



## Sea Level Change and Storm Surge Projections

### Background

Human-caused climate change presents numerous challenges for the management of sites administered by the U.S. National Park Service (NPS). Warming global temperatures are a particular concern for park units within the coastal zone, where sea level rise has the potential to significantly impact park operations, infrastructure, and natural and cultural resources. Sea level rise can also exacerbate damage from storm surge, as was observed with the passage of Hurricanes Katrina and Sandy. Sea level rise impacts in the coastal zone are discussed in further detail in a September 2013 article in *Park Science*; <http://go.usa.gov/Wn3A>

### Approach

To meet these challenges, park managers must rely upon the best available sea level and storm surge projections for park planning efforts, including general management plans, foundation documents, and state of the park reports. In 2013 the NPS funded a three-year project to identify the vulnerability of 118 coastal parks to sea level change and storm surge.

A project team from the University of Colorado Boulder is compiling sea level change data under a number of climate scenarios. These data contain information gathered from the Intergovernmental Panel on Climate Change and the U.S. Army Corps of Engineers. Sea level change scenarios are combined with NOAA models to estimate which areas could be inundated by sea level change and storm surge over the next century. The project provides data over multiple time horizons to inform potential future adaptation efforts. Furthermore, the results of this project are being utilized by NPS personnel in the development of public interpretation, education, and outreach materials.

The following either have or will be produced as part of this project:

- Data are currently being incorporated into interim projects, such as foundation documents, state of the park reports, or other planning documents, as it becomes available.
- A website providing access to sea level change and storm surge data resulting from this project; <https://www.flickr.com/photos/125040673@N03/sets/>
- Interpretive wayside exhibits were installed at Gulf Islands National Seashore. More waysides are expected to be installed in Jean Lafitte National Historical Park and Preserve and Fire Island National Seashore in 2016.

This is a three year project that will be completed by the NPS Centennial in 2016. Researchers on this project include:

- Dr. Maria Caffrey; University of Colorado; PI
- Dr. Steven Nerem; University of Colorado
- Leanne Lestak; University of Colorado Institute of Arctic and Alpine Research



A storm surge map created for Fort Monroe National Monument

### More Information

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