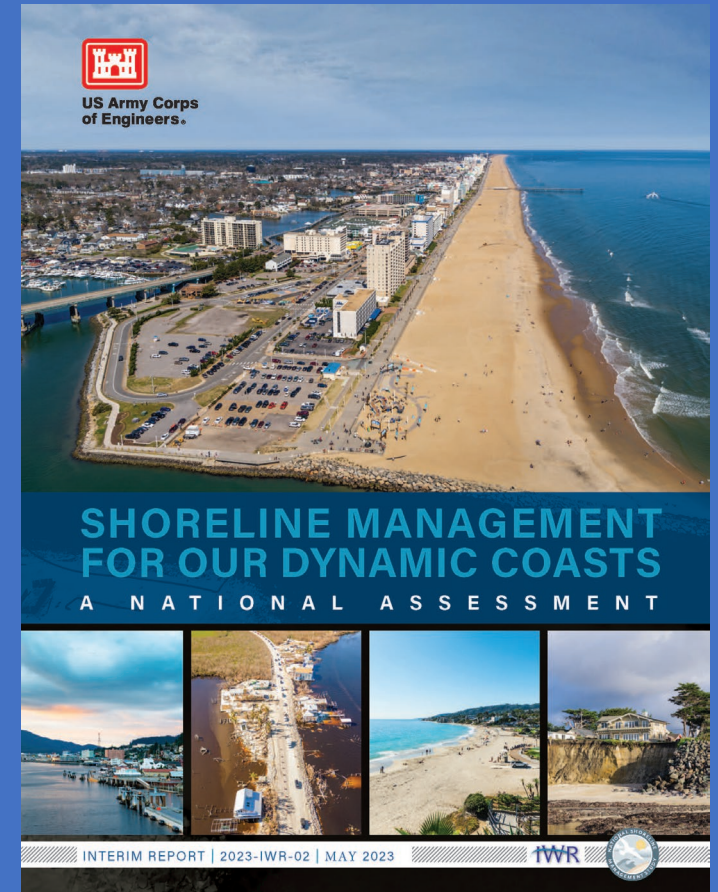




National Shoreline Management Study

NSMS National Assessment Report
PCoP Webinar Series

September 21, 2023



Agenda

- Welcome and Opening Remarks
- National Shoreline Management Study (NSMS) Overview
 - Authority
 - Completed, Ongoing, & Future Actions
- NSMS National Assessment Report Run-Through
- Summary Report Accompaniment Run-Through
- Implementing Recommendations
- NSMS Placemat
- NSMS Bottom-Line
 - Moving Forward
 - Strategic Communication Plan
 - Activities and Next Steps
- Discussion



Overview: Response to WRDA 1999 NSMS Authority

Reports: Section 215(c) of WRDA 1999 defined NSMS as: A description of (1) the extent of, and **economic and environmental effects** caused by, erosion and accretion along the shores of the U.S.; and (2) the **causes of such erosion and accretion**;

- Description of **resources committed** by fed, state, and local govts to restore and nourish shores;
- Description of **systematic movement of sand** along the shores; and
- Recommendations regarding (1) appropriate levels of **fed and non-fed participation in shore protection**; and (2) use of a **systems approach** to sand management.

Regional Assessment reports responsive to Section 215(c)(3) – use of specific location data in developing report

- Authority included Atlantic Ocean, Pacific Ocean, Great Lakes, Gulf of Mexico

People, Economy, Ecosystems

The U.S. has more than 95,000 miles of coast, including the continental U.S., Hawaii, Alaska, and the Great Lakes. These comprise open coasts, sheltered areas within estuaries, and back bays.

Our nation's coastal and Great Lakes shorelines are vital and dynamic systems that are increasingly strained by human-induced climate change and other stressors. Coastal storm impacts, complicated by sea level rise and other climate change effects, threaten lives and livelihoods, our coastal infrastructure, and our essential environmental and cultural resources.



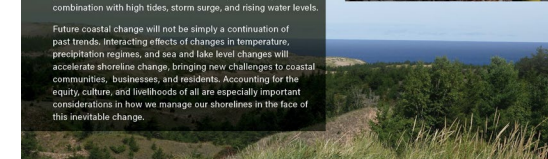

Our coasts encompass important links to global trade, vital energy hubs, and critical habitats for important species, including many that are threatened or endangered.

Key facts:

- Coastal counties are more than five times more densely populated than inland counties.
- Jobs within coastal counties are a critical component of the U.S. economy, making up 38% of all U.S. employment and contributing \$9.5 trillion to the gross domestic product.
- Coastal habitats are valuable resources important for recreation, commerce, and culture. They also support numerous threatened and endangered species.

Changing Coasts. Climate change is happening now. Protective sea ice melts earlier in Alaska and the Great Lakes and extreme precipitation leads to more coastal flooding, especially in combination with high tides, storm surge, and rising water levels.

