

Enhancing the Effectiveness of Decision Support Tools for Coastal Resilience R/6410-0017

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While sea level rise is a global phenomenon, adapting to its impacts is a local decision-making challenge. Through land use planning, development, and coastal management decisions, local decision makers play a key role in influencing the resilience of coastal communities to climate-change related sea level rise and storm surge. Faced with a variety of conflicting mandates and uncertainty as to the appropriate responses, local land use planners and managers are increasingly relying upon place-based decision support system tools that outline a range of geographically targeted management options. Recent experience with extreme events such as Super-storm Sandy reveals that 1) coastal managers need timely access to site-specific information to aid both strategic and tactical decision making; and, 2) forms of information access and content that are most effective vary with pre-existing characteristics of diverse local communities.

The proposed research builds upon the research team's ongoing efforts to develop place-based decision-support tools for coastal resilience and to train local communities and decision makers in the use of these tools. The study approach draws upon emerging best-practices in climate adaptation and disaster risk-management research which emphasize co-design and co-creation of climate risk and adaptation information and tools via two-way engagement between scientists and a diverse group of stakeholders. The target stakeholder group for the study includes a broad suite of coastal decision makers, i.e., people representing government agencies or non-governmental organizations that are involved in land use planning, emergency management and natural



resource management.

A major outcome of this research will be a rigorous evaluation of the effectiveness of existing place-based decision support tools along with an investigation of the effectiveness of community-based technical assistance for risk management decision-making and enhancement of coastal resilience. This research will also shine light on the factors that enhance and impede community resilience, with a particular focus on the inherent characteristics of communities associated with adoption and implementation of decision support for coastal resilience (i.e., who is taking action?). Not only will this contribute to the growing field of resilience studies, it will help determine what makes decision support tools and technical assistance most effective for different types of communities. In the future, this could be used to adapt or develop new approaches targeted at the varied needs and capacities of diverse coastal communities.