

**INTRODUCTION TO THE SPECIAL ISSUE ON RESILIENCE AND THE BIG PICTURE:  
GOVERNING AND FINANCING INNOVATIONS FOR LONG ISLAND SOUND AND  
BEYOND**

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**I. A SYMPOSIUM FOCUSED ON RESILIENCE**

Resilience denotes one end of a range or continuum marking a system's capacity to cope with change or adverse events -- demarcated on the opposing end by the inability to cope which is termed vulnerability. Resilient systems are able to adapt and persist in dynamic environments while retaining critical functions. They are flexible, able to regroup or recover, assess, plan and be proactive in addressing short, medium and longer-term changes. Resilience spans different scales or levels of organization and is a characteristic that may be associated with a variety of systems: ecological, biological, social, economic, legal, and governance. Resilience has become embedded in discussions surrounding efforts

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to adapt to a changing climate. As an end-goal, however, it can be focused on a suite of changes broader and more diverse than simply climate change -- although this looms large in the future of coastal and marine social-ecological systems.

The symposium presentations and discussions explored the policy and legal challenges of planning, implementing and financing resilient futures on both sides of the high tide line as well as the complexities of distributing and coordinating the governance of shared resources among multiple authorities, with a focus on marine spatial planning efforts. The symposium was composed of two sections: 1) Big Picture Planning in Long Island Sound and Beyond and 2) Achieving Resilience through Insurance and Finance. The papers included in this special issue cluster in each of these areas. The papers and presentations were solicited from legal and policy academics, practitioners, regulators, law and graduate students and others via a competitive call for papers. Abstracts were evaluated and selected for inclusion in the symposium on the basis of responsiveness to the call, relevance to the symposium themes, substantive merit, and analytical rigor. The first of two parallel sessions which produced papers for this special issue included two papers focused on marine spatial planning. The second session included three papers<sup>2</sup> on ways to finance innovations to enhance resilience to climate change impacts. Complimenting each contributed paper session was a policy discussion panel comprised of a mix of practitioners, academics and policy-makers. Two keynote addresses provided by Connecticut Governor Dannel Malloy and U.S. Senator Richard Blumenthal capped the event.

## II. BIG PICTURE PLANNING IN LONG ISLAND SOUND AND BEYOND

The two panels devoted to the theme of *Big Picture Planning in Long Island Sound and Beyond* introduced and engaged the audience in a discussion regarding marine spatial planning (MSP) efforts within the social, legal, and political context of Long Island Sound (LIS), the northeast region of the United States, and neighboring states. Framing this conversation was the newly passed Connecticut Blue Plan law (PA 15-66), which became effective July 1, 2015. This new law seeks to create a resource and use inventory for LIS and develop a spatially-based marine plan which will enhance stewardship of LIS, promote science-based management, take into account the natural, social, cultural, historic

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<sup>2</sup> A fourth paper was presented at the symposium but the author did not wish to submit it as a paper for publication.

and economic characteristics of the Sound, and protect traditional water-dependent uses and activities. This legislation, however, cannot be fully or successfully implemented unless and until the state of New York becomes an active partner in these planning and management efforts. The symposium organizers sought to create a forum to explore the legal models which could best serve the needs of New York, Connecticut, and the LIS ecosystem. Although representatives of New York Departments of State and Environmental Conservation were invited to participate in this symposium, they were unable to, indicating the potential for challenges to creating a bi-state marine spatial planning approach.

Landward of the high tide line, there are ample examples of interstate cooperation and coordination of management efforts, but fewer exist below and fewer yet involving the interplay of municipal and state governance. Comprehensive marine spatial plans have recently been adopted in the neighboring states of Rhode Island and Massachusetts and these may supply useful lessons and cases amenable to comparative analyses. The two papers presented at the symposium, and included in this special edition, focused on a range of legal and policy questions – both theoretical and empirical - regarding the implementation of MSP. The paper authored by John Duff from the University of Massachusetts, Boston examines arenas and imperatives for the participation of local jurisdictions in MSP efforts. The second paper, authored by Nathaniel Trumbull and Syma Ebbin of the University of Connecticut, reports results of their survey of practitioners engaged in developing and implementing MSP in LIS. The research findings provide an assessment of the consistency or conflict between the regulatory approaches taken by New York and Connecticut with respect to a suite of marine-based activities in LIS.