Future coastal change will not be simply a continuation of past trends. Interacting effects of changes in temperature, precipitation regimes, and sea and lake level changes will accelerate shoreline change, bringing new challenges to coastal communities, businesses, and residents. Accounting for the equity, culture, and livelihoods of all are especially important considerations in how we manage our shorelines in the face of this inevitable change.

NATIONAL SHORELINE MANAGEMENT STUDY

"Erosion, sea level rise, and other climate change effects are degrading the economic, social, and environmental value of our coasts so valuable."
— Lieutenant General Scott A. Spellmon, 58th Chief of Commanding General of the U.S. Army Corps of Engineers

Our nation's coasts of climate change effects are clearly outpacing the ability to fully recover from one economic, social, and environmental disaster before our coasts so valuable.

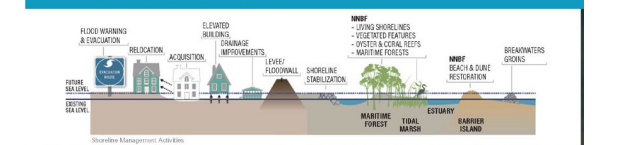
The *Shoreline Management for Our Dynamic Coast* National Assessment report, prepared as part of the National Shoreline Management Study (NSMS), was developed based on existing information and input from a variety of federal agencies, Tribal Nations and representative groups, national coastal interests, state and regional representatives, and researchers. Information from the eight NSMS Regional Assessment reports provided a launching point for the development of this National Assessment.

The National Assessment charts a course toward a holistic approach to shoreline management that considers climate change and the challenges it presents. It sets the stage for an aligned national commitment to the vitality of our important coastal systems that embodies an inclusive, equitable, science-based, and coordinated approach involving all levels of government.

This summary version of the full report outlines the importance of the coast for **People, the Economy, and Ecosystems**, and Current and Future Challenges. Seven **Recommendations**, with potential actions, are offered to improve coordination, promote collaboration, and address critical needs. The recommendations are designed to address **Impacts to Coastal Systems** from shoreline erosion, accretion, sea level rise, and coastal storms. Current **Shoreline Management** approaches are outlined as well as challenges and needs. **Opportunities for Progress** and the expected outcome of **A Dynamic and Resilient Future Coast** are described. The report ends with a collaborative **Path Forward** and reiteration of the recommendations.

Shoreline Management

Shoreline management includes planned coastal activities that seek to address existing and future problems caused by erosion, accretion, and flooding. Climate change will likely expose new areas to those risks and add complexity to the design and adaptation of shoreline management measures.



What do we do and what do we need?

MANAGEMENT APPROACH —
Hard structure solutions (e.g. seawalls, bulkheads, revetments, groins) are effective in many areas but can be costly, can locally alter sediment transport, and are difficult to adapt to changing climate patterns, and need maintenance over time.


CHALLENGES AND NEEDS —
Traditionally used approaches to coastal risk management may not be compatible with the natural dynamics of shorelines. Economically viable and environmentally sustainable approaches to manage long-term risk are needed.

Some natural and nature-based features (NINBFs) are widely used but require regular maintenance (e.g. beach and dune nourishment, wetland restoration) others (e.g. living shorelines, artificial oyster reefs, coral reefs) are being tested as alternatives to or in combination with structural solutions.

Research on the effectiveness of NINBFs, as well as revisions to guidance, policies, and regulations, are needed to support the application of a full array of coastal resilience tools.

Nonstructural approaches include structural elevation, managed retreat, and institutional and regulatory solutions to limit land uses in vulnerable areas. Other examples include preservation of existing lands, zoning, and coastal management plans.

Emerging shoreline management approaches such as managed retreat face implementation challenges because of inconsistent guidance and policies.



Overview: NSMS Program – Completed, Ongoing, & Future Actions

Regional & National Assessments

- 8 regional NSMS assessment reports (complete)
- NSMS National Assessment report (undergoing ASA(CW) and OMB review)
- Beneficial Use of Dredged Material report (BUDM) (pending)
- Territories and Commonwealths Assessments (Caribbean initiated – Pacific initiation FY24)
- *Cyclical updates to NSMS Regional Assessments and National Assessment*
- *Support actions associated with recommendations – track multi-agency efforts*

Coastal Storm Damages Prevented (CSDP) Tool

- Provides consistent approach for reporting damages prevented by CSRMs projects each year
- Available to field in FY 23 - *to be added in FY24 to Annual Flood Damage Report to Congress*
- What-If Scenario Analysis: rapid assessment of project performance under different conditions
- *Future Storm Risk Scenario Analysis*

