OCEAN EXPLORATION COOPERATIVE INSTITUTE | EXPLORING THE NATION'S BLUE FRONTIER
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Hello Ocean Explorers!

As spring approaches, the OECI is very busy making preparations for the near and far future. Next week, at URI's Graduate School of Oceanography in Narragansett, RI, the OECI will host members of Science and Administrative Review Panels who will evaluate the CI and make recommendations for its renewal. We are in our fourth year of the initial five-year award and we couldn't be more pleased with our progress and successes in support of NOAA Ocean Exploration and broader NOAA initiatives. All of the OECI is excited to share our results with the review panels and have productive discussions about how the OECI can continue to contribute to NOAA's mission.

At the same time, we are preparing for another exciting season of ocean exploration activities on the water. The 2023 season kicked off with an Expedition Season Forum held this week by the Ocean Exploration Trust (OET) that brought together science and expedition leads with this year's OET science communication cohort for discussions and training. This type of pre-cruise effort is critical to make sure that students and scientists ashore and the general public can productively participate in ocean exploration via telepresence and that everyone on board *E/V Nautilus* has an understanding and appreciation of the scientific and cultural significance of ocean exploration.

As is always the case, the OECI will also be piloting new technologies to advance ocean exploration and preparations are underway to ensure their success. This year these efforts include a refresh of OETs ROV *Hercules* that will be getting a new frame and syntactic foam, along with other upgrades to maintain its exemplary record of reliability; integration of a new sonar and gondola with the University of New Hampshire's uncrewed surface vehicle, *DriX*, that will enable seafloor mapping in deeper waters and further enhance OECIs multi-vehicle operations; and testing and integration of the InVADER Raman spectrometer developed by commercial partner, Impossible Sensing, to collect in situ chemical measurements of seafloor materials to mitigate the need to disrupt the benthos to obtain meaningful exploration data. This is only a sampling of the new approaches and technologies that the OECI is advancing for ocean exploration, as well as for ocean science, management, and restoration with federal partners such as BOEM, NOAA National Marine Sanctuaries, and NOAAs National Resource Damage Assessment and Restoration in the Gulf of Mexico.

Best,
Adam

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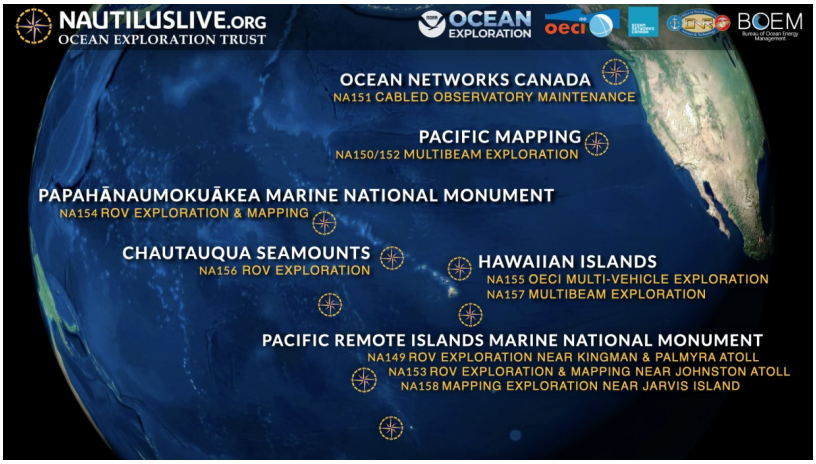
2023 OECI- EV Nautilus Expedition Season Overview



In 2023, *E/V Nautilus* will spend eight months exploring the Central and Eastern Pacific, mapping unsurveyed seafloor and characterizing deep-sea habitats through detailed ROV observation, as well as integrating emerging technologies. In addition to the OECI-funded expeditions, *E/V Nautilus* will also conduct expeditions in 2023 funded by the Office of Naval Research, Ocean Networks Canada, and the Bureau of Ocean Energy Management.

The first live expedition of the *E/V Nautilus* 2023 season brings the ship back to the region of Kingman Reef and Palmyra Atoll as part of the ongoing effort to explore the deep ocean in and around the Pacific Remote Islands Marine National Monument (PRIMNM) through the OECI. This 29-day telepresence-enabled expedition (May 16 – June 14, 2023) will start and end in Honolulu, and utilize the deep-water mapping and ROV capabilities of *E/V Nautilus* to explore the deep-sea geology and biology in US waters.

From July 19-28, 2023, the OECI will support a a seafloor mapping transit to bring the *E/V Nautilus* from British Columbia, Canada, back to the Central Pacific where the ship will operate for the remainder of the 2023 field season. This 12-day transit route will fill gaps in seabed mapping within and beyond the U.S. EEZ and thereby support priorities of Seabed 2030 and the US National Strategy for Mapping, Exploration, and Characterization. Additional OECI-supported mapping legs will take place in Hawaiian waters and off Jarvis Island in November and December 2023.

In August 2023, the *E/V Nautilus* will conduct 27 days of exploration within the Johnston Atoll Unit of the Pacific Remote Islands Marine National Monument (PRIMNM). Complimenting exploration achievements from last season, the ship will now explore a region of ancient seamounts northwest of Johnston Atoll utilizing ROV dives and mapping surveys. This year, USV *DriX,* from OECI partner, the University of New Hampshire, will also be deployed to advance multi-vehicle explorations, acquire high-resolution bathymetric maps, and gain coverage of this previously poorly explored ocean region.

