



EBC Climate Change Program Series

Part One

The Science and Modeling - Implications for Coastal New England

Friday, May 13, 2015

Nixon Peabody LLP
100 Summer Street
Boston

The next two programs in this EBC Climate series are scheduled for:

June 9, 2016 – Resilience and Adaptation Priorities - Implications for Coastal New England

July 12, 2016 – Insurance Industry Perspective on Risk Related to Climate Change for Coastal New England

AGENDA

8:00 a.m. **Welcome: Ruth Silman**, Chair, EBC Climate and Air Committee
Partner, Nixon Peabody LLP

Introduction: Scott Turner, Program Chair and Moderator
Director of Planning, Nitsch Engineering

8:15 a.m. **The Science of Changing Storms and Sea Levels**

- *Climate Change Impacts on Storm Frequency and Intensity*
 - **Kerry A. Emanuel**, Professor of Atmospheric Science, MIT
- *Sea Level Rise*
 - **Christopher Little, Ph.D.**, Staff Scientist,
Atmospheric and Environmental Research, Inc (AER)

9:00 a.m. **Modeling of Coastal Impacts**

- *The North Atlantic Coast Comprehensive Study*
 - **Roselle Henn**, Deputy Director, National Planning Center for Coastal Storm Risk Management, U.S. Army Corps of Engineers
- *Sea Level Rise & Storm Modeling in Massachusetts*
 - **Kirk Bosma**, Team Leader/Coastal Engineer, Woods Hole Group

10:00 a.m. **Networking Break**

10:30 a.m. Implications

- *Implications for Coastal Ecosystems*
 - **Pam DiBona**, Executive Director
Massachusetts Bays National Estuary Program (MassBays)
- *Implications for Wastewater Infrastructure*
 - **Jan Greenwood**, Vice President, Woodard and Curran

11:30 am Panel Discussion

Panel Moderator: Scott Turner, Nitsch Engineering

Panel Members:

- Kerry Emanuel, MIT
- Christopher Little, AER
- Roselle Henn, U.S. Army Corps of Engineers
- Kirk Bosma, Woods Hole Group
- Pam DiBona, MassBays
- Jan Greenwood, Woodard and Curran

12:00 p.m. Adjourn – Closing Remarks – Ruth Silman

PROGRAM CHAIR

Scott Turner, P.E., AICP, LEED AP ND, Director of Planning
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Scott Turner is a certified planner and registered professional civil engineer with 23 years of experience. He is responsible for the management and growth of Nitsch Engineering's sustainable site consulting, stormwater master planning, campus planning, and transportation planning practice areas. In addition, Scott provides planning and site design services for commercial and private sector development.

In addition to the Environmental Business Council, Scott is active in a number of professional organizations including the American Planning Association (where he serves as the National Chair of the Sustainable Communities Division), the Urban Land Institute, and the Massachusetts Association of Consulting Planners. He is a Trustee of the South Shore Economic Development Commission and is a member of the South Shore Chamber of Commerce. He earned his B.S. in Civil Engineering and Environmental Studies from Tufts University and his M.S. in City Planning from the Georgia Institute of Technology.

SPEAKERS

Kirk Bosma, P.E., Team Leader / Senior Coastal Engineer
Woods Hole Group
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Kirk Bosma, PE, is a Senior Coastal Engineer and Team Leader of the Coastal Sciences, Engineering & Planning team at Woods Hole Group. He regularly works on habitat restoration, shoreline protection, and climate change planning projects for a diverse client base. He specializes in applying numerical models to optimize engineering designs and reduce overall project life cycle costs. He has received his Master's degree in coastal engineering from the University of Delaware Center for Applied Coastal Research, and a Bachelor of Science in Civil Engineering from Calvin College.