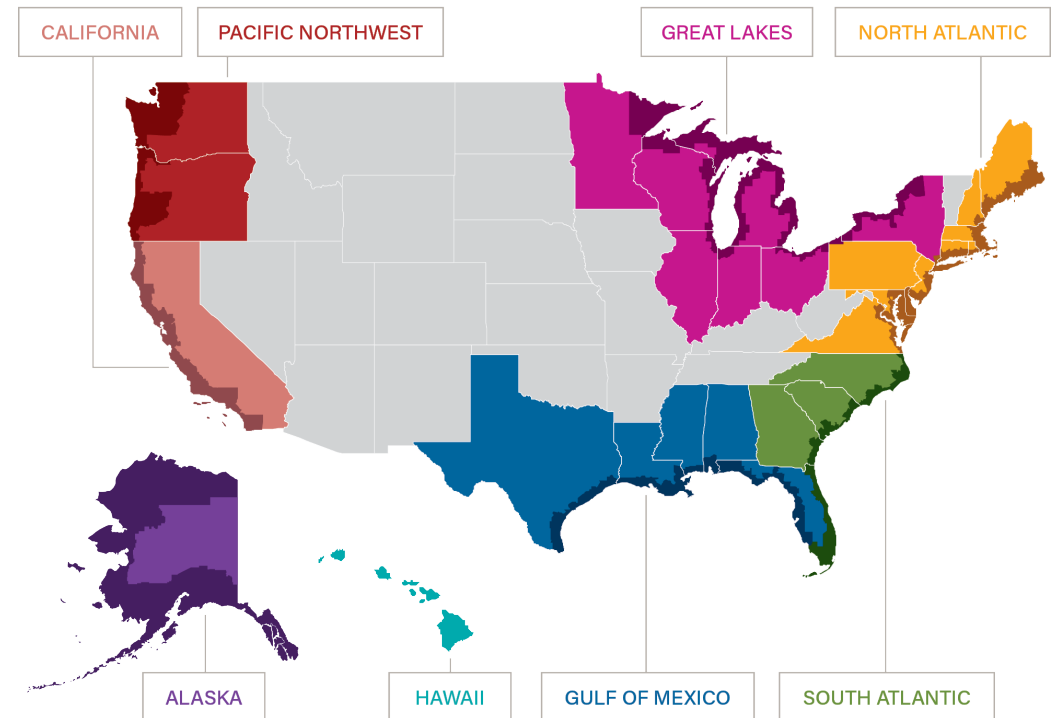
Coastal Systems Portfolio Initiative (CSPI)

- Database of USACE coastal projects/portfolio
- Non-sensitive data available to the Public
- Link to other databases
- *Expand and enhance tool capabilities*

Overview: The National Assessment Report

- Responds to study authority but not intended to close authority
 - Utilizes existing data and available information – no new data collection
 - Interim report and living document to be updated on a cyclical basis (timeframe to be determined)
- Documents multi-voice perspectives from External Interests
 - Input on development of report content sought from high-ranking officials of federal agencies, Tribal Nations and representative groups, national coastal interests, state and regional representatives, and researchers
 - Outreach and engagement strategy aligns with regional assessment efforts
- Provides recommendations to Congress to address current and future coastal challenges, but is not a USACE decision document
 - No Federal Interest Determination
 - Focuses on national-level erosion and accretion issues, and shoreline management opportunities, in alignment with other USACE regional coastal efforts (NACCS, SACS, Coastal Texas, GLMRS)
- Includes National Assessment Report, 16-page Summary Report, and Placemat

Information from the **8 Regional Assessment** reports provided the launching point for the development of National Assessment content

