



‘ŌLELO NO‘EAU

He po‘i na kai uli, kai ko‘o,
‘a‘ohe hina pūko‘a.*

*Though the sea is deep
and rough, the coral rock
remains standing.*

This ‘ōlelo no‘eau symbolizes the resilience and grit it takes to endure hardships and overcome adversity like the coral reefs that persist and thrive through the test of time. In the face of today’s uncertainties, whether it be the hard-felt impacts of climate change, COVID-19, or other stressors in life, we are inspired to stand our ground and continue to care for ourselves, our families, our communities, and the places we call home.



As Makani ‘Olu approaches Nihoa, the team helps crew prepare the vessel. Image: Brad Ka‘aleleo Wong/OHA

National Marine Sanctuary Designation Consideration for Papahānaumokuākea

NOAA’s Office of National Marine Sanctuaries has begun the process to consider designating marine portions of Papahānaumokuākea Marine National Monument as a national marine sanctuary under the National Marine Sanctuaries Act. A series of virtual public meetings were held in December, with initial public comments received through January.

Native Hawaiian kūpuna (esteemed elders) have strongly advocated for the long-term lasting protection of Papahānaumokuākea. Hanohano Nā ‘Āina Kūpuna is a tribute to Papahānaumokuākea as a sacred ancestral place to kanaka ‘ōiwi (Native Hawaiians) who honor this extensive seascape as an area where all life

emerged and evolved from, and to which spirits return to after death.

Sanctuary designation would add the conservation benefits and permanency of a national marine sanctuary to safeguard resources in the marine portions of the monument. It will provide another layer of protection to continue honoring this place and will not diminish any existing protections.

The co-management structure that is a hallmark of the monument will continue.

For more information, visit www.papahanaumokuakea.gov/sanctuary-designation.



SAVE Spectacular

Celebrating 50 Years of National Marine Sanctuaries

50 Years of Ocean Conservation and Stewardship

Image: Mark Sullivan/NOAA

Nearly 50 years ago, a new era of ocean conservation was born by creating a system of national marine sanctuaries. Since then, the National Marine Sanctuary System has grown into a nationwide network of 15 national marine sanctuaries and two marine national monuments that conserve more than 620,000 square miles of spectacular ocean

and Great Lakes waters, an area nearly the size of Alaska.

We believe that water is a thread that connects us all. National marine sanctuaries and monuments, including Papahānaumokuākea Marine National Monument, provide opportunities for people to discover, respect, and form

lifelong connections with these spectacular places.

The National Marine Sanctuary System turns 50 on October 23, 2022. Please join us this year as we celebrate the history, accomplishments, and beauty of these incredible underwater parks!

E ola ka 'Ōlelo Hawai'i, the Hawaiian language lives through ocean exploration



Kalama'ehu Takahashi and Kainalu Steward conduct a ship-to-shore interaction in Hawaiian language with students from Ke Kula 'ō Nawahiōkalanīōpu'u on Hawai'i island. Images: Malia Evans/NOAA via Zoom Screenshot

As we celebrate Hawaiian Language month during February, we feature the collaboration between Papahānaumokuākea Marine National Monument (PMNM) staff, Native Hawaiian educators and OET *Nautilus* crew to support Hawaiian culture and Hawaiian language normalization during the 2021-2022 research



expeditions. Initiatives developed during 2021 include naming the three deep-sea expeditions in PMNM through traditional Hawaiian naming processes, the compilation of Hawaiian vocabulary for ocean science terminology, and broadening educational outreach through a network of local schools, including charter and Hawaiian immersion

schools. A highlight for many local students and educators were ship-to-shore interactions in either Hawaiian or English language between the research vessel and classrooms. Thirty school and community groups from Hawai'i connected through the live interactions, including seven kula kaiapuni (Hawaiian language schools). In addition, the collaboration with OET will produce video and media content grounded in Hawaiian cultural perspectives that include Hawaiian language voiceovers and captioning. As *Nautilus* continues ocean exploration in PMNM and the broader Pacific during 2022, the Hawaiian language and worldview will be an integral component for enhanced understanding of the oceanic realm through a cultural lens.



Resilience Strategy for Lalo

The coral reef and low-lying terrestrial ecosystems of Papahānaumokuākea Marine National Monument (PMNM or Monument) are among the places most vulnerable to climate change. Projected impacts to marine ecosystems – and the protected species that reside therein - are expected to arise from increasing ocean temperatures, ocean acidification, and increasing sea levels and storm intensity among other factors. In 2016, NOAA's Office of National Marine Sanctuaries (ONMS) released a report entitled "[Climate change vulnerability assessment for the Papahānaumokuākea Marine National Monument](#)" based on the findings collected from a series of workshops, interviews with PMNM management partners, and a literature review. The purpose of the report was to provide guidance for PMNM's response to climate change by assessing its effects on various natural and cultural resources.

