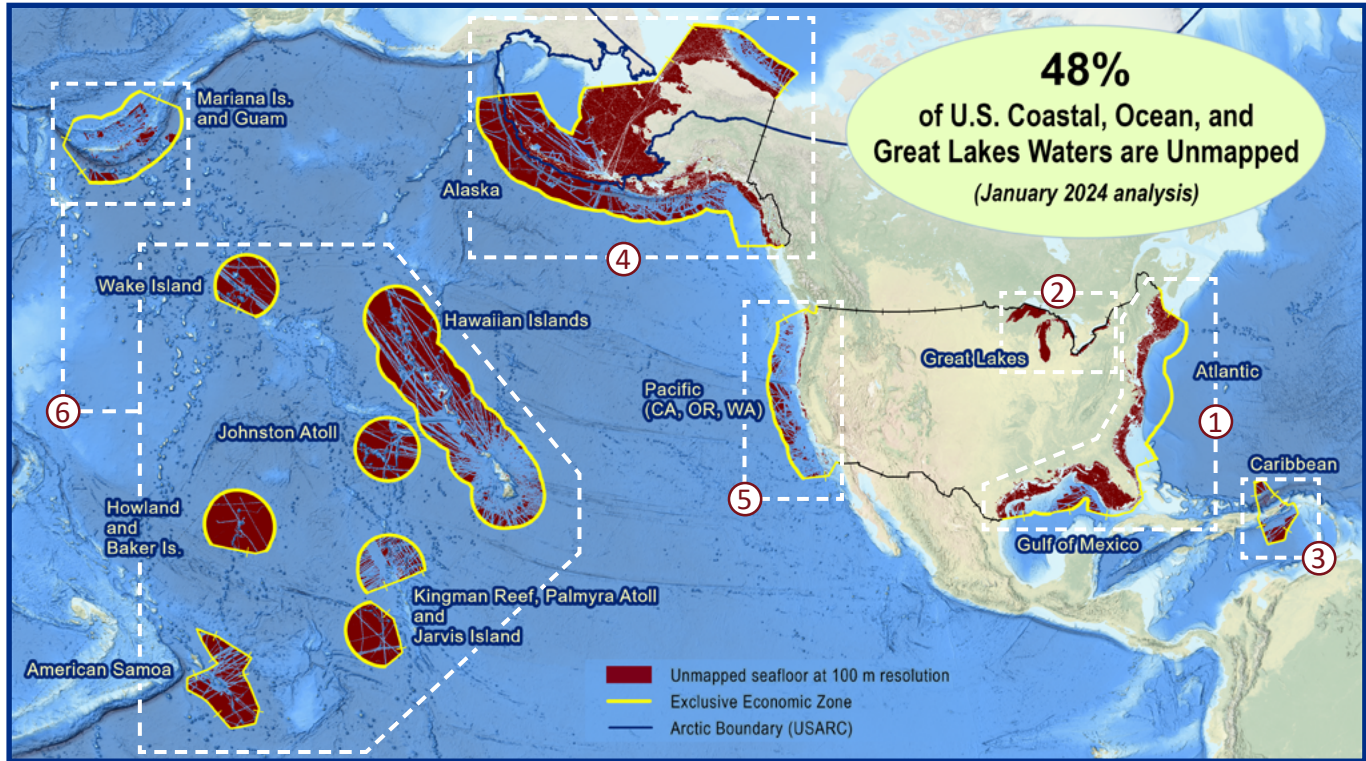
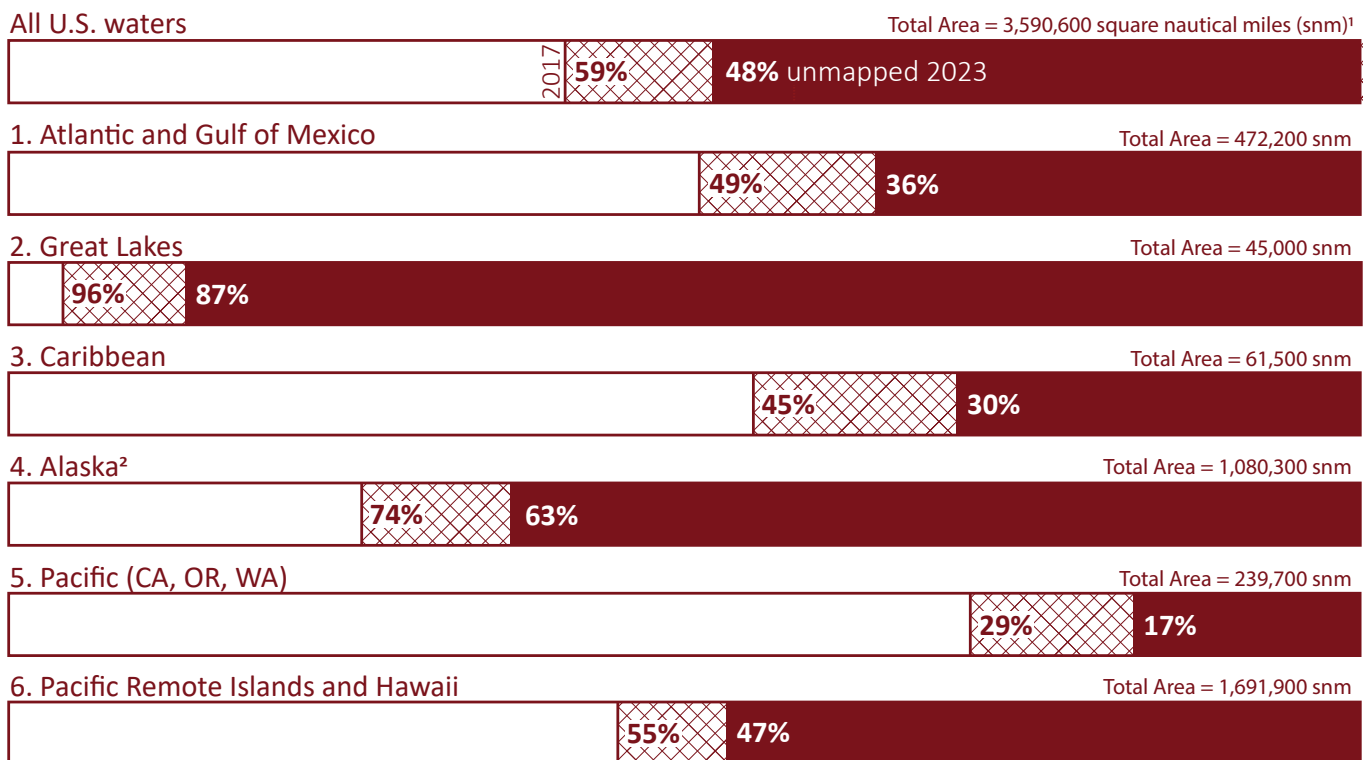


