

The Evolution of Resilience in Integrated Coastal Systems: Chesapeake Bay

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The Baltimore District, U.S. Army Corps of Engineers (USACE), in partnership with the Maryland Department of Natural Resources (DNR), has studied erosion on the shorelines of the Chesapeake Bay mainstem and tidal tributaries in Maryland. This study effort has resulted in a Management Guide for shoreline erosion in the Chesapeake Bay in Maryland, as well as a technical guide that is in preparation for solutions to shoreline erosion. The Management Guide was prepared to address three primary needs:

- Identify areas around the Chesapeake Bay in Maryland where ecological, socioeconomic, or cultural resources may be vulnerable to effects from shoreline erosion over 50 years.
- Provide information on using stand-alone and online Geographic Information Systems (GIS) tools to screen and evaluate potential impacts from shoreline erosion
- Present background data and studies that may be used to support shoreline erosion project formulation.

The identification of areas that may be vulnerable to shoreline erosion was based on a projection of shoreline erosion over a 50-year planning window. The Erosion Vulnerability Assessment (EVA) is an online mapping application utilizing a suite of shoreline related data providing planners, managers, and the general public with information about resources, land use, features, and infrastructure susceptible to shoreline erosion over the 50-year planning horizon. The location of various resources with respect to the predicted 50-year shoreline was evaluated. Criteria were developed to rank erosion vulnerability of ecological resources such as wetlands and beaches during the 50-year window. Socioeconomic features were depicted with respect to the zone of vulnerability defined by the 50-year planning window. In conjunction with projections of sea-level rise and shoreline condition, the EVA tool and the Management Guide help to identify resilient shorelines, wetlands, and infrastructure.

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