Pam DiBona, Executive Director
Massachusetts Bays National Estuary Program
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Pam has more than 25 years' experience in environmental science and policy the public, nonprofit, and private sectors. She brings organizational development and strategic planning expertise along with a solid understanding of ocean and coastal science to her work at MassBays, where she leads efforts to protect, restore, and enhance estuarine resources in a region stretching from Salisbury to Provincetown. She previously worked at the New England Aquarium as manager of the NSF-funded Center for Ocean Sciences Education Excellence – New England, Chief of Staff at the Massachusetts Department of Conservation and Recreation, Vice President for Policy at the Environmental League of Massachusetts, and Environmental Affairs Coordinator at the Charles River Watershed Association. Pam earned a B.A. in Biochemistry from Connecticut College, and an M.S. in Environmental Microbiology and a Graduate Certificate in Critical and Creative Thinking, both from UMass Boston.

Kerry A. Emanuel, Professor of Atmospheric Science
MIT
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Dr. Kerry Emanuel is the Cecil and Ida Green professor of atmospheric science at the Massachusetts Institute of Technology, where he has been on the faculty since 1981, after spending three years on the faculty of UCLA. Professor Emanuel's research interests focus on tropical meteorology and climate, with a specialty in hurricane physics. His interests also include cumulus convection, and advanced methods of sampling the atmosphere in aid of numerical weather prediction. He is the author or co-author of over 200 peer-reviewed scientific papers, and three books, including *Divine Wind: The History and Science of Hurricanes*, published by Oxford University Press and aimed at a general audience, and *What We Know about Climate Change*, published by the MIT Press. He is a co-director of MIT's Lorenz Center, a climate think tank devoted to basic, curiosity driven climate research.

Janice M. Greenwood, P.E., Principal
Woodard and Curran
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Jan Greenwood is a civil engineer with more than 30 years of experience helping public and private clients throughout New England address environmental, civil, and site development challenges. Over the course of her career, she became the first environmental engineer at the former Pease Air Force Base, designed waste handling and disposal facilities with methane control and recovery, and managed construction projects for a general contractor. For the past 15 years, Jan has specialized in environmentally sensitive development projects at coastal sites with a focus on sustainable development practices, flood plain issues, stormwater management, and utility integration. Her

extensive knowledge of the environmental and civil infrastructure issues involved in these sites gives her a holistic perspective on climate change impacts including sea level rise, storm surge, and other flood events. Jan brings this perspective to bear helping clients harden infrastructure, design resilient systems, and protect coastal and riverine sites from the risks associated with climate change.

Roselle Henn, Deputy Director, National Planning Center for Coastal Storm Risk Management
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Ms. Henn is the Deputy Director of the US Army Corps of Engineers (Corps) Coastal Storm Risk Management - Planning Center of Expertise (PCX). In this capacity, she has leadership role in national and global technical exchange actions stemming from the "North Atlantic Coast Comprehensive Study: Resilient Adaptation to Increasing Risk" (2015), and provides strategic planning oversight for coastal projects and studies, advancing climate change preparedness, regional resilience, and the Corps' Hurricane Sandy Recovery Program. She is the Regional Planning Program Manager for the North Atlantic Coast Focus Area Feasibility Studies.

Christopher Little, Ph.D., Staff Scientist
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Dr. Little is a climate scientist in the Oceanography Group at Atmospheric and Environmental Research, Inc. whose research interests include polar oceanography, ocean-ice sheet interaction, sea level change, and the characterization of uncertainty in climate projections. Dr. Little employs both statistical and dynamical models to examine the physical processes underlying global and regional sea level change. In the context of climate risk assessments, he has introduced several transparent, updatable frameworks for assessing sea level rise and coastal flooding. He is a contributing author of the Intergovernmental Panel on Climate Change's Special Report on Extreme Events and Disasters, the IPCC Fifth Assessment Report, and the New York City Panel on Climate Change's recent climate risk assessment. Prior to joining AER, he was an Associate Research Scholar at Princeton University's Woodrow Wilson School and earned his Ph.D. in 2010 from Princeton's Department of Geosciences, and somehow managed to visit Antarctica twice along the way.