Proposals.

- 3:30 pm to 4:00 pm – Summary of top research questions from regulators and practitioners (break out groups #1 and #2) – Katrina Emery Davis for practitioners/researchers and Jeff White & Deborah Cappuccitti for regulatory community
- Closing Remarks (5 minutes): Summary of today's Pooled Monitoring Forum, input from attendees, and any action items/next steps (Sadie Drescher, Director of Restoration Programs, Chesapeake Bay Trust)

We are looking forward to "seeing" you all at this forum, hearing the recent Pooled Monitoring findings, and compiling research questions for next year's call for proposals.

More about the Pooled Monitoring Initiative's Restoration Research program speakers:

Jon Butcher, Ph.D., P.H., Director, Tetra Tech, Inc. Jon is a registered Professional Hydrologist and environmental engineer with over 35 years of experience in watershed planning, risk assessment, and the development, application, and communication of hydrologic, hydraulic, and water quality models. Jon has led technical efforts to support EPA, state, and local governments in a variety of climate change adaptation, TMDL, wasteload allocation, watershed modeling, and water body restoration and protection studies. He is a nationally recognized expert in the application of HSPF, SWAT, and other watershed models and has worked with model developers to test, debug, modify, and improve modeling code. Jon has led a variety of projects for EPA ORD to evaluate impacts of climate change on watershed hydrology, pollutant transport, and BMP performance. He has a Ph.D. in Environmental Engineering from Duke University, a Master of Environmental Management Water Resources from Duke University, and a B.A. from Harvard University.

Roxolana (Lana) Kashuba, Ph.D. Managing Scientist, Ecological and Biological Sciences, Exponent, Inc. Lana assesses ecological risk and regulatory criteria using quantitative data analysis of water, air, aquatic and terrestrial ecosystems. She specializes in the development, interpretation, and critique of statistical modeling techniques used to evaluate environmental causality. Lana focuses on understanding and quantifying sources of variability and uncertainty, and the impact of data quality in environmental assessments. Lana has a Ph.D. in Water Quality Modeling from Duke University, a M.S. in Environmental Health Science from the University of Illinois at Chicago, and a B.A. in Chemistry from Northwestern University.

Cindy Palinkas, Ph.D. Associate Professor, University of Maryland Center for Environmental Science (UMCES) Horn Point Laboratory. Cindy's professional expertise is in the formation and preservation of sedimentary strata in the geologic record; sediment deposition and accumulation in intertidal, fluvial, estuarine and continental-shelf environments; radioisotope geochronology; sediment-vegetation interactions. Cindy has a Ph.D. and a M.S. in Geological Oceanography from the University of Washington and a B.A. in Earth Planetary Science from Johns Hopkins University.

Tom Schueler, Executive Director, Chesapeake Stormwater Network. Tom has more than 30 years of experience in practical aspects of stormwater practices to protect and restore urban watersheds. He currently directs the Chesapeake Stormwater Network, a non-profit organization devoted to implementation of more sustainable stormwater practices across the Chesapeake Bay watershed. Tom directs the Chesapeake Bay Stormwater Training Partnership, which provides webcasts, workshops and on-line training modules to train engineers on new practices. Tom also serves as the stormwater technical coordinator for the EPA Chesapeake Bay Program. Tom also is active in promoting better stormwater regulations and permits in communities across the Bay. Tom founded the Center for Watershed Protection in 1992, and loves stream-walks, good scotch, and bad dogs.

Tess Thompson, Ph.D., Associate Professor, Turner Fellow of Engineering, Biological Systems Engineering, Virginia Polytechnic Institute and State University (VT). Tess has worked as an engineer in state government and private consulting, and as a consultant to US AID. Her research in watershed management focuses on stream and wetland restoration, urban stream systems, and streambank erosion. A former president of the American Ecological Engineering Society, she currently serves as vice-chair of the River Restoration Committee of ASCE-EWRI and on the advisory board for the International Ecological Engineering Society. Tess has a BS in Agricultural Engineering from VT, MS in Civil Engineering from NC State University, and a Ph.D. in Biological Systems Engineering from VT.

Robert H. Hilderbrand, Ph.D., Associate Professor, University of Maryland Center for Environmental Science Appalachian Laboratory. Areas of Expertise: Ecology and conservation biology of running waters; Watershed and stream habitat restoration; and Linking landscapes and populations Education: Ph.D. from Utah State University: (Ecology) Bob has a M.S. from Virginia Tech (Fisheries Science) and a B.S. from Frostburg State University (Wildlife & Fisheries; Minors – Chemistry, Biology).

Jesse Iliff, J.D. South RIVERKEEPER, Arundel Rivers Federation. Jesse Iliff is an attorney who obtained his juris doctor with a certificate of concentration in environmental law from the University of Maryland, Carey School of Law. Jesse interned with the Office of the Attorney General's Environmental Crimes Unit and while in law school. Jesse served as co-executive of the Maryland Environmental Law Society, designing and implementing conservation programs. Jesse completed an Asper Fellowship with the Anne Arundel County Office of Law's natural resources division. Before joining the Arundel Rivers Federation, Jesse provided pro bono counsel and representation to several community groups and non-profit organizations through the Chesapeake Legal Alliance.

Tom Jordan, Ph.D., Principal Investigator, Senior Staff Scientist, Smithsonian Environmental Research Center (SERC), Tom's research investigates the transport and transformation of nitrogen and phosphorus in ecosystems. Since starting at SERC in 1980, he has studied the sources of nutrient releases from watersheds, the uptake of nutrients by wetlands and riparian forests, and the fates and effects of nutrients in estuaries, especially in Chesapeake Bay and its watershed. Tom has a B.S. in Biology from Bucknell University and Ph.D. in Biology from Boston University.

Carol Wong, P.E. Water Resources Engineer, Center for Watershed Protection, Inc. Carol is a Maryland native and joined the Center for Watershed Protection in 2014. Prior to joining the Center, Carol worked for the private sector as a consultant, managing environmental research and development projects. Carol has experience in program management, bioretention research, BMP design and permitting, construction inspection, and water quality monitoring. Carol has a M.S. in Environmental Engineering from Stanford University and a B.S. in Mechanical Engineering from the University of Maryland.