# PROGRESS REPORT: Unmapped U.S. Waters

Knowledge of the depth, shape, and composition of the seafloor has far-reaching benefits, including safer navigation, hazard mitigation for coastal resilience, preservation of marine habitats and heritage, and a deeper understanding of natural resources for sustainable ocean economies. The 2020 [National Strategy for Ocean Mapping, Exploring, and Characterizing the United States Exclusive Economic Zone](#) and the global [Nippon Foundation-GEBCO Seabed 2030 Project](#) make comprehensive ocean mapping a priority for the coming decade. Derived from the [U.S. Bathymetry Gap Analysis](#) first conducted in October 2017, this fifth annual report tracks our progress toward mapping the U.S. Exclusive Economic Zone.



## Percent of U.S. unmapped seafloor at 100-meter resolution in 2023



<sup>1</sup> Total does not include the U.S. Extended Continental Shelf declared in [88 FR 88470](#).

<sup>2</sup> The Arctic portion of U.S. waters in the Alaska region is 583,800 snm and 73% unmapped at the end of 2023.

# Mapping the Seafloor

primary sources of bathymetry

## Multibeam and LIDAR surveys

by trained hydrographers and other personnel from government, academia, and private sector



### Coastal water

Representing ~0-40 meters water depth, mapping in this area may be ideal for aircraft using LIDAR technology, small boats, and autonomous systems using multibeam sonar technology. Concerns about safe navigation require a high level of data accuracy.

 uncrewed

### Shallow water

Representing ~40-200 meters water depth, mapping this area is ideal for ships using multibeam sonar technology alongside autonomous systems as a force multiplier. Conditions are not usually suitable for aerial survey methods. Concerns about safe navigation require a high level of data accuracy.

### Deep water

Representing water depths >200 meters, mapping this area is ideal for ships and uncrewed systems using multibeam sonar technology. Conditions are not suitable for aerial survey methods. Navigation safety is not a primary concern in this area.

other sources

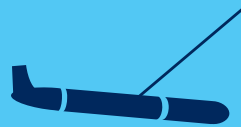
### Uncrewed aerial vehicles



### Satellite-derived bathymetry



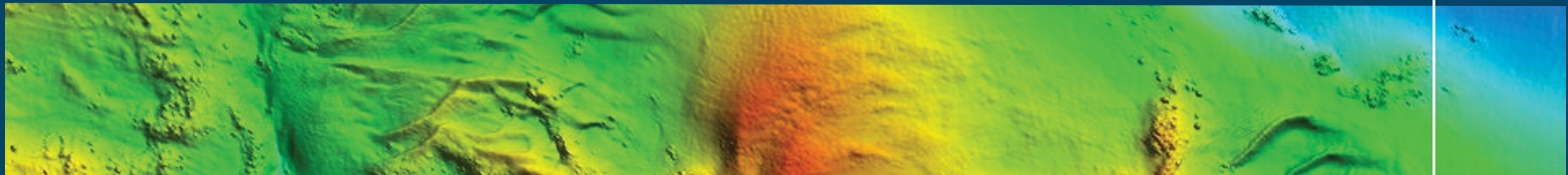
### Sidescan sonar



### Single beam bathymetry



### Crowdsourced bathymetry



## Strategies for Filling Gaps

Bathymetric data obtained from governments, industry, research institutions, and citizen scientists are archived at NOAA and then used for many applications by those same institutions and much more.

Partnerships, data sharing, and innovations in both data acquisition and processing continue to be critical elements for accomplishing U.S. seafloor mapping goals. Also, the coordination of new data collections promotes the integrated ocean and coastal mapping goal to “map once, use many times.”

Current progress is a reflection of two primary ways to contribute:

- (1) [participate in U.S. mapping coordination activities](#), and
- (2) [share your data](#).

Want more details and to run statistics for a different U.S. area of interest? Visit <https://gis.charttools.noaa.gov/bathy-coverage-report/>.

Crowdsourced bathymetry is the collection and sharing of depth measurements from vessels with standard navigation instruments during routine maritime operations. It can be a powerful source of seafloor information in areas where more comprehensive surveys are not likely to occur in the near future. For more information, visit <https://www.ngdc.noaa.gov/iho/#csb>.

Track our progress

<https://iocm.noaa.gov/seabed-2030-status.html>

