Use of Natural and Nature-based Features (NNBF) for Coastal Resilience

Abstract

Coastal systems are increasingly vulnerable to flooding due to the combined influence of coastal storms, development and Pop growth, geomorphic change, and sea level rise. This reality has given rise to efforts to make greater use of ecosystem-based approaches to reduce risks from coastal storms, approaches which draw from the capacity of wetlands, beaches and dunes, biogenic reefs, and other natural features to reduce the impacts of storm surge and waves. This report offers details regarding the use of natural and nature-based features (NNBF) to improve coastal resilience, and was designed to support post-Hurricane Sandy recovery efforts under the North Atlantic Coast Comprehensive Study (NACCS). An integrative framework is offered herein that focuses on classifying NNBF, characterizing vulnerability, developing performance metrics, incorporating regional sediment management, monitoring and adaptively managing from a systems perspective, and addressing key policy challenges. As progress is made on these and other actions across the many organizations contributing to the use of NNBF, implementation of the full array of measures available will reduce the risks and enhance the resilience of the region's coastal systems.

The report was prepared jointly by staff from the U.S. Army Engineer and Research Development Center (CEERD) and the Institute of Water Resources (CEIWR) at the request of the U.S. Army Corps of Engineers, Baltimore District. Contributors to the report include the following:

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