



### Presenter

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### Coastal Hazards, Risk Perceptions and Reality

Natural beauty and abundant recreational opportunities make North Carolina (NC) coastal communities highly desirable places to vacation, live, and own a second home. The economy of coastal NC is tourism-dependent and thereby structured to support visitation, as well as the construction of and services for second home and tourism development, such as retail trade, vacation rentals, and recreation and leisure amenities. However, coastal NC is subject to severe weather events, erosion, and flooding in low-lying areas of the coastal plain. It also ranks third in the nation in the frequency of hurricane strikes. Coastal population growth, residential and commercial development, and loss of coastal ecosystems intensify these impacts. Coastal tourism amenities are particularly vulnerable to impacts from weather and climate events, including inundation due to flooding, storm surge, and sea level rise. Not only can changes in climate directly affect the appeal of a destination to visitors, but most notably, current and future property owners, as well. Such impacts to the markets engaged in construction and maintenance of second homes influence both local and regional economies. Yet many property owners in these regions are unaware that their properties are located in areas subject to climate- and weather-related natural hazards. This study will, therefore, bridge this information gap by identifying and comparing the reality of these risks with property owners' risk perceptions.

Three coastal counties in NC (Pender, Brunswick and Currituck) were selected for this study based upon their proximity to the coast, tourism and recreation assets, and high concentration of vacation homes. The economies of these counties are dependent upon tourism, with approximately \$861.3 million in visitor spending in 2016 in these three regions alone. In addition, second home ownership encompasses nearly 40% of the single-family housing stock. Multiple social science research methods were employed in this study, including focus groups, web and paper surveys, and questionnaires administered through telephone interviews. GIS modeling was used to identify properties that are at risk of three specific types of hazards: storm surge, erosion, and flooding. Data were collected from 1278 randomly selected property owners, both full-time residents and second homeowners, in the three counties. The objectives were to: 1) investigate the awareness and attitudes of property owners regarding the

potential impact of climate and weather on property ownership and values; 2) identify factors that most influence these attitudes; and 3) compare the reality of risk with property owners' perception of risk. Geographically Weighted Regression analysis was used to identify factors that influence property owners' perceptions of potential climate and weather effects on their property. Results from this study, especially spatially-based data regarding both risk and risk perception, will delineate factors that could be used to identify neighborhoods and households that would most benefit from differentiated risk reduction programs. This will prove to be relevant in informing emergency managers and stakeholders of ways in which public knowledge of, and perception of, risk may influence individual and community decisions to increase resiliency to coastal hazards.