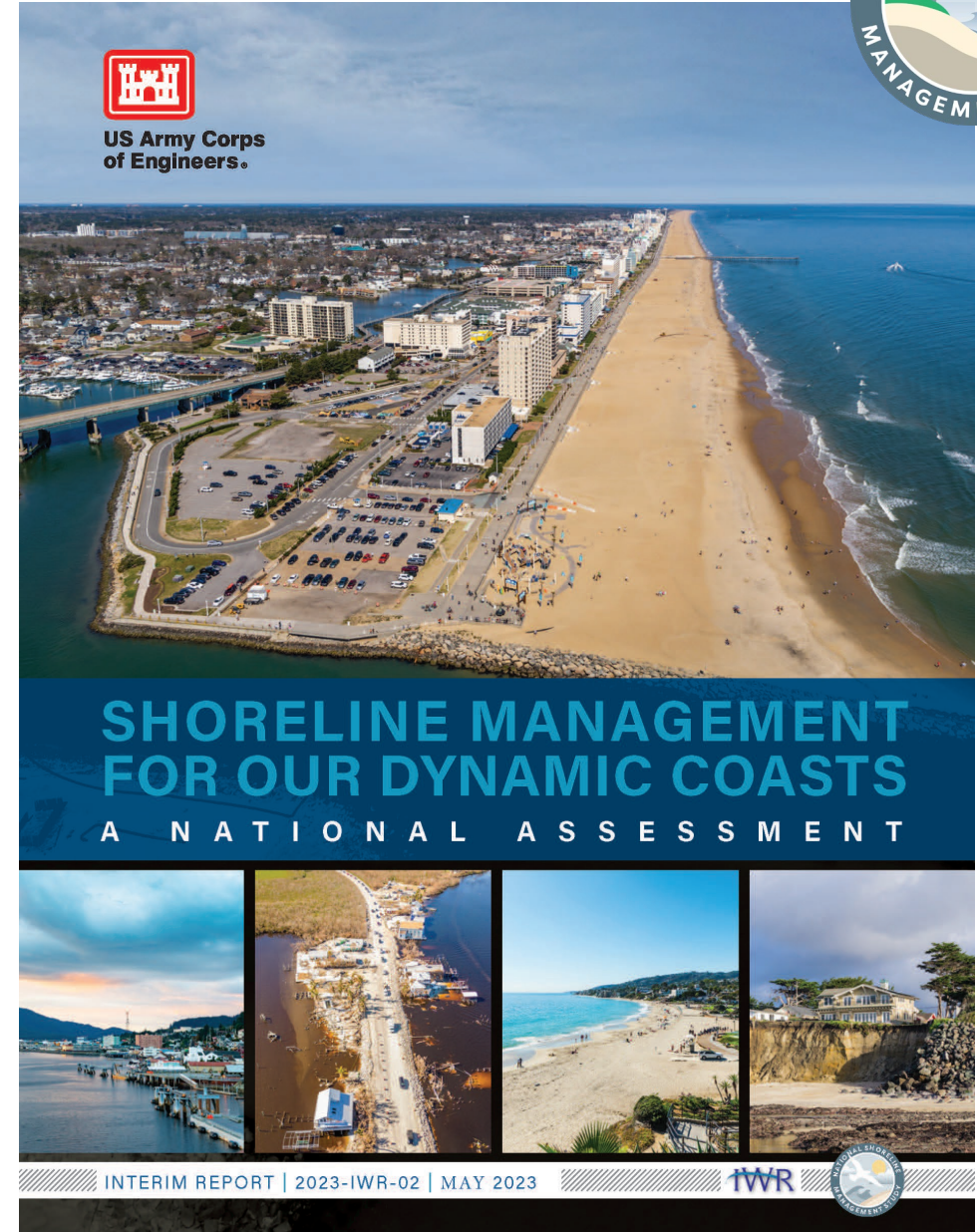


Caribbean and Pacific Territories & Commonwealths
Regional Assessments initiated in FY 23/24

NSMS National Assessment Report Overview & Run-Through



- Describes shoreline needs on a national scale
- Formatted to balance use of text, graphics, and pictures to tell the story
- Identifies and provides support for the importance of:
 - Economic, social and environmental aspects of shorelines
 - Highlights cultural resources, social vulnerability, tribal issues
 - Current and future shoreline management activities
 - Highlights the need for action regarding future sea level change and other climate risks
- Provides a foundation for a systems approach to shoreline management
- Provides recommendations for a science-based collaborative approach and a path forward



Summary Report Accompaniment

Provides a 16-page reference for Congress and other interests

Is a high-level summary of the National Assessment main report



Includes quote attributed to CG: "Erosion, sea level rise, and other climate change effects are degrading the economic, social, and environmental benefits that make our coasts so valuable."

