

**Papahānaumokuākea Marine National Monument
Agency Report to the Reserve Council
April – June 2022**

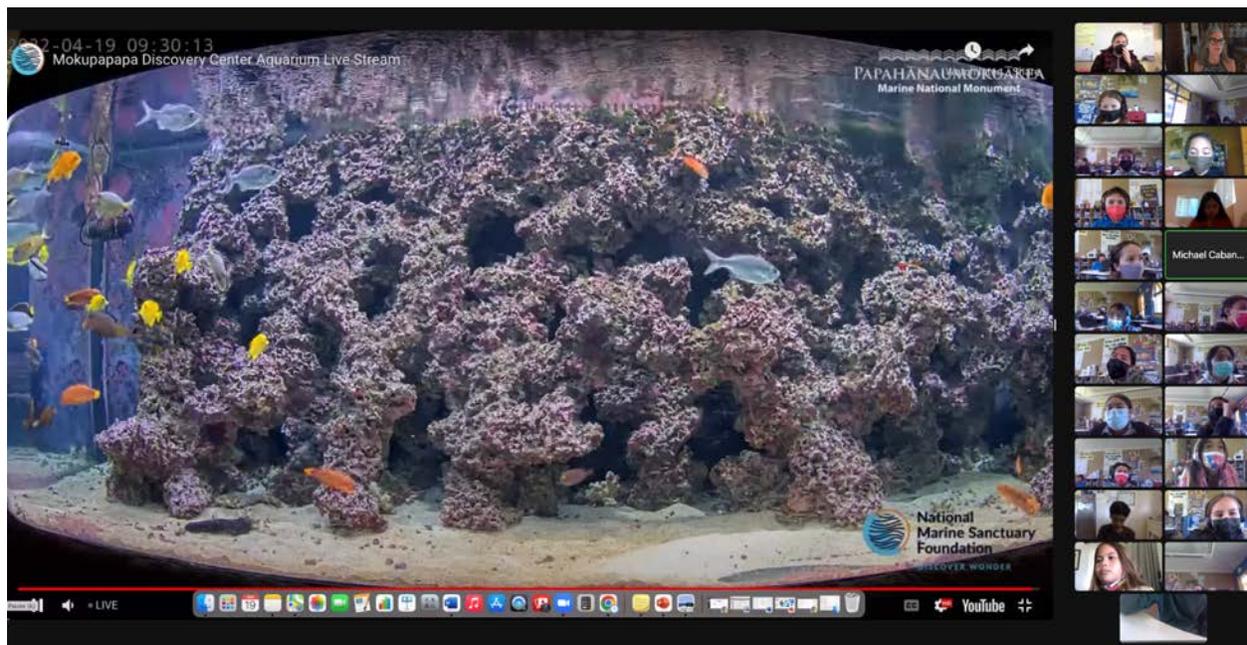
Agency: NOAA/NOS/ONMS/PMNM
Presented by: Athline Clark, Superintendent
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Agency Accomplishments & Recent Activities

Education, Outreach & Mokupāpapa Discovery Center Highlights

PMNM “Earth, Sea, Sky: Creating Connections” Educational Program Launched

On April 19, PMNM staff Michael Caban and Malia Evans launched a new virtual huaka’i (field trip) in an educational partnership between Mokupāpapa Discovery Center, the Hawai’i Volcanoes National Park and the University of Hawai’i at Hilo ‘Imiloa Astronomy Center with 4th grade students from Kanu O Ka ‘Āina Public Charter School. Through participation in field trips with each organization, virtually or in person, students learn how interconnected and interdependent life is in the Hawaiian archipelago, as well as how we can mālama ‘āina, care for the world around us. Students are grounded in traditional Hawaiian knowledge systems and practices and exposed to a diverse range of scientific research and local citizen science projects. In addition, students are introduced to promising career pathways that emphasize connection to the earth, sea, and sky around them.



