HAWAIʻI - AMERICAN SAMOA MAPPING (NA163)

July 22-August 6, 2024

Geographic Focus: Transit route between Hawaiʻi and American Samoa

Main Operations: Seafloor mapping using ship sonars

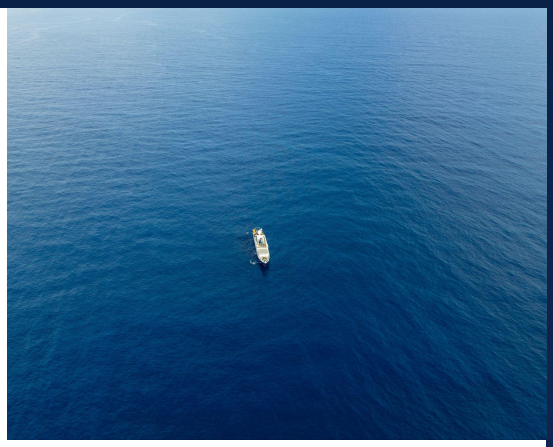
Sponsor: NOAA Ocean Exploration via the Ocean Exploration Cooperative Institute

Expedition Webpage: www.NautilusLive.org/cruise/NA163

- **10** days at sea
- **18,681** km² of seafloor mapped
- **6** hours of ROV exploration
- **1** acoustic receiver deployed
- **4** educators sailed on expedition
- **36** live ship-to-shore interactions
- **820** ship-to-shore participants
- **55,977** live stream views
- **1,185,646** social media views

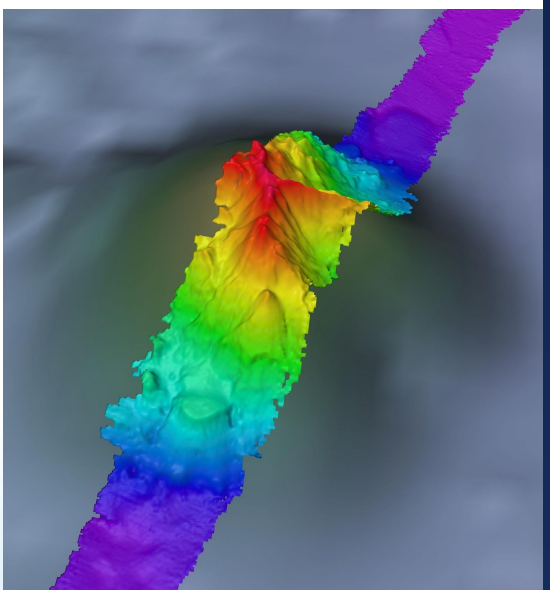
OVERVIEW

Between July 22-August 6, 2024, E/V *Nautilus* conducted a telepresence-enabled expedition to explore deep-sea habitats in the Pacific Islands Region. While the original goal was to conduct ROV and mapping operations in the US Exclusive Economic Zone around Jarvis Island, the expedition start had to be delayed due to unforeseen ship repairs. As a result, the expedition shifted its primary focus to transit mapping operations between Honolulu and Pago Pago. In addition to operational personnel, the expedition included the at-sea participation of four professional educators, who supported various outreach efforts with communities throughout the Pacific Islands Region.



MAPPING SUMMARY

Seafloor mapping operations focused on filling data gaps during the transit between Honolulu to Pago Pago. Over 18,680 square kilometers of seafloor were mapped during the expedition, including 6,555 square kilometers in the US Exclusive Economic Zone around Hawaiʻi, Palmyra Atoll and American Samoa, as well as 4,011 square kilometers inside the Pacific Remote Islands Marine National Monument. Seafloor mapping operations covered previously unsurveyed areas, thus contributing directly to priorities of the US National Strategy for Ocean Mapping, Exploration and Characterization, Seabed 2030, and decision making relating to the the proposed designation of the Pacific Remote Islands National Marine Sanctuary.



NOAA OCEAN EXPLORATION

OCEAN EXPLORATION COOPERATIVE INSTITUTE oeci EXPLORING THE NATION'S BLUE FRONTIER

NAUTILUS LIVE OCEAN EXPLORATION TRUST

OTHER OPERATIONS

The expedition completed one successful ROV dive to survey the Makapuʻu precious coral bed located east of Oʻahu. During approximately 5 hours of bottom time at depths between 450-500 meters, the ROVs surveyed a linear distance of 1.7 kilometers in an area that had not been explored previously, thereby providing important new information to help delineate the boundaries of the precious coral bed. The survey documented areas with a high diversity and density of deep-sea corals and sponges, as well as swordfish, octopuses, and the Hawaiian spurdog shark.