Implementing Recommendations

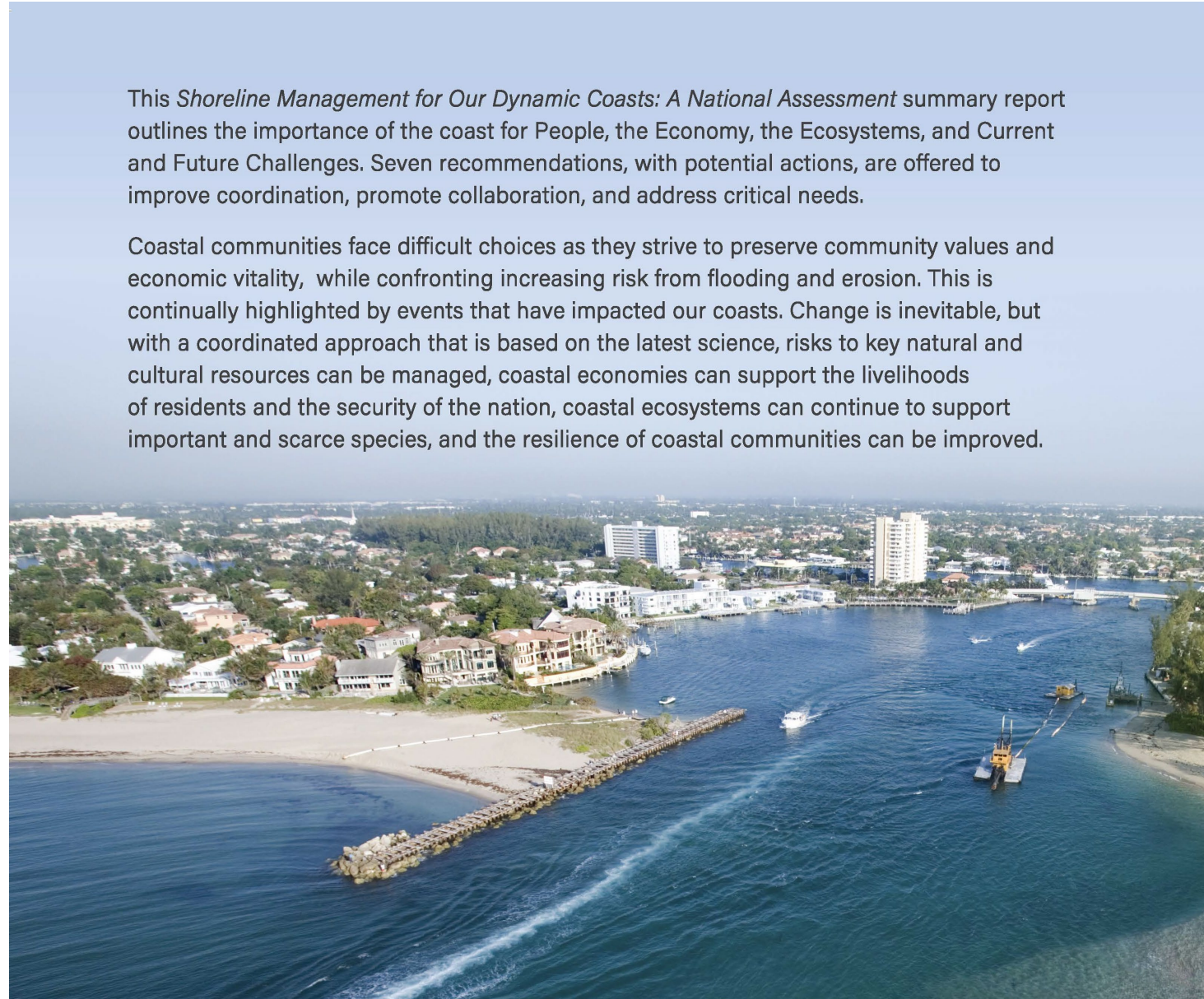
As Congress and national leaders consider the recommendations, collaboration among federal and other governmental agencies, NGOs, and Tribal Nations and their representatives will also be critical.

A **multi-agency framework** also needs to be developed and advanced to leverage available resources and facilitate actions that begin to address the recommendations.

Specific roles and additional resources for various agencies and supporting parties will need to be identified to enable comprehensive and cooperative implementation of actions for improved shoreline management.

This *Shoreline Management for Our Dynamic Coasts: A National Assessment* summary report outlines the importance of the coast for People, the Economy, the Ecosystems, and Current and Future Challenges. Seven recommendations, with potential actions, are offered to improve coordination, promote collaboration, and address critical needs.

Coastal communities face difficult choices as they strive to preserve community values and economic vitality, while confronting increasing risk from flooding and erosion. This is continually highlighted by events that have impacted our coasts. Change is inevitable, but with a coordinated approach that is based on the latest science, risks to key natural and cultural resources can be managed, coastal economies can support the livelihoods of residents and the security of the nation, coastal ecosystems can continue to support important and scarce species, and the resilience of coastal communities can be improved.



NSMS Placemat

Two-page summary highlighting:

- Report purpose – problem statement
- Current & future challenges
- Recommendations and potential actions
- Participation of External Interests
- Acknowledgement of Regional Assessments
- Study Specifics
 - NSMS products
 - Study Authority
 - Website and Email

NATIONAL SHORELINE MANAGEMENT STUDY

A NATIONAL ASSESSMENT OF OUR DYNAMIC COASTS

This National Assessment highlights the economic, social, and environmental importance of the nation's shorelines, and the changes that result from natural and human-induced influences on coastal processes, including erosion and accretion. It has been developed based on existing and available information and input from a variety of federal agencies, Tribal Nations and representative groups, national coastal interests, state and regional representatives, and researchers. Information from the eight National Shoreline Management Study (NSMS) regional assessment reports provided a launching point for this National Assessment. Key findings and recommendations focus on proposed actions to implement at the national scale.

Our nation's coastlines are in crisis. Erosion, sea level rise, and other climate change effects are degrading the economic, social, and environmental benefits that make our coasts so valuable.

Importance of Coasts to People, Economy, and Ecosystems

- Coastal counties are five times more densely populated than inland areas.
- Coastal counties have 38% of U.S. employment and add \$9.5 trillion to the national gross domestic product.
- Healthy coastal ecosystems provide critical support to shoreline resiliency, sensitive species, recreational and commercial activities, and cultural heritage.