Fourth grade students from Kanu O Ka ‘Āina Public Charter School practice kilo, deep observation while viewing a livestream of the 3,500 gallon aquarium at Mokupāpapa Discovery Center to understand adaptations. (Credit: Malia Evans/NOAA)

E/V *Nautilus* Returns from a Successful Expedition in PMNM

On April 28, the E/V *Nautilus* returned to port after eleven highly productive dives on nine different seamounts as part of [NA138 Lu‘uaeahikiikekumu](#) - Ancient Seamounts of the Lili‘uokalani Ridge. Research efforts focused on geologic samples for dating and geochemistry, study of the microbiome around the ferromanganese crust, and biological samples of potentially

new species or species ranges. Educators provided 115 ship-to-shore interactions including English, 'Ōlelo Hawai'i (Hawaiian Language), and American Sign Language. This effort reached over 3,380 students in twenty-two US states, plus Guam, American Samoa, the Northern Marianas Islands, Canada, and China with personalized dialogue with STEM professional explorers. Over thirty-five percent of the interactions connected directly to learners in Hawai'i and other Pacific Islands. Highlight videos, including views of dense coral gardens and cultural perspectives on deep ocean exploration, can be viewed at [nautiluslive.org gallery page](https://nautiluslive.org/gallery-page).



Incredibly colorful and diverse sponge and coral communities on a north ridge of King George Seamount. (Credit: OET/ NautilusLive and Oregon State University/Thurber)



Dumbo octopus observed at Mercury Seamount. (Credit: OET/NautilusLive and Oregon State University/Thurber)

PMNM and Ocean Exploration Trust Collaborate at Hawai'i STEM Conference

On April 29, PMNM Educator Justin Umholtz joined Malanai N. Kāne Kuahiwinui, Ocean Exploration Trust (OET) Science Communication Fellow, and Megan Cook, OET Director of Education and Outreach, to present at the [13th Annual Hawai'i STEM Conference](#). With the assistance of NOAA OCM Visualization Specialist Michael Pai as on-site facilitator, the team presented live from the E/V *Nautilus*, sharing information about the deep ocean exploration just completed within Papahānaumokākea Marine National Monument ([NA138](#)), providing a tour of the vessel and the ROV equipment, describing some of the new cultural resources available, and highlighting the diverse STEM careers and internships available within this field. The team presented at two sessions, interacting with sixty middle and high school students from across the Hawaiian Islands.



Malanai Kuahiwinui examines the ROV Hercules's forward biobox as she practices for the upcoming ship-to-shore conference presentation. (Credit: OET/Nautilus Live and NOAA)

PMNM Scientist Gives Online Presentations to 10th Grade Science Classes

On April 27, PMNM Research Ecologist Randy Kosaki gave online interactive presentations and held Q&A sessions for three classes of tenth grade science students (approx. 55 students total) from Wai'anae High School on O'ahu's west side. Each of the three sessions lasted ninety minutes and focused on recent discoveries resulting from exploration of deep coral reefs in PMNM, use of indigenous Hawaiian names for new species, and global-scale threats to coral reef ecosystems worldwide. These presentations provided additional relevancy to local scientific efforts as the students are in the midst of a two-month lesson on marine science.

Papahānaumokuākea Releases June Newsletter

On June 6, PMNM's Office of National Marine Sanctuaries released our June newsletter, [KŪ KA NŪ HOU](#), featuring some of the monument's many accomplishments and upcoming notable events. Kū Ka Nū Hou means "news revealed" and implies the season of kauwela (summer), when elements of Kū, the primary Hawaiian god or akua associated with this time of the year, are prominently reestablished. This newsletter reflects some of the initiatives of NOAA's Office of National Marine Sanctuaries and partners. It is produced three times a year, to coincide with the seasonal changes: the ending of Makahiki and the wet season or ho'oilō (February), the summer solstice and dry season or kauwela (June), and the coming of the Makahiki season and the wet season or ho'oilō (October). Find this and other PMNM newsletters at:

<https://www.papahanaumokuakea.gov/new-news/newsletter/>



Mokupāpapa Discovery Center Reopens on World Ocean Day

On June 11, Mokupāpapa Discovery Center reopened with the first in person event in over two years, a celebration of World Ocean Day, and the 50th Anniversary of the National Marine Sanctuary System. It was also the inaugural event for a new community partnership with three other Downtown Hilo museums called Museum Square. Over 700 visitors (722) came through Mokupāpapa, with another 300 visiting our outreach tent in nearby Kakākāua Park where a World Ocean Day event was held with other partners, live radio coverage, and family activities. The new Museum Square partnership includes the Pacific Tsunami Museum, East Hawai'i Cultural Center, and the new Hawai'i Science and Technology Museum, forming an interpretive trail through downtown Hilo. Museum Square intends to host quarterly events, and enhance the local economy while providing STEAM and cultural based activities for families. Hilo residents shared their gratitude and excitement for Mokupāpapa re-opening, and many enjoyed the new Kenyan K. Beals Community Robotics Center where they built and piloted small robots. This area will be a training area for robotics competitions, and to build ROV's for future competitions co-hosted by Mokupāpapa. Hawaiian Islands Humpback Whale NMS also participated in our reopening with an activity and information booth. Extensive work was done to prepare the facility for re-opening including refinishing of floor areas, installation of a new front desk, and facility-wide cleaning and repair.



Left: Cindy Among-Serrao, Hawai'i Island Program Coordinator for Hawaiian Islands Humpback Whale NMS staffing an outreach table at the Mokupāpapa Re-opening. The Kenyan K. Beals Community Robotics Center at the Mokupāpapa Re-opening. (Credit: Andy Collins)



Papahānaumokuākea Marine National Monument outreach booth in Kalākaua Park during the Museum Square World Ocean Day event, June 11th, 2022. (Credit: Andy Collins)

National Marine Sanctuaries: Where We've Been and Where We're Headed

On June 16, as part of the [National Marine Sanctuaries Webinar Series](#) and the Mokupāpapa Third Thursday by the Bay Lecture Series, John Armor, Director of ONMS, celebrated our 50 year history and shared upcoming plans for the sanctuary system. There were 385 scientists, educators, students, and families registered for the webinar with 145 attending. Viewers represented 31 states/territories and 15 different countries outside of the United States, and were very engaged with great questions.



John Armor highlighted [50th Anniversary celebrations](#) as well as [Our Blue Legacy: Fifty Years of Impact of the National Marine Sanctuary System](#). (Credit: NOAA)

PMNM Mokupāpapa Discovery Center Weekly Report

During the week of Tuesday, June 14 - Saturday, June 18, MDC welcomed **1098** visitors to the facility. Special activities for the week included the Third Thursday by the Bay Webinar featuring John Armor and the Kenyan K. Beals Robotics center community workshop teaching participants to build brush bots - mini robots made from the head of a toothbrush.

[Research & Field Operations](#)

PMNM Field Team Prepares for Remote Field Operations

PMNM Field Team members recently began preparing for the 2022 field season. With PMNM operations occurring in the remote Northwestern Hawaiian Islands, the primary focus remains team member safety. During the preparations, PMNM small boats, diving and field gear, and safety equipment were all inspected and tested. A variety of boating and dive rescue drills were conducted under different marine conditions to be prepared for realistic field scenarios.



(Left) PMNM Field Logistics Technician inspects field gear. (Right) PMNM Field Team conducting rescue drills. (Photos J. Leonard).

PMNM Field Team Prepares for Mission to Midway Atoll

On May 10, the PMNM Field Team loaded the *M/V IMUA* with PMNM small boat *Malolo* and scientific gear in preparation for transport to Midway Atoll to support field work that is scheduled for July. This project will collect ecological and oceanographic data on the nuisance macroalga *Chondria tumulosa* to better address management issues by developing eDNA detection tools and life history profiles. The research is being supported by NFWF funding to the University of Hawaii (UH) and the College of Charleston (CoC) with USFWS and ONMS providing in-kind logistical support.



