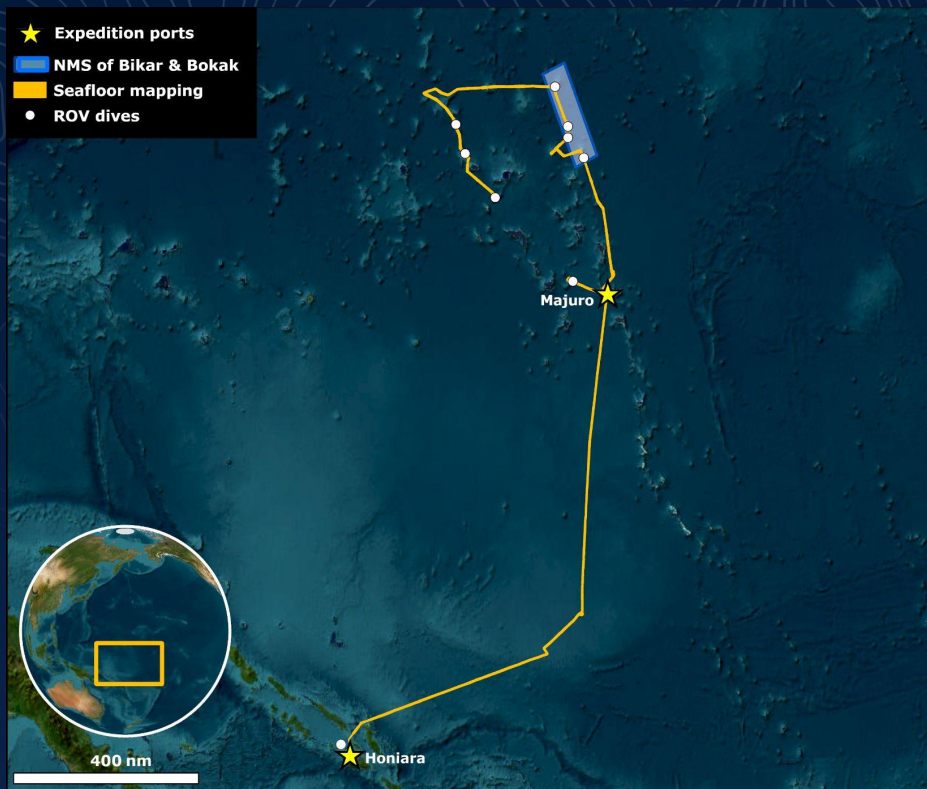


# EXPLORATION OF DEEP-SEA HABITATS IN THE MARSHALL ISLANDS (NA174)

July 27 - August 17, 2025

-  **21** days at sea
-  **31,421** km<sup>2</sup> of seafloor mapped
-  **10** successful ROV dives
-  **106** hours of ROV exploration
-  **269** samples collected
-  **36** live ship-to-shore interactions
-  **1,050** ship-to-shore participants
-  **119,300** live stream views
-  **102,209** highlight video views
-  **11.36 million** social media impressions



## OVERVIEW

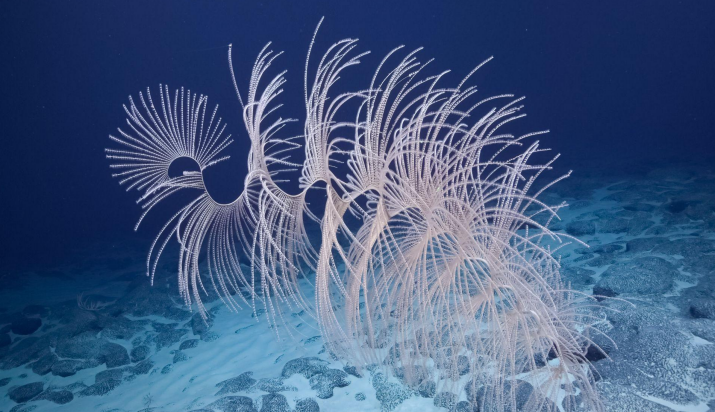
Between July 27 - August 17, the Ocean Exploration Trust and partners conducted a telepresence-enabled expedition focused on exploring deep-sea habitats around the Marshall Islands. This 21-day expedition utilized E/V *Nautilus'* [remotely operated vehicle \(ROV\)](#), [mapping](#), and [telepresence systems](#) to survey deep-sea habitats around the Marshall Islands, as well as during the transit route between the Solomon Islands and the Marshall Islands. Throughout the planning and execution of the mission, the team [worked closely with stakeholders in the Marshall Islands](#) to ensure that expedition activities addressed local management, science, and education needs. Three Marshall Island-based scientists sailed on the expedition to facilitate this process, with many more participating from shore.

