

2016 Hohonu Moana: Exploring Deep Waters off Hawai'i



NOAA Ship *Okeanos Explorer*, operated through a partnership between the NOAA Office of Ocean Exploration and Research and the Office of Marine and Aviation Operations, is the nation's only government vessel dedicated to ocean exploration. *Okeanos Explorer* systematically explores the ocean every day while at sea to maximize public benefit from the ship's unique capabilities, which include a state-of-the-art, 6,000-meter-capable, dual-body remotely operated vehicle (ROV) and four different types of mapping sonars that collect high-resolution data about the seafloor and the water column. *Okeanos Explorer* takes every opportunity to survey, identify new habitats, species, and resources, and contribute critical information to enhance our understanding of the ocean.

From February 25 to March 18, 2016, NOAA Ship *Okeanos Explorer* will explore largely uncharted deep-sea ecosystems and seafloor in and around the Papahānaumokuākea Marine National Monument (PMNM). During the **Hohonu Moana 2016: Exploring Deep Waters off Hawai'i** expedition, our at-sea and shore-based science teams will work together to make some of the first deepwater scientific observations in this area. The expedition will commence in Pearl Harbor on the Hawaiian Island of O'ahu and conclude at Kwajalein Atoll in the Marshall Islands.



Operations

Priority operating areas and science themes for this 24-day expedition were developed with input from scientists and managers across the broad ocean science community. Themes and objectives for this expedition include:

- Acquire data to support priority monument and sanctuary science and management needs.
- Discover and characterize vulnerable marine habitats, particularly high-density deep-sea coral and sponge communities, and cultural heritage sites.
- Collect data and geologic samples to characterize seamounts within the Prime Crust Zone.
- Collect information on the geologic history of central Pacific seamounts, including those that are or may be relevant to our understanding of plate tectonics and spreading centers.
- Collect high-resolution mapping data in priority areas.
- Provide a foundation of publicly accessible data and information products to spur further exploration, research, and management activities.

The expedition will include 24-hour operations consisting of ROV dives and mapping operations. Daytime ROV operations will focus on depths between 250 and 6,000 meters and will include high-resolution visual surveys and limited geological sample collection. Mapping operations will be conducted overnight and when the ROV is on deck.

Papahānaumokuākea Marine National Monument



The Papahānaumokuākea Marine National Monument is one of the largest fully-protected conservation areas under the U.S. flag, and one of the largest marine conservation areas in the world. It encompasses 139,797 square miles of the Pacific Ocean (362,073 square kilometers) – an area larger than all the country's national parks combined.

The Monument is home to more than 7,000 species, a myriad of geological features, significant cultural features, and a variety of post-Western-contact historic resources, including aircraft and vessels from World War II. More than 98 percent of the Monument's seafloor lies below 100 meters and its deepwater resources are far less known than its shallow-water counterparts. These deep areas likely include many secrets yet to be discovered by *Okeanos Explorer*.

Why it Matters

Despite the role that the ocean plays in supporting our well-being, 95 percent of the ocean remains unexplored. Increasing baseline knowledge of ocean habitats is critical to the conservation and management of these remarkable ecosystems. The results of exploration are critical for ocean resource management and to help citizens, businesses and governments make informed decisions to protect lives, property, and economic well-being. This expedition will provide a foundation of baseline information to support science and management needs in and around this central Pacific marine national monument.



Follow Along Live!

Anyone with an internet connection can follow along with the expedition as high-definition video is streamed live to shore from ROV *Deep Discoverer*. The same technology that allows scientists around the world to participate in the expedition from shore also enables interested members of the public to experience deep-sea exploration, the wonder of discovery, and the fascination of science in real time. Additionally, mission logs, daily updates, educational materials, and multimedia elements will be added to the Ocean Explorer website throughout the expedition.

Follow along:

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