(Left) PMNM small boat Malolo and trailer being loaded onto M/V IMUA. (Right) PMNM, UH and CoC assets and scientific gear staged to be loaded (Photos: Keolohilani H. Lopes Jr.).

PMNM Field Team Conducts Remote Operation Vehicle Training

On May 13, PMNM field team members met with a representative from Deep Trekker to train and test a variety of remotely operated vehicles (ROV). PMNM staff were introduced to newer models and upgrades to their existing systems including sonar, calibration lasers, and add-on

thrusters. These newer upgrades would simplify the ability to move vertically through the water column and allow inspectors conducting vessel hull inspections to gather sizing metrics on alien species; ultimately leading toward an increase in the ability to conduct more accurate surveys and bolster PMNM's Resource Protection Program.



(Left) Demonstration of the Sonar capabilities of the Deep Trekker Revolution. (Right) Jason Leonard inspecting the features of the Revolution. (Photos: Brian Hawk).

PMNM Field Team Conducts Oahu Acoustic Mooring Retrieval

PMNM Field Team members LTJG Luke Evancoe, Keo Lopes and Jason Leonard recovered an acoustic mooring package for the Hawaiian Islands Humpback Whale National Marine Sanctuary in the waters off Makapu'u. The data collected from this device helps ONMS researchers identify the distribution of humpback whale occurrence off of O'ahu. The mission also allowed PMNM members to conduct small boat drills and continue to break-in the new engines for R3602 Hihimanu.



(Left) Jason Leonard and LTJG Luke Evancoe (driving) buckled in for the rough ride out to the buoy in the Hawaiian Islands Humpback Whale Marine National Sanctuary (Photo: K. Lopes). (Right) PMNM staff LTJG Luke Evancoe and Keo Lopes recovering the buoy package at the Makapu'u buoy site (Photo: J. Leonard).

Awards

PMNM Staff Member Recognized for Achievements in the Pacific Islands Region

On April 13, NOAA Corps office LT Luke Evancoe (PMNM Vessel Operations Coordinator) was selected as an award winner for the 2022 Federal Asian Pacific American Council (FAPAC) Uniform Services Award as one of the top outstanding individual performers making significant contributions to his profession and the Asian American and Pacific Islander community.

Agency Coordination

PMNM Holds Semi-Annual Law Enforcement Coordination Team Meeting

On April 6, Papahānaumokuākea hosted the semi-annual Law Enforcement Coordination Team meeting virtually with representatives from the U.S. Coast Guard, NOAA's Office of Law Enforcement, and Office of General Counsel for Enforcement and Litigation, and FWS's Office of Law Enforcement, and Office of Refuge Enforcement. PMNM staff presented on permitted activity, IMO vessel notifications, as well as an update on the sanctuary designation process. Representatives from the law enforcement agencies also discussed current law enforcement efforts within the monument.

PMNM Supports 80th Anniversary of the Battle of Midway

June 4-7 marked the 80th Anniversary of the Battle of Midway and a weeklong series of events to commemorate this important milestone in US history. As part of the remembrance, an evening reception was held to honor two Battle of Midway veterans that traveled to Hawaii for the official ceremonies held on Midway Atoll and Oahu. For the evening, Papahānuamokuākea staff members Malia Evans and Kaneo Morishige created beautiful table centerpieces out of Hawaiian flowers and plants, Kahi Fuji created a new 80th Anniversary logo and program flyers for the multiple events, and Eric Roberts emceed the reception. Papahānuamokuākea Superintendent Athline Clark was also in attendance to represent ONMS and honor the veterans.



Top left: Eric Roberts with reception guests. Top right: Two Midway veterans and guests. Bottom left: Anniversary logo by Kahi Fuji. Bottom right: Opening protocol with keiki hula dancers. (Photos: USFWS, NOAA)