As a cross-NOAA regional collaboration, the Pacific Regional Executive Board (PREB) is endorsing an effort to update and extend this previous work with the objectives of formulating a more nuanced understanding of the impacts on various natural and cultural resources within PMNM in light of a changing climate, and identifying a range of measures that can be taken to mitigate these impacts. The NOAA collaboration will focus on understanding and addressing potential impacts of sea level rise, increasing ocean temperatures, ocean acidification, and coastal flooding on critical species (e.g., monk seal, marine turtle, coral, and seabird) habitat at French Frigate Shoals (Lalo) as a first step towards a more expansive inter-agency effort to formulate a set of actions intended to maintain ecosystems and ecosystem services in the Monument over the coming decades. Among desired outcomes resulting from

the NOAA collaboration are a preliminary report that frames the existing problem(s) and proposes a path forward with respect to research that might be warranted, and a plan to engage the larger inter-agency working group in this exercise in the robust and sustainable manner necessary to achieve the desired outcomes in the long term.

To advance this effort, a special session was convened last year as part of the PIFSC/PIRO 4th Annual Collaborative Climate Science Workshop. The special session introduced an assessment protocol for monk seals and marine turtles at Lalo as a way to help outline the current state of knowledge/capabilities and identify information gaps/research needs. This year, on February 9th, a special session will be convened to help establish the current state of knowledge/capabilities around seabirds and coral. This workshop will bring together roughly 40 subject matter experts to discuss these topics.

A cross-NOAA team has also initiated the process to formally nominate Lalo as a NOAA Habitat Focus Area (HFA). These are targeted places where NOAA focuses its programs and investments to address a high priority habitat issue by working with partners and communities. Only one other HFA exists in the Hawai'i region.

For any further questions please contact Phillip Howard (phillip.howard@noaa.gov) or Kiloaulani Ka'awa-Gonzales (kilo.kaawagonzales@noaa.gov).

Image above: A view of numerous green sea turtles/honu (*Chelonia mydas*) and some Hawaiian monk seals/iiohoholoikauaua (*Neomonachus schauinslandi*) on Trig Island, Lalo. Image: NOAA
Background image: Cynthia Vanderlip/DLNR

PMNM Launches the Coral Check-up Lesson Series



Image: Greg McFall/NOAA

We are delighted to announce the public release of the **Coral Check-up Lesson Series**. The NGSS aligned two-unit curriculum introduces students to coral reef monitoring and ecology through virtual real world experiences focused in the Hawaiian archipelago. Students use NOAA and NOAA partner data and online resources to assess coral bleaching impacts, immersing themselves in a worldwide effort to protect and conserve coral reefs. An introductory webinar is scheduled for February 24, 2022. [Register here](#). An in-depth teacher workshop is tentatively scheduled for March 15. Please contact justin.umholtz@noaa.gov if you have questions or if you are interested in participating.



Mural: Kahir Ching

Born Is The Coral Polyp Lesson Recording Available Now!

As teachers pivot to bring interactive educational experiences to their students, Mokupāpapa Discovery Center educators are collaborating with partners to record our Virtual Voyage of Discovery Lessons to offer educators greater flexibility and access. First to emerge online is the **Born Is The Coral Polyp** lesson which explores the Kumulipo, a creation story from Hawai'i to deepen understanding of Native Hawaiian oral traditions, relationships, coral polyp anatomy and the practice of mālama 'āina, to care for and respect the natural world around us. This lesson is geared toward K-4 and includes a hands-on coral polyp activity with a supply list [here](#).



Image: Ocean Exploration Trust/NOAA

Upcoming Webinars

The highly successful monthly webinar series continues with a special presentation by Huihui Kanahahele-Mossman, Ph.D. perpetuating kanaka 'ōiwi (Native Hawaiian) oral traditions in Papahānaumokuākea in celebration of Mahina 'Ōlelo Hawai'i - Hawaiian language month in February, and two presentations on life in the deep-sea and the upcoming issue of deep-sea mining. In the past year over 7,500 people have registered for these presentations with more than half attending the talks, and many more watching the recordings archived on the [Office of National Marine Sanctuaries web page](#).

With all the great presenters over the past two years, we have developed an exceptional online resource for learning about nearly every topic related to Papahānaumokuākea, as well as other sites in the National Marine Sanctuary System. We look forward to seeing you on the upcoming talks.

February 17 at 12 p.m. HST: Dr. Huihui Kanahahele-Mossman, Building Relationships to Papahānaumokuākea through Kanaka 'Ōiwi (Native Hawaiian) Oral Traditions. [Watch the recording \(coming soon\)](#)

March 17 at 12 p.m. HST: Dr. Beth Orcutt, Living Between a Rock and a Hard Place: Microbes in the Deep Sea and Potential Impacts of Deep-sea Mining. [Register for webinar](#)

April 21 at 12 p.m. HST: Dr. Jeff Drazen, The Connections Between Deep-sea Mining, the Monuments and Fisheries. [Register for webinar](#)

May 19 at 12 p.m. HST: Kilo Ka'awa-Gonzales, The Lalo Strategy: An Integrated Approach for French Frigate Shoals. [Register for webinar](#)

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Papahānaumokuākea is co-managed by the National Oceanic and Atmospheric Administration, U.S. Fish and Wildlife Service, State of Hawai'i, and Office of Hawaiian Affairs. This newsletter highlights some of the initiatives of the NOAA Office of National Marine Sanctuaries and partners.