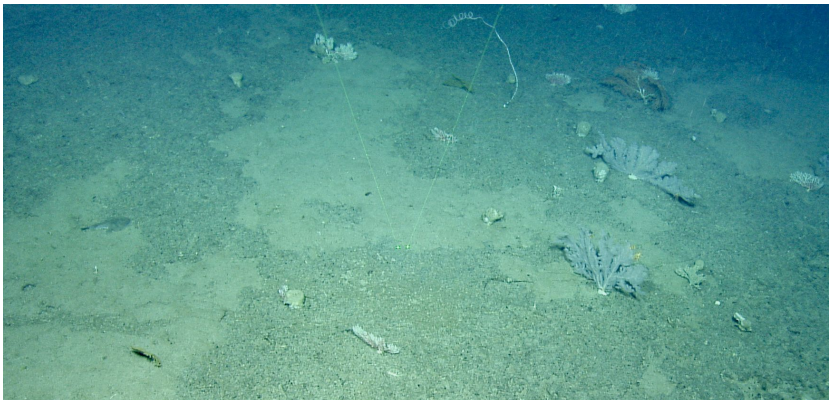
On the last day of the expedition an acoustic mooring was deployed east of Tutuila to support cetacean monitoring efforts. Despite being recognized as an important birthing area for humpback whales, there have been very few whale surveys in American Samoa. The deployed receiver will collect continuous acoustic data that will provide important new insights into the life history of marine mammals and other marine animals in American Samoa.

ACKNOWLEDGEMENTS

Thanks to the captain and crew of E/V *Nautilus*, the *Nautilus* Corps of Exploration, the Ocean Exploration Trust, and all that supported the expedition from shore. The expedition was funded by NOAA Ocean Exploration via the Ocean Exploration Cooperative Institute, and executed under permit 12543-24005 authorized by the US Fish and Wildlife, and permit 2024-003 authorized by the Department of Marine and Wildlife Resources of American Samoa.

EDUCATION & OUTREACH

Over the course of the expedition, live-stream video feeds received close to 56,000 views. Expedition content on OET's TikTok channel gained over 920,000 views, plus posts on Instagram, X, Facebook, and LinkedIn attracted over 265,000 impressions. While at sea, the team hosted 36 live ship-to-shore interactions with schools, community events, and professional meetings, reaching over 800 people across the US, American Samoa, Australia, Canada, India, Japan, Palau, Poland, and Ukraine. Four professional educators sailed on the expedition, who worked closely alongside mission personnel in telling stories from the expedition to audiences of all ages, particularly those from the Pacific Islands Region.



DATA ACCESS

Data collected during the expedition has been sent to repositories for archiving and public distribution. Links to these data repositories are provided below. These data sets are also available from OET upon request.

ARCHIVE	DATA TYPES
NautilusLive.org	Background information, highlight imagery and informational materials
Rolling Deck to Repository	Navigation, weather and mapping data
Marine Geoscience Data System	Mapping and ROV data
YouTube	Full ROV videos

BROADER IMPACTS

Expedition activities advanced NOAA priorities, particularly in terms of understanding ocean changes, sharing that knowledge with others, and conserving marine ecosystems. Mapping operations were conducted in unexplored areas, thus contributing to the US National Strategy for Ocean Mapping, Exploration, and Characterization, Seabed 2030, and the UN Decade of Ocean Science for Sustainable Development. Mapping data collected inside the Pacific Remote Islands Marine National Monument will support decision making relating to the proposed designation of the area as a National Marine Sanctuary.

The ROV survey explored previously unsurveyed areas of the Makapuʻu precious coral bed, thereby supporting science priorities of the NOAA Pacific Fisheries Science Center relating to informing essential fish habitat designations and other management decisions. The deployed acoustic receiver will collect important new information on the habitat use of marine animals around American Samoa. The expedition also advanced priorities on education, diversity, and inclusion by providing opportunities for underrepresented minority groups to participate in the expedition.