## MAPPING SUMMARY

Seafloor mapping focused on filling data gaps, including over ROV dive sites without previous mapping data, and during transits between ROV surveys. A total area of 31,421 km<sup>2</sup> was mapped over the course of the expedition, including 4,377 km<sup>2</sup> in the Solomon Islands Exclusive Economic Zone, 19,130 km<sup>2</sup> in the Marshall Islands Exclusive Economic Zone, and 3,560 km<sup>2</sup> inside the recently designated National Marine Sanctuary of Bikar and Bokak. A total of 15 seamounts were mapped over the course of the expedition, three of which located in international waters of the Ontong Java Plateau, and the remainder in the Marshall Islands. Information from these mapping surveys was critical to plan ROV surveys on some of these previously unsurveyed features.







## ROV SUMMARY

The expedition completed 10 successful ROV dives for a total dive time of 106 hours and 74 hours of seafloor exploration. This included a short test dive off Honiara, and nine operational dives that surveyed deep-sea habitats in the Marshall Islands at depths between 953-3,326 meters. ROV dives focused on exploring deep-sea environments with high conservation value, focusing on offshore seamounts and slope habitats. Noteworthy ROV observations included thriving deep-sea coral and sponge communities of high density and high diversity on two seamounts in the National Marine Sanctuary of Bikar and Bokak, discovery of at least two new species of octocorals, several new invertebrate records for the Marshall Islands, and documentation of extensive coral gardens on high vertical relief.

In addition to its standard sensors, an autonomous eDNA sampler was integrated onto ROV *Hercules*, which was used to filter over 20,000 liters of seawater at depth and collect 161 environmental DNA samples. An additional 77 biological and 30 rock samples, were collected during ROV dives to support studies on the biodiversity, octocoral reproductive biology, biogeography, and geological context of the region. Moreover, 10 quantitative ROV video transects were conducted at four different seamounts, covering a depth range of 1,400-2,450 meters to characterize distribution and diversity patterns.

## ACKNOWLEDGEMENTS

Special thanks to the captain and crew of E/V *Nautilus*, the Nautilus Corps of Exploration, the Ocean Exploration Trust, and all who supported the expedition from shore. The expedition was funded by NOAA Ocean Exploration via the Ocean Exploration Cooperative Institute, and executed under consent from the Marshall Islands Marine Resources Authority, the Marshall Islands Environmental Protection Agency, the Ministry of Fisheries and Marine Resources Development of Kiribati, and the Solomon Islands Ministry of Education and Human Resources Development.

## EDUCATION & OUTREACH

Over the course of the expedition, live-stream video feeds received 119,300 views and highlight videos garnered another 102,209 views. Expedition content on OET's social media channels attracted over 11.36 million impressions. While at sea, the team created 16 new education and outreach products and hosted 36 live ship-to-shore interactions with schools, community events, and professional meetings, reaching over 1,050 people across the Marshall Islands, 13 US States, and two other countries. Early expedition results were featured in 16 media stories.



## DATA ACCESS

Data collected during the expedition will be sent to repositories for archiving and public distribution, links to which are provided below. These datasets are also available from OET upon request.

ARCHIVE	DATA TYPES
<a href="#">NautilusLive.org</a>	Background information, highlight imagery and informational materials
<a href="#">Rolling Deck to Repository</a>	Ship navigation, weather, and mapping data
<a href="#">Marine Geoscience Data System</a>	Mapping and ROV data
<a href="#">YouTube</a>	Full ROV videos
<a href="#">Marine Geological Samples Laboratory at the University of Rhode Island</a>	Geological samples
<a href="#">Harvard University's Museum of Comparative Zoology</a>	Biological samples
<a href="#">National Center for Biotechnology Information Sequence Read Archive</a>	eDNA genetic sequence information