These scholarly presentations were enhanced by a panel discussion among policy-level stakeholders involved in LIS and regional MSP efforts. The panel, moderated by Brian Thompson, Director of the Office of Long Island Sound Programs in the Connecticut Department of Energy and Environmental Protection, included: Betsy Nicholson, Northeast Regional Director of the National Oceanic and Atmospheric Administration (NOAA) Office for Coastal Management; Grover Fugate, Executive Director of the Rhode Island Coastal Resources Management Council; Nathan Frohling, Director Connecticut Coastal & Marine Initiatives of The Nature Conservancy; and Shelby Green, Professor of Law at Pace University. This panel examined policies and issues that have arisen

from MSP implementation efforts from a boots-on-the-ground perspective. A digital archive of this panel and the entire symposium can be viewed at: [https://www.youtube.com/playlist?list=PL9wCpXrRsuXPbatrH\\_-242njjTBLAe1qs](https://www.youtube.com/playlist?list=PL9wCpXrRsuXPbatrH_-242njjTBLAe1qs).

### III. ACHIEVING RESILIENCE THROUGH INSURANCE AND FINANCE

The two panels which focused on the theme of *Achieving Resilience through Insurance and Finance* examined a suite of financial and insurance strategies aimed at fostering and realizing resilient communities.<sup>3</sup> The focus was broad and included presentations on the use and development of public and private sector financial tools, programs, and strategies aimed at providing incentives to promote resilient development, specifically focusing on the role of the insurance and reinsurance industries, businesses, and cooperative state financing structures in modifying behaviors to enhance resilience.

Addressing these themes, four contributed papers were presented, however, only three are included in this special issue. Emmeline Harrigan gave an oral presentation (not included as a paper) on her work as Program Manager of the Shore Up Connecticut program, which is aimed at enhancing the resilience of coastal communities and residents to coastal hazards. The state created the Shore Up Connecticut program, a revolving loan fund, after weathering the destructive storms Irene and Sandy, which made landfall in Connecticut in 2011 and 2012. The program, comprised of short term, low interest loans available to residential and commercial property-owners aims to enhance the resilience of their properties by elevating, building or retrofitting structures to be better able to withstand storms and flooding events. Rebecca French of the Connecticut Institute for Climate Resilience and Adaptation, Wayne Cobleigh of GZA GeoEnvironmental Inc., Jessica LeClair of the Connecticut Institute for Climate Resilience and Adaptation, and Yi Shi of the Yale School of Forestry and Environmental Studies present an overview of options, including existing and model programs and opportunities, which could be instituted in Connecticut to finance efforts to enhance resilience. The paper authored by John Ryan-Henry, a student at the Roger Williams University School of Law, focuses on the potential to use reforms

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<sup>3</sup> See CERES, BUILDING CLIMATE RESILIENCE IN CITIES: PRIORITIES FOR COLLABORATIVE ACTION (2013), available at <http://www.ceres.org/resources/reports/building-climate-resilience-in-cities-priorities-for-collaborative-action/view>.

of the National Flood Insurance Program to enhance municipal resilience to climate change impacts. Finally, Porter Hoagland and student Michael Graikoski, with the Marine Policy Center within the Woods Hole Oceanographic Institution, present a paper on their research efforts, funded by the Northeast Sea Grant Consortium, which examines the potential to use market-based rolling easements to enhance the resilience of coastal communities in Massachusetts.

Similar to the Big Picture Planning topic, the discussion on Insurance and Finance was capped by a policy discussion, moderated by Peter Kochenburger, Director of the Insurance Law Center at the University of Connecticut School of Law. The panel included a diversity of policy-makers and practitioners including Connecticut Insurance Commissioner Katharine Wade, Rhode Island Superintendent of Insurance Elizabeth Dwyer, Brian Farnen, Chief Legal Officer with the Connecticut Green Bank, and Eric Nelson, Senior Vice President of Catastrophe Underwriting Risk, Strategy and Analysis, at Travelers Insurance. Again, the digital archive of these panels can be viewed at: [https://www.youtube.com/playlist?list=PL9wCpXrRsuXPbtrH\\_-242njjTBLAe1qs](https://www.youtube.com/playlist?list=PL9wCpXrRsuXPbtrH_-242njjTBLAe1qs).

Feedback from the conference was positive and efforts to enhance Connecticut's resilience both at sea and on land continue. The ability to communicate, cross-fertilize and share ideas, report on the efficacy and performance of existing programs, and borrow working solutions in use in other areas, are important activities if we are to achieve resilient human-natural systems on both sides of the high tide line. The organizers hope that their 2016 *Big Picture* symposium has made a contribution in all these areas.