

MARTHA'S VINEYARD COASTAL CONFERENCE
Martha's Vineyard Film Center, Vineyard Haven
OCTOBER 24, 2022

AGENDA

8:30 a.m. – on	REGISTRATION: Coffee, tea, pastries	
9:00 a.m. – 9:45 a.m.	KEYNOTE	
Dr. Heather Goldstone, chief communications officer, Woodwell Climate Research Center	Three Things Everyone Should Know About Climate Change	Current climate change is unprecedented in human history. While we still have the power to shape a better climate future, we are currently underestimating how ambitious we need to be and discounting some of the most powerful solutions we have available.
9:45 a.m. – 11:00 a.m.	Flooding: Pathways, Planning & Action	
Dr. Mark Borelli, coastal geologist, director, Seafloor Mapping Program, Center for Coastal Studies	Mapping Storm Tide Pathways in the Six Towns of Martha's Vineyard: Assessing Coastal Resiliency to Storms and Sea Level Rise	This project has identified and mapped low-lying areas that provide a direct pathway for flood waters to reach inland areas. The goal of the project was to assess potential flood impacts to critical public infrastructure and recommend short- and long-term strategies for future protection of high-risk assets.
Shannon Hulst, floodplain specialist, Woods Hole Sea Grant / Cape Cod Cooperative Extension	Floodplain Resilience Bylaws on Cape Cod	Cape Cod Cooperative Extension/Woods Hole Sea Grant and the Cape Cod Commission have a series of ongoing projects to update zoning and conservation bylaws and regulations on Cape Cod. These updates will ensure compliance with minimum federal requirements and also provide a suite of options for higher standards to improve adaptation to sea level rise and coastal storms.
11:00 a.m. – 11:15 a.m.	BREAK	
11:15 a.m. – 12:45 p.m.	Erosion: Highly Dynamic Inlet Areas & How We Manage Them	
John S. Ramsey, P.E., principal coastal engineer, Sustainable Coastal Solutions, Inc	Alternatives for Providing Shore Protection & Mitigating Shoaling at the Stage Harbor Shoreline, Chatham, MA	The evaluation consisted of analyzing the effectiveness of flow training structures and beach nourishment to mitigate long-term shoreline erosion and shoaling from Stage Harbor entrance to Morris Island. Increased tidal currents developed by the formation of Fools Inlet require improved coastal management and shore protection strategies along the Stage Harbor/Morris Island regional shoreline that will need to be implemented for the next 10-to-20 years to improve the sustainability and resiliency of the beach system.
Dr. Paige Hovenga, postdoctoral investigator Woods Hole Oceanographic Institution	Machine-Made Inlet Management and Shoreline Resilience	Many coastal ponds along Massachusetts' shorelines are breached intentionally to lower pond water levels that threaten homes, to promote healthy habitats, and to facilitate migration of marine species. Our research focuses on understanding the processes that drive inlet evolution and closure, and the inlet configurations and environmental conditions that optimize the benefits of the breaches.

