



## NPS Coastal Geology Team

The coastal geology team facilitates scientifically and legally sound coastal resource management by:

- > providing parks with technical, policy, and regulatory assistance;
- > developing programmatic guidance and projects; and
- > working with parks, regions, and the NPS Directorate on climate change assessments and preparation.



Assateague Island National Seashore, Virginia. NPS photo courtesy of the park.

## NPS Policy for Coastal Park Units

It is NPS policy that natural coastal processes in parks will usually be allowed to continue without interference, but that intervention is permissible when:

- directed by Congress
- necessary in emergencies that threaten human life and property;
- there is no other feasible way to protect park resources or facilities; or
- intervention is necessary to mitigate or restore human-impacted areas or processes.

## Coastal Geology Research

Research greatly benefits coastal park managers by providing them with information necessary to protect and preserve coastal resources. If you are interested in conducting research in the National Parks, or establishing collaborative studies, visit: [www.nature.nps.gov/geology/publications/research\\_factsheet.pdf](http://www.nature.nps.gov/geology/publications/research_factsheet.pdf) or contact the natural resource manager for the park.



Submerged Resource Center divers at the USS Arizona Memorial, Hawaii.

The NPS is involved in research partnerships with the private sector, universities, and other government agencies. For example, the Geoscientists-in-the-Parks Program places experienced geoscience students and professionals in the parks. See more information on this program at: [www.nature.nps.gov/geology/gip](http://www.nature.nps.gov/geology/gip)

For NPS Coastal Geology team contacts and more information visit: [www.nature.nps.gov/geology/coastal](http://www.nature.nps.gov/geology/coastal)

# Coastal Geology in the National Parks







Canaveral National Seashore, Florida

## Coastal Geology in National Parks

The National Park System incorporates 83 coastal park units, including national parks, seashores, lakeshores, recreation areas, monuments, preserves, historic sites, and memorials. These areas encompass nearly 12,000 miles of shoreline and contain iconic American natural and cultural features including beaches, lighthouses, and historic forts.

Increasing pressures and environmental threats such as coastal population growth, pollution, habitat encroachment, and shoreline modifications have negatively impacted coastal areas. To protect and preserve our national coastal heritage the National Park Service (NPS) must have effective coastal zone management policies, a science-based understanding of the resources, and collaborative relationships with other coastal stakeholders.

In 2000 a Coastal Geology team was created within the NPS Geologic Resources Division to coordinate the needs of coastal park managers and distribute information to preserve our dynamic coastal environments. This brochure presents coastal geology issues and highlights work done by the NPS Coastal Geology team.

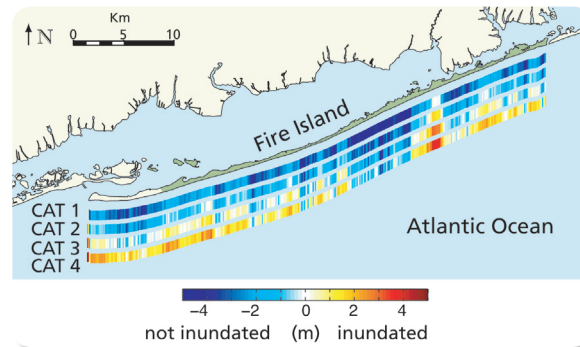
Cover: Olympic National Park, Washington.

## Current Projects

### Storm Vulnerability Assessment

Park-specific vulnerability assessments are being developed based on storm events the park is likely to experience. Examples include:

- Hurricane inundation vulnerability for Fire Island National Seashore (NS), Cumberland Island NS, and Cape Lookout NS.
- Coastal vulnerability to wave overtopping, sea level rise, and flooding for two National Park sites in Hawaii.
- Potomac River shoreline erosion vulnerability in George Washington Birthplace National Monument, Virginia.



Potential hurricane inundation at Fire Island National Seashore, New York. Figure provided by H. Stockdon.

### Ocean and Coastal Park Guidance Handbook

A handbook is being created that provides coastal park managers with general jurisdictional guidance on a broad array of ocean and coastal topics. The handbook will help NPS managers address coastal issues, understand and apply available authorities to maintain and improve protection of park resources, and enhance visitor enjoyment.

## Climate Change and Coastal Adaption

Climate variability and change are already affecting coastal parks through rising sea level, lowering Great Lakes water levels, increasing ocean acidity, and melting permafrost. The NPS is harnessing best-available science to develop landscape- and ecosystem-scale coastal adaptation strategies to protect coastal resources and promote their long-term resilience and sustainability.



Biscayne National Park, Florida. NPS photo courtesy of the park.

### Coastal Engineering Inventory

An inventory of coastal engineering projects completed in coastal parks is being compiled to help the NPS identify impacts to coastal processes and improve resource protection in the future. A pilot project has been completed for ten coastal parks. Results from this project are available online at: [www.nature.nps.gov/geology/coastal/storms.cfm](http://www.nature.nps.gov/geology/coastal/storms.cfm)



Golden Gate National Recreation Area, California. NPS photo courtesy of the park.