



# An Appraisal of U.S. Coastal Hazards and Diversity, Equity, and Inclusion in State and Territory Coastal Management Programs

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## Background:

The Coastal Zone Management Act (1972) Section 309 established the Coastal Zone Enhancement Program which provides funds to coastal states and territories to make improvements in their coastal management programs (CMPs). Currently, 34 states and territories have participating programs. CMPs must complete Assessment and Strategy Reports in five-year cycles. Assessments are conducted for nine designated enhancement areas:

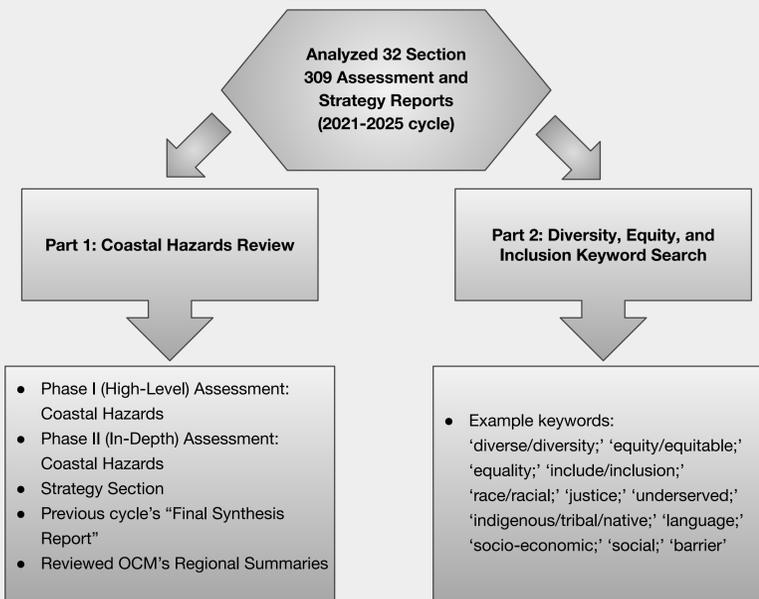
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|---------------------------|------------------------------------|-------------------------------------|
| 1) Public Access          | 5) Marine Debris                   | 8) Cumulative and Secondary Impacts |
| 2) Wetlands               | 6) Aquaculture                     | 9) Special Area Management Plans    |
| 3) Coastal Hazards        | 7) Ocean and Great Lakes Resources |                                     |
| 4) Energy Facility Siting |                                    |                                     |

This project was conducted with the intention to support NOAA Mission Statement #3: To conserve and manage coastal and marine ecosystems and resources.

## Objectives:

- ★ Obtain a national snapshot of all coastal hazards, top coastal hazards, emerging issues, management approaches, significant changes, and priority needs as identified by Coastal Management Programs for the 2021-2025 cycle.
- ★ Analyze if and how Coastal Management Programs address diversity, equity, and inclusion through their 2021-2025 Coastal Zone Management Act Section 309 Assessment and Strategy Reports.

## Methods:



Note: Part 1 and Part 2 do not include the U.S. Virgin Islands, Puerto Rico, and Minnesota because their reports were not submitted at time of analysis.

## Results:

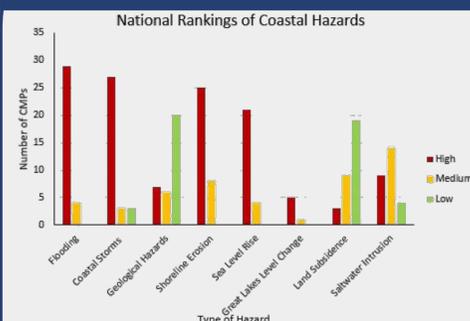


Figure 1: National rankings of coastal hazards by state and territory CMPs for the 2021-2025 cycle.

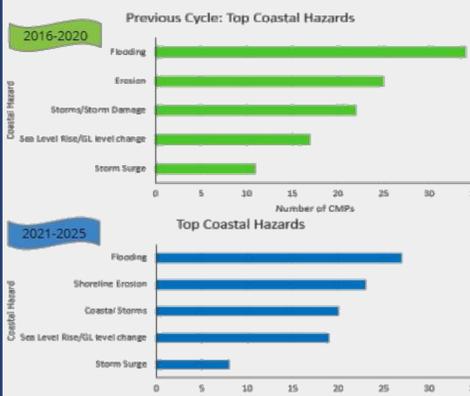


Figure 2: Comparison of the top five coastal hazards for the 2016-2020 cycle from the previous Final Synthesis Report and the current 2021-2025 cycle.

