





Critical Needs: Ocean & Coasts

[Back to Geoscience for America's Critical Needs: Invitation to a National Policy Dialogue](#)



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Expanding Opportunities and Mitigating Threats

The United States depends on the ocean and the Great Lakes for food, national security, energy resources, transportation, recreation, and myriad other critical needs. More than half of the United States population lives in coastal watershed counties that generate 58 percent of the nation's gross domestic product.¹ The United States has jurisdiction over 3.4 million square miles of ocean, more than the land area of all 50 states combined. This vast marine area offers environmental resources and economic opportunities. However, coastal communities are also threatened by tsunamis, hurricanes, industrial accidents, and water-borne pathogens. A better understanding of our ocean and coastal areas will strengthen our economy and protect our people.

Geoscientists provide information about how our planet's coasts, ocean, and seafloor operate now and how they have functioned in the past. They conduct research on marine energy and mineral resources, natural hazards, rising seas, and ocean acidification.

To ensure the long-term sustainable use of our ocean and coastal resources:

Support basic and applied research on ocean and coastal issues. Better knowledge of the ocean and its role in global processes now and in the past allows scientists to forecast for the future. An improved understanding of ocean and coastal processes will reduce damage and promote responsible growth of coastal communities.

Enhance ocean observations. The ocean drives global water and weather systems by absorbing, holding, and moving vast amounts of the Earth's heat, water, and CO₂. A resilient nation needs sustained ocean observations from space, from the ocean surface, and at depth.

Monitor, research, and respond to sea-level rise. Sea level is rising at an increasing rate, changing coastal ecosystems and making vital coastal communities vulnerable to erosion and flooding associated with storm surges and high tides.


Assess marine energy and mineral resources, and their environmental context. The ocean not only hosts energy and mineral resources but also is a source of energy itself. Most of the marine world remains unexplored, making informed policy a challenge.

References

¹National Coastal Population Report: Population Trends from 1970 to 2020. National Oceanic and Atmospheric Administration. <https://aamboceanservice.blob.core.windows.net/oceanservice-prod/facts/coastal-population-report.pdf>

Learn more

- Geoscience for America's Critical Needs: Invitation to a National Policy Dialogue (Webpage and Report), *American Geosciences Institute*

This document outlines high-level actions to address major policy issues where the geosciences play a significant role. 

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