Case Study 7:
Lighthouse Stabilization Design Incorporates Sea Level Rise, *Fort Pulaski National Monument, Georgia*

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The Cockspur Lighthouse at Fort Pulaski National Monument needs to be stabilized. Image credit: Mike Eissenberg, NPS.

Goals

The goal of this project was to develop a plan to stabilize a historic lighthouse at Fort Pulaski National Monument in a way that considered expected sea level rise and related impacts.

Challenges and Needs

The historic revetment around the Cockspur Lighthouse has eroded away in the past 30 years, and a portion of the original wooden foundation has been exposed to shipworm damage. Ongoing erosion around the revetment has led to concern about the possibility of severe structural damage in the next few years.

To stabilize the lighthouse, the park needed to design a structure that can withstand sea level rise over the next 20 years and related impacts such as increased wave heights.

Responsive Actions

The revetment will be modified to protect against sea level rise over the next 20 years assuming that the current rate of rise will continue. The modification will be constructed to allow for future adaptation to accommodate faster rates of rise. Project design would be improved by development of a reproducible process that could estimate local sea level rise qualitatively or quantitatively, incorporating contemporary science and evaluating risks.

This and other projects would benefit from identifying appropriate climate change issues that should be addressed as part of the project development process. A predictable and transparent process for addressing climate-related impacts would minimize surprises and modifications to project design, and would improve the effectiveness of dialogue among stakeholders.

To improve understanding of current and future sea level rise, the park has identified global sea level rise projections from the Intergovernmental Panel on Climate Change, historic rates calculated by National Oceanic and Atmospheric Association, and trends in local water level monitoring data collected at the park.

This case study is an example of the following adaptation strategies:

- Incorporating climate change into policies, plans, and regulations
- Conducting/gathering additional research, data, or products
- Making infrastructure resistant or resilient to climate change
- Developing/implementing an adaptation plan
- Short-term adaptation coupled with watchful waiting

For more information:

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