## Issues and Needs within Coastal Hazards

- The compilation of hazards rankings show that flooding and coastal storms pose the highest general risk for the most amount of programs (Figure 1). Regional rankings were also compiled and revealed other trends.
- Both cycles (2016-2020 and 2021-2025) identified the same order of the top five top coastal hazards (Figure 2). It is interesting to note that each hazard decreased in number of CMPs reporting the hazard except for sea level rise.
- There were a total of 84 emerging issues identified by all CMPs. The most common issues were erosion and shoreline protection; flooding, especially cumulative flooding impacts; infrastructure; and the economics of adaptation and resilience.
- Most common management approaches used by CMPs are hazards education and outreach; general hazards mapping or modeling; and hazard mitigation plans.
- The top priority need was tied between Mapping/GIS/Modeling for current and future flood maps and Communication/Outreach about impacts of coastal hazards and improved risk communication for all.

## Examples of Diversity, Equity, and Inclusion (DEI) within Coastal Hazards

- **NJ** - Project of Special Merit: A Seat at the Table (Established)
- **ME** - CoastWise Tidal Crossing Design (Established)
- **MD** - Enhancing Resilience to Coastal Hazards and Climate Change Strategy (Future Plan)
- **CA** - Building Resilient and Sustainable Communities through Planning and Permitting Strategy (Future Plan)
- **WA** - Address equity in coastal resilience through Shoreline Master Program enhancements (Future Plan)
- **MS** - Risk communication materials that are translated into appropriate languages (Need Identified)
- **TX** - Analyze resilience: social, economic, ecological and infrastructure; community barriers, i.e. colonias (Need Identified)

## Categorizations of DEI Considerations

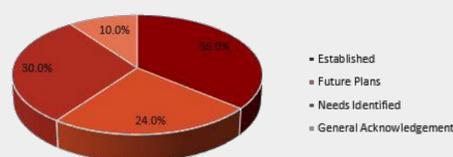


Figure 3: Categorization of DEI keyword search results. Total of 50 considerations across 26 CMPs were found and six programs did not list any considerations.

## DEI by Enhancement Area

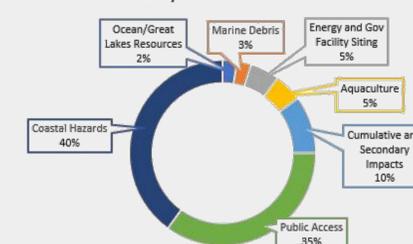


Figure 4: Percentage of DEI considerations that fell into each Section 309 Enhancement Area.

## Recommendations and Conclusion:

- ➔ Weighted system of ranking hazards nationally by amount of coastline.
- ➔ Fire is a growing concern that could be added to the hazards list.
- ➔ Revisit past program changes to help better measure program accomplishments.
- ➔ Use plus and minus to denote whether a significant change was positive or negative.
- ➔ Watch out for upcoming Projects of Special Merit with emphasis on DEI.

In conclusion, this project met both objectives and found that the hazards of highest concern nationally are flooding, shoreline erosion, coastal storms and storm surge, and sea level rise. There are many emerging issues facing our coastlines and coastal communities, especially shoreline erosion. CMPs have reported many significant changes, use many management approaches, and are currently working on new program changes, but they have needs that require attention in order to better protect and preserve our coastal communities. These needs include mapping/GIS/modeling and communication/outreach. Through Section 309 strategies, CMPs have been and continue to work toward advancing DEI, especially in coastal hazards where a 40% overlap was found in the 2021-2025 cycle.

Coastal hazards are a worthwhile national priority because every program ranked coastal hazards as a high priority. This project compiled the coastal hazards information from states and territories so that national trends could be identified. Identifying overarching patterns and needs helps better focus the resources and support from the national office to better support state and territories better manage their coastal resources and protect their coastal communities.

## Acknowledgements:

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## References:

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