<p>Kristen Grubbs, coastal project manager, The Trustees, and Jane Varkonda, conservation agent, Towns of Edgartown and Tisbury</p>	<p>Norton Point Dune Restoration</p>	<p>In partnership with the Town of Edgartown and Dukes County, the Trustees have completed Phase 1 of a dune restoration project at Norton Point. Why is this project important? What comes next? Learn more about what drove the partners to select this site, what the goals were, how it was designed and constructed, and what Phase 2 will entail.</p>
<p>12:45 p.m. – 1:45 p.m.</p>	<p>LUNCH (on your own)</p>	
<p>1:45 p.m. – 3:00 p.m.</p>	<p>Marshes: The Value of Marshes, Allowing Room for Migration, & Restoration</p>	
<p>Katherine A. Castagno, director, Land-Sea Interaction Program, Center for Coastal Studies</p>	<p>How Much Marsh Restoration Is Enough to Deliver Coastal Protection Benefits?</p>	<p>Many restoration projects seek to maximize the ecosystem service of wave attenuation, but how much marsh restoration is enough to deliver measurable coastal protection benefits is still unknown. This question is critical to guiding assessments of cost effectiveness and for funding, implementation, and optimizing of marsh restoration for risk reduction projects. This study used model simulations to determine relationships between wave attenuation and marsh vegetation, finding that up to a 95% reduction in wave energy is seen at as low as 50% vegetation cover, and that even a relatively thin marsh can provide substantial protection if it is well vegetated.</p>
<p>Rob Young, Sialia Environmental</p>	<p>Planning for Salt Marsh Migration on the Sengekontacket Pond Shoreline</p>	<p>This presentation will describe an effort to examine the long-term impact of rising sea level on the marshes of one tidal pond on Martha’s Vineyard. A scientific analysis identifying areas of marsh upland movement is combined with a parcel-level analysis of those adjacent lands to advance planning for future marsh preservation.</p>
<p>Russ Hopping, lead coastal ecologist, The Trustees</p>	<p>Restoring Salt Marsh Resiliency: Great Marsh Case Study</p>	<p>In partnership with the USFWS, MassWildlife, and Essex County Greenbelt Association, the Trustees have initiated a landscape-scale restoration project within the 20,000 acre Great Marsh Ecosystem. The restoration uses a combination on nature-based techniques to restore beneficial hydrology to thousands of acres of salt marsh to improve long-term resiliency to mitigate sea level rise. The presentation will highlight partnership goals, details on the specific restoration techniques and progress to date.</p>
<p>3:00 p.m. – 3:15 p.m.</p>	<p>BREAK</p>	
<p>3:15 p.m. – 5:30 p.m.</p>	<p>Looking Towards the Future</p>	
<p>Paul Speer, chief operating officer, MBL</p>	<p>Resilient Woods Hole: A Private-Public Investment in Climate Resiliency</p>	<p>Woods Hole is home to world-renowned scientific organizations, a vibrant business and residential community, and serves as a vital ferry link to the island of Martha’s Vineyard. Resilient Woods Hole has initiated the development of a long-range framework to prepare for sea-level rise and increasing extreme weather events. A cooperative effort is underway to assess these threats and jointly develop solutions that frame responses for the broader community.</p>

<p>Timothy J. Famulare, environmental planner & conservation agent, Town of Provincetown</p> <p>Samantha McFarland & Steve Mague, Center for Coastal Studies</p>	<p>Increasing Coastal Resiliency Through Intermunicipal Shoreline Management</p>	<p>Since 2019, with funding from CZM's Coastal Resilience grant program, the Towns of Eastham, Wellfleet, Truro, and Provincetown have been working with the Center for Coastal Studies to develop a science-based shoreline management framework grounded in consistent management principles to maximize and sustain the coastal resiliency of the Towns' collective 35 miles of Eastern Cape Cod Bay shoreline. To date, the project team has developed a regional shoreline management geodatabase to support local coastal managers; uniform management principles and policies, standard application and plan requirements, and uniform standard approval conditions for Conservation Commissions; recommendations for a regional sand banking system; and an inventory of vulnerable low-lying roads. The next phase will develop a regional sand management program, create a public intermunicipal shoreline management data portal, and finalize conceptual design solutions for four low-lying roads.</p>
<p>Liz Durkee, MVC Climate Change Planner</p> <p>Meghan Gombos, Sea Change Consulting LLC</p>	<p>The Vineyard Way – MV Climate Action Plan</p>	<p>An overview of the recently completed, regional, 20-year Vineyard Climate Action Plan</p>
<p>Andrew Jacobs, laboratory manager, Wampanoag Tribe of Gay Head (Aquinnah)</p>	<p>An Overview of the Tribe's Programming to Support Climate Adaptation Planning</p>	<p>The Tribe's connection with the natural world is critical to Tribal culture. It is the purpose of the Natural Resource Program of the Wampanoag Tribe of Gay Head (Aquinnah) to establish and maintain the capacity and capability to manage environmental programs on Tribal Lands, as well as beyond the boundaries of Tribal Lands.</p>

BIOS

MARK BORRELLI, PH.D. is a coastal geologist. He has been the director of the Seafloor Mapping Program at the Center since 2009. In 2018 he became the founding director of the Coastal Processes and Ecosystems Laboratory, or CaPE Lab, a joint research effort between the School for the Environment within the University of Massachusetts at Boston and the Center for Coastal Studies. His research interests include understanding how storms, sea level rise and human alterations affect the coast.

