

Coastal Resilience, Long Island, USA

Coastal Resilience Project:

The purpose of the Coastal Resilience project is to provide communities with easy access to information to assist in coastal planning, zoning, acquisition, and other management decisions regarding resources at risk from sea level rise and coastal hazards. One of the principal products of the project is a spatially explicit tool that provides forecasts of inundation on the south shore of Long Island under different sea level rise scenarios. The aim of this web mapping tool is to provide communities with easy access to information for their planning, zoning, acquisition and permitting decisions.

Category: Ecological

General Description:

Potential marsh loss is defined as present-day marshes below mean low water in 2080 under a high end A2 sea level rise calculation (i.e. permanently inundated). This calculation assumes no vertical accretion or marsh migration and should be interpreted as a general estimation of potential marsh loss if the rate of SLR exceeds the rate of marsh migration/accretion. Because of limitations in the elevation dataset, calculating mean low water for other SLR scenarios was not possible.

Source:

1. 1974 wetland inventory dataset with 1995 update for Shinnecock Bay area: NY DEC
2. 2006 Suffolk Co. LiDAR dataset with SLR projections: Suffolk County; Columbia University, Goddard Institute

Caveats and limitations:

This calculation assumes no vertical accretion or marsh migration and should be interpreted as a general estimation of potential marsh loss if the rate of SLR exceeds the rate of marsh migration/accretion.

To more accurately estimate future marsh loss, more detailed data than is currently available would need to be employed; data such as local marsh accretion rates and fine-scale local land cover data, which was not available for our study area, should be used to estimate marsh migration potential and viability.

This is a general estimation and should not be used to identify which marshes are a "lost cause" and which ones will remain throughout the coming years. To most accurately capture the viability of marshes, a marsh-specific, "on the ground" analysis would need to be employed. This type of analysis was beyond the scope of this project, although the Conservancy intends to do such work in future phases of this project.

This dataset is dated (1974 with minimal updates in 1995), but remains the primary spatial dataset upon which regulatory decisions are made within Suffolk County. Due to the historical nature of this dataset, this dataset likely contains inaccuracies as the spatial

distribution of marshes in Suffolk County has undoubtedly changed over the past 30 years. The Coastal Resilience web application will serve updated tidal marsh data as it becomes available.

Process:

- Calculated total marsh area below mean low water in 2080 under a high end A2 sea-level rise scenario.

The Nature Conservancy
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