Current & Future Challenges

Future coastal change will not be simply a continuation of past trends. Weather extremes, sea level rise, and other compounding effects of climate change directly affect shoreline erosion and accretion now, with predictions of a more uncertain future. Interacting effects of changing temperature, precipitation regimes, and sea and lake levels will bring new challenges to coastal communities, businesses, and residents. Coastal communities face difficult choices as they adapt, and many will need technical support and financial assistance to confront increasing risk from flooding and erosion.

Recommendations for Advancing a Collaborative Approach

The seven recommendations of the *National Assessment* provide a practicable and collaborative path forward that supports a national commitment to address current and future coastal challenges by working together, using science, streamlining processes, and identifying and leveraging resources. With a coordinated approach, risks to key natural and cultural resources can be managed, coastal economies can support the livelihoods of residents and the security of the nation, coastal ecosystems can continue to support important and scarce species, and the resilience of coastal communities can be improved.

Study Overview

Key NSMS Products

- Regional Assessment Reports
- 8 Regional Assessments (plus 5 Great Lakes Assessments)
- Caribbean Territories Assessment Report (2024)
- Pacific Territories Assessment Report (2025)

National Assessment Report

RECOMMENDATIONS AND POTENTIAL ACTIONS

We must start now and continue to improve coastal resilience for posterity. Action to support a resilient coast requires inclusive dialogue among federal, Tribal, state, and local governments, non-governmental organizations, and residents; must be supported by the latest science.

Establish A National Shoreline Management Program

Establish a strategic, cross-agency, coordinated national program for planning, designing, implementing, and adapting shoreline management actions.

Potential Actions

- Authorize and resource a cross-agency federal National Shoreline Management Program to align existing agency authorities and missions.
- Collaboratively develop and document best management practices and approaches for shoreline management.
- Collaboratively develop and promote a best practices manual for retaining cultural heritage on eroding coasts.
- Develop equitable approaches and guidelines for shoreline management.
- Develop consistent cross-agency approaches and guidelines for planning and financing the relocation of coastal development and infrastructure.
- Assess and align federal agency policies and authorities and expand research, to support conservation and restoration of natural features and implementation of nature-based features.

"We need to revisit the issues that have led us to where we are today. If we agree that adapting to rapid shoreline change is a common goal, then we need to begin addressing our own obstacles to doing that."
— Woody Woodrow, U.S. Fish and Wildlife Service

Plan Collaboratively for the Future

Promote proactive planning for current and future changes in coastal systems at the regional and subregional scale.

Potential Actions

- Establish regional teams or networks that bring together federal, Tribal, state, and local agencies.
- Identify, refine, and maintain an openly accessible repository of available information on existing and proposed shoreline management activities.
- Create regional coastal resilience hubs to facilitate gathering and sharing of key program materials and lessons learned.
- Support and apply systems analyses to advance holistic shoreline management planning on regional and subregional scales.

Projecting Future Shoreline Change

Develop integrated projections of potential future physical, chemical, ecological, and socioeconomic coastal conditions, and their cumulative effects.

Potential Actions

- Coordinate across government agencies, research organizations, and Indigenous Peoples with ITEX to advance an Integrated Predictive Modeling Framework.
- Develop approaches to assess and regularly communicate expected changes in coastal risk.
- Review and refine tools for identifying equitable, financially viable, and environmentally sustainable solutions.

Invest for the Future of Coastal Communities

Ensure federal shoreline management investment decisions are based on factors that better reflect the impacts of coastal change and develop innovative finance mechanisms for coastal communities.

Potential Actions

- Identify and use metrics and approaches that encourage equitable decision-making.
- Disseminate information to ensure that Tribal Nations, states, local agencies, and other organizations understand how to obtain resources for shoreline management.
- Establish alternative funding programs across federal agencies to improve support for socially and economically vulnerable coastal communities.

Adapt to Changing Shoreline Conditions

Develop strategies for timely and efficient modification and/or adaptation of existing coastal projects.

Potential Actions

- Develop streamlined processes to allow modifications and adaptation of existing projects.
- Provide for modifications to projects subject to post-damage rehabilitations.
- Promote phased design that enables adaptation of projects.

Improve Use of Sediment Resources

Promote coordinated, efficient, effective, and adaptable uses of sediment resources.

Potential Actions

- Employ a more comprehensive approach to decision making on how and where to place dredged materials.
- Develop and adopt a systems approach to the advanced planning of dredging and beneficial use activities.
- Promote early coordination with federal, Tribal, state, and local agencies on dredge and placement activities.
- Manage projects that generate or need sediment on a regional basis.

Regularly Assess the Changing State of the Coast

Provide routine assessments of changes occurring in coastal physical, chemical, ecological, and socioeconomic conditions.

Potential Actions

- Regularly develop a State of the Coast report.
- Work across federal and state agencies and with Tribal Nations to establish common guidelines for tracking shoreline change data.