KATIE CASTAGNO is the director of the Land-Sea Interactions Program at the Center for Coastal Studies in Provincetown, MA. Katie received a PhD in Geological Oceanography from the Massachusetts Institute of Technology/Woods Hole Oceanographic Institution Joint Program in Oceanography. Katie also holds an MA in Marine Affairs from the University of Rhode Island and a BA in Environmental Geoscience from Smith College. Katie has previously worked as an environmental educator and elementary school science teacher across Cape Cod.

LIZ DURKEE is the Martha's Vineyard Commission's first climate change planner. She began the job in December 2020 after a 22-year career as the Town of Oak Bluffs conservation agent. Her conservation work led her to a deep interest in understanding how climate change would specifically impact the Vineyard. She researched and wrote a 15-part series on Climate Change on Martha's Vineyard that was featured in the Vineyard Gazette. Before taking the MVC job she led several climate resilience projects for the Town of Oak Bluffs.

TIMOTHY J. FAMULARE is the environmental planner and conservation agent for the Town of Provincetown, MA.

HEATHER GOLDSTONE oversees Woodwell Climate Research Center's communications activities, bringing the rich stories of Woodwell's science and scientists to diverse public audiences. She holds a Ph.D. in ocean science from the MIT-WHOI Joint Program. After graduate school, she switched tracks and spent twelve years working as a radio journalist at WCAI and WGBH, where she wrote a blog about climate change and then founded and hosted the weekly science-focused radio show, Living Lab Radio. She is involved in supporting Falmouth public schools both personally and professionally, and frequently mentors students in science communication.

MEGHAN GOMBOS has been working in the field of marine conservation and climate adaptation for nearly 20 years. With Sea Change Consulting, she specializes in stakeholder driven and community-based planning. To do this, she develops and facilitates processes that allow diverse groups of people to share information and experiences to identify collective goals and actions that support long term sustainability and community well-being.

KRISTEN GRUBBS joined the Trustees' Coast & Ecology Team in 2022 following work as Ipswich Town Planner and Environmental Planner for the Ipswich River Watershed Association. She brings 20 years of non-profit experience in land conservation and resource planning, including co-authoring the Great Marsh Coastal Adaptation Plan.

RUSS HOPPING is the Lead Coastal Ecologist for The Trustees. Russ has 30 years of experience managing natural resources at The Trustees including overseeing the Coastal Shorebird Program, Barrens Management including prescribed fire, and most recently, leading efforts to restore salt marsh habitat with partners in the Great Marsh on the Northshore. Paige HOVENGA received her PhD in coastal engineering from Oregon State University, where her work focused on understanding morphodynamic processes related to sandy beach and foredune evolution. She began her postdoc position at WHOI last year, where she is working with Steve Elgar and Britt Raubenheimer to study how beaches in the Martha's Vineyard and Nantucket region recover after perturbations. Today, Paige will be talking about her work studying how and why narrow barrier beaches recover after machine-made breaches are made in an effort to allow exchange between the ocean and coastal ponds.

SHANNON HULST is Floodplain Specialist for Barnstable County, MA with Cape Cod Cooperative Extension and Woods Hole Sea Grant. She is a Certified Floodplain Manager with a master's degree in Marine Affairs from the University of Rhode Island. She provides technical assistance on all things related to flooding to communities, residents, and businesses on Cape Cod. Shannon has received awards for her work in regional floodplain management from FEMA and the Association of State Floodplain Managers.