Additional OECI-supported exploration and mapping activities are planned in the Papahānaumokuākea Marine National Monument (PMNM) in September 2023. A 27-day expedition will start and end in Honolulu and utilize the ROV and mapping capabilities of *E/V Nautilus* to survey previously unexplored deep-sea habitats of PMNM, focusing on areas towards the northwestern extent of the Monument. This area includes numerous previously unexplored seamounts of biological and geological significance, as well as several underwater cultural heritage sites associated with the Battle of Midway.

Lastly, the OECI is again planning a telepresence-enabled, multi-vehicle expedition aboard *E/V Nautilus.* Over the last three years, OET has been working with its OECI partners to integrate emerging exploration technologies to enhance ocean exploration. In September 2023, the OECI Multi-vehicle Exploration expedition will host the University of New Hampshire's autonomous surface vehicle, *DriX*, the University of Rhode Island's Deep Autonomous Profiler (DAP), and Woods Hole Oceanographic Institution's autonomus underwater vehicle, *Mesobot*. Each of these tools, and their coordinating teams, offer complementary capabilities to explore the ocean from the seafloor through the entire water column. The expedition will start and end in Honolulu and explore the seafloor and overlaying water column around the Geologists Seamounts located south of the Main Hawaiian Islands.

For more details on the full 2023 EV Nautilus season, please visit: https://nautiluslive.org/expeditions/2023.

Also, be sure to check out 2022 accomplishments, as detailed in The New Frontiers in Ocean Exploration: The Ocean Exploration Trust 2022 Field Season report, the thirteenth consecutive supplement on ocean exploration to accompany *Oceanography* magazine.

Announcements, Events, and Opportunities

Call for Abstracts: Oceans '23, Biloxi

Have you conducted innovative research that you would like to present to a broader audience? OCEANS 2023 Gulf Coast is now accepting abstracts for engaging and cutting-edge technical papers. Once the submission window closes, the top abstracts will be selected, and those authors will be invited to submit a full paper. The final technical papers will be featured in the OCEANS prestigious technical program and published in IEEE Xplore.

For full abstract requirements, as well as a link to the abstract submission portal, please visit the Oceans '23 website. Please note, OCEANS 2023 Gulf Coast will be an in-person conference. The abstract submission deadline is April 17, 2023.

Job Announcement: Physical Scientist, ZP-1301-3, position to serve as an Expedition Coordinator within E&E

This position is located in the NOAA Office of Oceanic and Atmospheric Research (OAR), The Office of Ocean Exploration and Research (OER), with 1 vacancy in Silver Spring, MD or Durham, NH. Position duties include:

- Oversight of the expedition planning lifecycle from initial conception to completion. Plan and lead sea-going missions utilizing telepresence, ocean mapping sonars, remotely operated vehicles (ROV), human occupied vehicles (HOV), autonomous technologies, and/or novel technologies including logistical planning and conducting operational evaluations of new technologies and concepts of operation..
- Provide project management support for ocean exploration projects and expeditions. Execute project management principles, techniques, and tools to manage and track projects to meet requirements.
- Assess and develop resolutions for ocean mapping and exploration challenges. Stay informed on regulations and guidelines as well as new program requirements and ocean resource management decisions.

For the full job announcement and application requirements:
https://www.usajobs.gov/job/714098900

Interactive Map: NOAA Ocean Exploration 2023 Expeditions

NOAA Ocean Exploration works with partners to explore previously unknown areas of the ocean, making discoveries of scientific, economic, and cultural value and supporting innovations in exploration tools and capabilities. In 2023, projects will span the globe, from exploring hydrothermal vents along the Mid-Atlantic Ridge to diving deep in the waters off Alaska, using new technologies to hunt for methane seeps off the U.S. West Coast, and searching for World War II cultural resources in the Gulf of Mexico and Pacific. Use this interactive map to learn more about what NOAA Ocean Exploration has planned for this year and check back often as summaries are added to highlight major accomplishments and other content from each expedition.

Saildrone Completes World-first Uncrewed Alaska Ocean Mapping Mission

The Saildrone Surveyor, the world's largest uncrewed ocean mapping vehicle, completed a months-long survey around Alaska's Aleutian Islands and off the coast of California as part of a multi-agency public-private partnership funded by the National Oceanic and Atmospheric Administration (NOAA) and the Bureau of Ocean Energy Management (BOEM) to gather data on several large, unexplored areas off the Aleutian chain identified as high priority for NOAA, BOEM, the US Geological Survey, and the broader federal Interagency Working Group on Ocean Exploration and Characterization. The Surveyor surveyed more than 45,000 square kilometers of previously unknown ocean floor around Alaska's Aleutian Islands and off the California coast. The project was operationally

managed through the NOAA OECI, including its partner institution, the University of New Hampshire. For more details, please see this press release.

Global Ocean Science Education (GOSE) Workshop on Underwater Sound

The 2023 GOSE Workshop, held from **May 23-25, 2023** on the URI Graduate School of Oceanography in Narragansett, RI, will focus on sound in the ocean, including the science of underwater sound, animal sound production and reception and people's use of sound underwater. International regulations related to underwater sound, the technologies that use sound and related workforce development will also be included in the program. Participants will share ideas about what people want to know and should know about these topics, related educational strategies, and resources for a variety of audiences, including students, the public, existing workforce, and policymakers.

Registration for the 2023 workshop event is now open- please visit the registration site for more details.