National Assessment Bottom Line - Considerations Moving Forward

The National Assessment report offers decision-makers recommendations to:

- establish a national program for shoreline management actions;
- collaborate and plan for the future at the regional and subregional scale;
- establish comprehensive integrated projections of future shoreline changes;
- improve financial support for coastal communities;
- develop strategies to adapt to climate change and population migration;
- improve the use of sediment resources; and
- regularly assess the changing state of the coast.

- We must start now and continue to improve coastal resilience for posterity.
 - action to support a resilient coast requires inclusive dialogue among federal, Tribal, state, and local governments, nongovernmental organizations, and residents; and,
 - must be supported by the latest science.
- USACE is initiating efforts to develop a coordinated framework to move forward with implementation of potential actions



“Erosion, sea level rise, and other climate change effects are degrading the economic, social, and environmental benefits that make our coasts so valuable.”

— Lieutenant General Scott A. Spellmon

NSMS National Assessment Report Strategic Communications Plan

FY 2023

Ready by ASA(CW) transmittal to Congress

Implementing soon after release

Prepped and ready

In the works

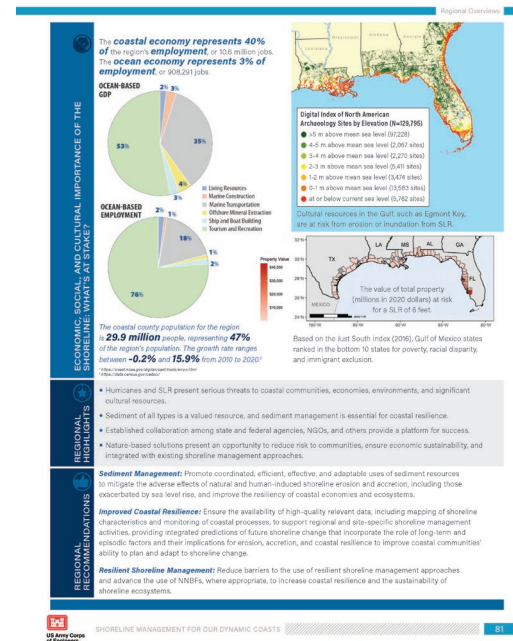
Other proposed future actions

- Inside the Castle Podcast
- NSMS Regional Assessment Reports
- <https://www.iwr.usace.army.mil/Missions/Coasts/National-Shoreline-Management/>
- 2-page regional overviews for the 8 completed NSMS RAs posted to the NSMS SharePoint site (HI, AK, PNW, CA, GOM, SA, NA, Great Lakes)

- Email notification to USACE national and senior leadership
- External interests announcement
- Press release and social media postings

- Engagement with other USACE Communities of Practice
- Support to ongoing USACE and ASA(CW) social media campaigns and regional engagements

<https://team.usace.army.mil/sites/IWR/PDT/NSM/Shared%20Documents/Forms/AllItems.aspx>



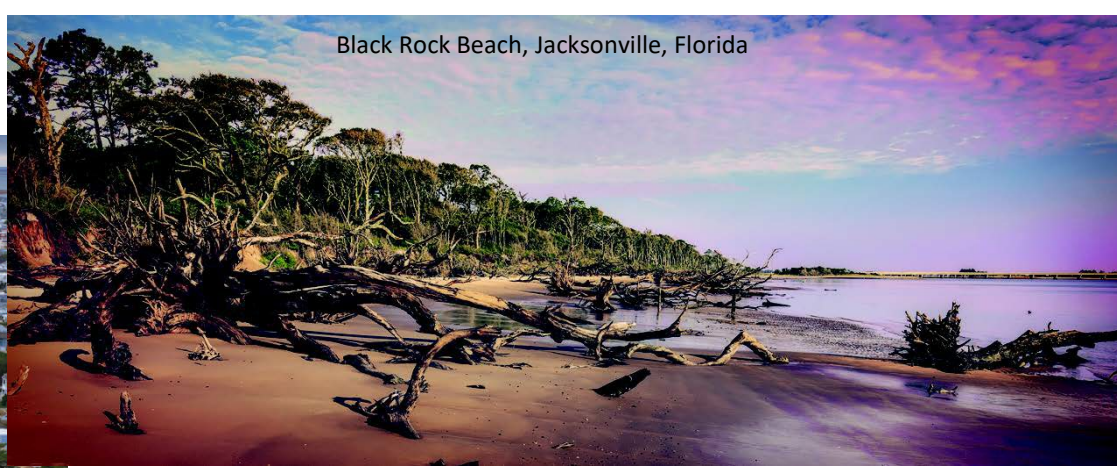
Ongoing NSMS Activities and Next Steps

- Territories and Commonwealths Assessments
- Future Regional Assessments & National Assessment report updates
 - Develop framework for USACE actions to address recommendations
 - Overall recommendations tracking – multi-agency implementation status
- CSDP: Expand & enhance tool capabilities
- Coastal Risk Publications
- CSPI: Maintain, update, and enhance database