ANDREW JACOBS joined the Natural Resources Department of the Wampanoag Tribe of Gay Head (Aquinnah) in 2008 as the bay scallop coordinator. His dedication and diligence quickly elevated him to the joint roles of environmental technician and laboratory manager, where he has been responsible for monitoring, assessment, restoration and protection of local flora, fauna and aquatic resources of the Wampanoag Tribe of Gay Head (Aquinnah) as well as participating in the development and implementation of natural resources grant-based management programs that serve to protect and

enhance the natural, sustenance, recreational and commercial resources of Tribal lands and its membership.

STEVE MAGUE, MS, is the director of the Coastal Geographic Research and Applied Sciences (CGRASS) Program at the Center for Coastal Studies. As an applied science program, CGRASS uses coastal geographic and other geospatial data to help communities and the public understand and confront the emerging threats within the coastal zone associated with changing climatic conditions. Before coming to work at the Center Steve was a partner and senior project manager with Durand and Anastas Environmental Strategies. Prior to this, he worked for the Massachusetts Office of Coastal Zone Management (CZM) where he managed projects, including the Massachusetts Chapter 91 Historical Mapping Project, and provided technical support to the Massachusetts Department of Environmental Protection concerning public rights in areas of former tidelands. His publications include various papers and chapters focusing on historical coastal cartography and its use in contemporary scientific and policy deliberations.

SAMANTHA JO MCFARLAND is a research associate and geospatial data specialist, as well as the assistant program director of the Coastal Geographic Research and Applied Sciences Program at the Center for Coastal Studies in Provincetown. Samantha specializes in characterizing relationships through spatial analyses and data visualizations related to coastal processes, resilience, coastal resources, and the associated impacts of anthropogenic alterations. She received an MS in Marine Science and Technology from the University of Massachusetts Boston in 2019 where her research focused on quantifying episodic and seasonal morphological variability to beach and back barrier environments using Unmanned Aircraft System (UAS) based measurements and structure from motion (SfM). Before coming to the Center for Coastal Studies, Samantha worked on various GIS projects with the National Park Service at Cape Cod National Seashore, New River Gorge National River, and Bluestone National Scenic River. She has served as a Peace Corps volunteer and with AmeriCorps.

JOHN RAMSEY is a founder and principal coastal engineer at Coastal Solutions. He has served as project manager and/or principal investigator for coastal embayment restoration projects, regional shoreline management plans, beach nourishment and coastal structure designs, estuarine water quality/flushing studies, geotechnical engineering, hydrodynamic and sediment transport evaluations, and environmental studies required for permitting of coastal projects. He has co-authored several papers related to littoral processes analysis and has employed innovative numerical methods to develop alternative solutions for complex coastal engineering problems. Mr. Ramsey is well-versed in modern analytical and numerical techniques for evaluating coastal, estuarine, and salt marsh processes. In addition, he is responsible for oversight of engineering services at Coastal Solutions.

PAUL SPEER is MBL's chief operating officer. In this role, he oversees the infrastructure (facilities, information technology, finance, human resources, marine resources) that supports the scientific and educational mission of the MBL. Dr. Speer received a B.A. in Geology from Williams College and a PhD in Oceanography from MIT and the Woods Hole Oceanographic Institution (WHOI).

JANE M. VARKONDA has been the conservation agent for the Town of Edgartown and the Town of Tisbury since 1988 and is the former conservation administrator for the Town of Weymouth. From 1983 to 1987, Varkonda was a National Park Service Ranger at Cape Cod National Seashore and prior to that a Student Conservation Association volunteer.

ROBERT S. YOUNG is president of Sialia Environmental and director of the Program for the Study of Developed Shorelines, a joint Duke University/Western Carolina University venture. The Program for the Study of Developed Shorelines (PSDS) is a research and policy outreach center serving the global coastal community. The primary mission of PSDS is to conduct scientific research into coastal processes, storm impacts, hazard vulnerability and sea level rise and to translate that science into management and policy recommendations.