

Resilience and Vulnerability in a Coastal Social-Ecological System

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Throughout the United States and across the world social-ecological systems are increasingly faced with threats, disturbances, and perturbations. The ability of these systems to manage such stresses and continue to maintain vital functions, structures, and processes is known as resilience. One such social-ecological system that faces potential threats and irreversible alterations in the future is the coastal communities of Franklin and Gulf County, Florida. This system is threatened by both natural disasters, such as hurricanes, and human induced disasters, such as oil spills. Both counties contain diverse natural settings, a variety of land ownerships, and a number of traditional towns and lifestyles, thus creating unique and intricate social-ecological systems. With this in mind, resilience of the Franklin and Gulf County communities was examined to understand the capacity of existing systems to cope with future disturbances. Data collection focused on gaining insight into and spatially representing opinions related to places of ecological importance, places experiencing ecological disturbances, livelihood dependence on the natural environment, recreational use of specific places, and location preferences for conservation and development. The primary objective of gathering this information was to identify critical elements of resilience and potential vulnerabilities within the social-ecological systems. A secondary aim of the study was to determine how and where local residents acquired information concerning issues of ecological importance. In order to obtain relevant data, nineteen focus group discussions were conducted. A diversity of focus groups were conducted to represent a broad range of opinions and ideas. Qualitative analysis within QSR NVivo and spatial analysis within ESRI ArcGIS were employed to analyze findings. Analysis of study findings demonstrates a sufficient lack of resilience accompanied by a host of vulnerabilities within the local communities. Vulnerabilities causing a lack of resilience include minimal flexibility in livelihood approaches and economic opportunities, lack of income and assets for those dependent on ecological systems, an overall lack of community assets and infrastructure, minimal education for those dependent on ecological systems, insufficient trust between natural resource regulators and individuals dependent on those resources, and external environmental threats such as pollution and undesirable development. In order for communities in Franklin and Gulf County to overcome these vulnerabilities resilience must be actively managed and new management practices must be continually developed as systems change. Potential opportunities to address these vulnerabilities include expanding economic and income generating strategies, exploring new methods to increase community assets and infrastructure, advancements in education, development of trustworthy and lasting relationships between resource agencies and resource users, and formulation and enforcement of necessary environmental policies. As many residents in the communities are dependent on natural resources or natural resource related tourism, which are fixed in place and vulnerable to natural and manmade disasters, overcoming these vulnerabilities and enhancing resilience will be critical to the maintenance of social and ecological systems.