**COASTAL
STORM
DAMAGES
PREVENTED**

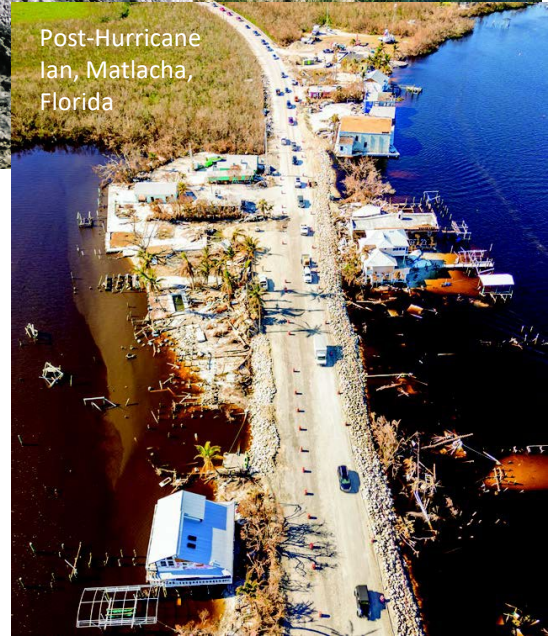
Discussion



Black Rock Beach, Jacksonville, Florida



Lake Huron Shoreline



Post-Hurricane Ian, Matlacha, Florida



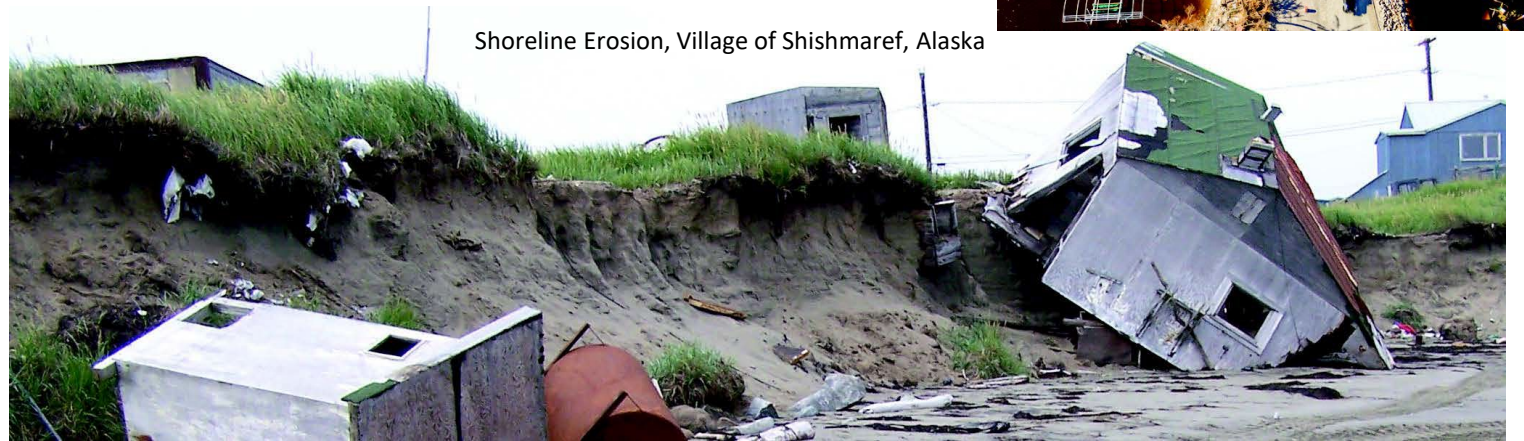
Waikiki Beach, Honolulu, Hawaii



Long Beach Island CSRM Project, New Jersey



Elwha River Delta Before & After Dam Removals, Washington



Shoreline Erosion, Village of Shishmaref, Alaska

NATIONAL SHORELINE MANAGEMENT STUDY RECOMMENDATIONS AND POTENTIAL ACTIONS

Establish A National Shoreline Management Program

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Promote proactive planning for current and future changes in coastal systems at the regional and subregional scale.

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NATIONAL SHORELINE MANAGEMENT STUDY RECOMMENDATIONS AND POTENTIAL ACTIONS

Projecting Future Shoreline Change

Develop integrated projections of potential future physical, chemical, ecological, and socioeconomic coastal conditions, and their cumulative effects.

Potential Actions

- Coordinate across governmental, research organizations, and Indigenous Peoples with Indigenous Traditional Ecological Knowledge to advance an Integrated Predictive Modeling Framework.
- Develop approaches to assess and regularly communicate expected changes in coastal risk.
- Review and refine tools for identifying equitable, financially viable, and environmentally sustainable solutions.

Invest for the Future of Coastal Communities

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- Work across federal and state agencies and with Tribal Nations to establish common guidelines for tracking shoreline change data.

