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Coastal Adaptation Strategies: Case Studies of National Park Service Lessons Learned



Rebecca Beavers, Ph.D.
Coastal Geology & Coastal Adaptation Coordinator

Presenter: Amanda Babson, Ph.D.
Coastal Landscape Adaptation Coordinator, Northeast Region

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Inventory, document, and interpret archaeological and cultural resources



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- Olympic National Park (WA)**
Archaeological sites are eroding:
- Communicate with 8 tribes to prioritize adaptation actions
 - Inventory resources
 - Develop long-term management plans
 - Interdisciplinary approach to cultural and natural resources

- Canaveral National Seashore (FL)**
Shell middens are eroding and vulnerable:
- Document the resource
 - Shoreline stabilization
 - Interpret the change

Invest responsibly in historic structures: stabilize or relocate



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- Dry Tortugas National Park (FL)**
- Sea level rise, increased tropical storm intensity, and rusting iron components cause structural damage
 - Stabilize exterior walls and moat wall
 - Remove iron shutters
 - Strategic planning for future repairs

- Cape Hatteras National Seashore (NC)**
- Threatened by erosion despite nourishment, groins, and sandbags
 - Moved inland using a railway
 - Required funding, litigation, and public support
 - Marker stones at former location are continually buried and exposed

Alaska response focuses on data development and archiving



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Bering Land Bridge and Cape Krusenstern

- Development of datasets related to climate change vulnerability
- Development of biological monitoring protocols
- Archaeological excavations



Enhance resilience of natural resources



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Gateway National Recreation Area (NY/NJ)

- Increase marsh elevation with sediment addition and plantings
- Restore habitat and function



Point Reyes National Seashore (CA)

- Restore agricultural lands to wetlands

Facilities: Rebuild, relocate, or replace with alternatives



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- Remove seawalls and move facilities landward
- Build expendable roads
- Establish alternative transportation systems (ferries)

Cape Cod National Seashore (MA)



Gulf Islands National Seashore (MS/FL)



Facilities: Rebuild, relocate, or replace with alternatives



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Everglades National Park (FL-top) and Assateague Island National Seashore (MD/VA-bottom)

- Moveable bathhouses and eco-tents
- Parking lots made of native materials (shells and clay)

Incorporate possible futures into long-term management plan



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Assateague Island National Seashore (MD/VA)

- Facility sustainability and replacement
- Visitor access
- Response to natural processes (such as island breach)
- Balance of visitor use and wilderness values
- Cooperation with partner land management agencies

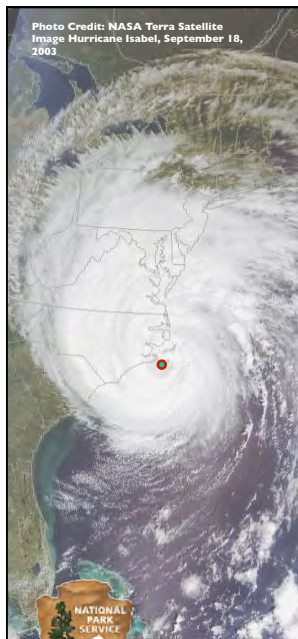


Photo Credit: NASA Terra Satellite Image Hurricane Isabel, September 18, 2003

Cape Lookout National Seashore (NC) Storm Recovery Plan



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- Focus on Natural and Cultural Resources
- Includes Pre-Storm Preparedness and Phased Post-Storm Response Actions
- Works with Existing Hurricane Preparedness Plan
- Intended to Aid Incident Commanders and Teams
- Uses GPS Data, GIS and Photos to Guide Response Teams
- Discusses Long-Range Adaptation for Major Resources




National Park Service
U.S. Department of the Interior



Efforts

ADAPTATION TO SEA LEVEL RISE IN COASTAL PARKS



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Goal:
Provide practical & actionable options for adaptation to Sea Level Rise & storm impacts in coastal parks




Focus:
Infrastructure, cultural resources, & natural resources

Projects:


- Sea Level and Storm Surge Projections
- Many more....

Reports

- Coastal Assets Report (May 2015)
- Case Studies (*this talk*)
- Handbook (Internal NPS Review)

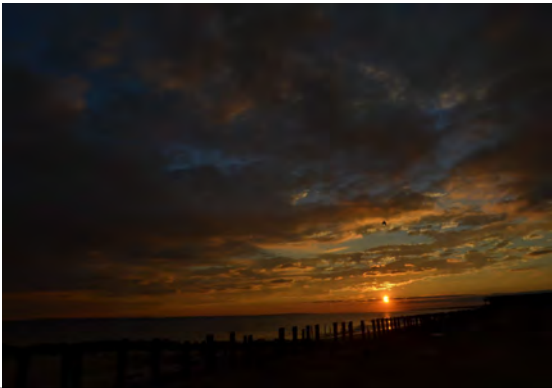


Thank you



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- Presenter: Amanda Babson, NPS Northeast Regional Office
- Report editors: Courtney Schupp, Rebecca Beavers, and Maria Caffrey
- Report authors, reviewers, and layout team



For more information



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Rebecca Beavers, Ph.D.

Coastal Geology & Coastal Adaptation Coordinator

Rebecca_Beavers@nps.gov

303-987-6945

<http://www.nps.gov/subjects/climatechange/coastaladaptation.htm>