

Papahānaumokuākea Marine National Monument
Agency Report to the Reserve Advisory Council
November 4, 2016 – January 13, 2017

Agency: NOAA/NOS/ONMS/PMNM
Presented by: Athline Clark, Superintendent
Date: February 2, 2017

Agency Accomplishments & Recent Activities

Agency Coordination

Office of Hawaiian Affairs Formally Designated PMNM's 4th Co-Trustee (AC-2.1)

On January 12, 2017, Hawai'i Governor David Ige, Rowena Akana, Chair of the Board of Trustees of the Office of Hawaiian Affairs (OHA), and U.S. Secretaries of Interior and Commerce Sally Jewell and Penny Pritzker signed an updated Memorandum of Agreement (MOA) formally designating the Office of Hawaiian Affairs as a co-trustee of Papahānaumokuākea Marine National Monument. The revised MOA was the product of four months of hard work and negotiations by the Monument Management Board agencies after they were given 90 days by the two Secretaries to revise the original 2006 MOA to include OHA as a co-trustee. For more information, contact Athline.Clark@noaa.gov. Read more here: <http://governor.hawaii.gov/newsroom/governors-office-news-release-oha-named-co-trustee-of-papahanaumokuakea-marine-national-monument>.

Monument Management Board Holds Multiple Meetings (AC-2.2)

The Monument Management Board (MMB) held one quarterly and three ad hoc meetings in the past three months. The first quarterly meeting of the new year on Thursday, January 12, 2017, the same day as the formal announcement designating the Office of Hawaiian Affairs (OHA) at the Monument's 4th Co-Trustee. It was also the final meeting for the current cadre of MMB officers, including ONMS's Athline Clark as Chair. Discussion topics included the recent Notice of Intent regarding Monument Management Plan development and potential National Marine Sanctuary designation as directed by President Obama's Proclamation 9478 of August 2016 expanding the Monument to almost four times its original size. State of Hawai'i Chair of the Board of Land and Natural Resources Suzanne Case sat down with the MMB to discuss the pending Co-Trustee's Conservation and Management permit, and the MMB received updates on various topics, including a summary of the 2016 Hawaiian monk seal field season and the upcoming 75th Anniversary of the Battle of Midway celebration. The three ad hoc meetings are the latest in more than a dozen ad hoc meetings the past year. Discussion and action items included finalizing the draft revised Memorandum of Agreement between the Secretaries of Commerce and Interior and the State of Hawai'i that now includes language designating the Office of Hawaiian Affairs as a 4th Co-Trustee; initiation of the management planning process to address the recent monument expansion; options for moving forward with the 2017 Co-Trustee's Conservation & Management permit that allows agencies to carry out their core functions in the NWHI; and the monument's new Resource Monitor program. 2017 promises to be a very busy year for the MMB! For more information, contact Athline.Clark@noaa.gov.

PMNM Participates in WESPAC Meetings (AC-2.1, CBO-2.3, 3.1, 3.2)

On December 6, 7, 8, 13, 15 and 16, PMNM staff participated in public meetings held by the Western Pacific Regional Fishery Management Council (WESPAC) to hear comments regarding non-commercial fishing measures for the newly expanded area of PMNM. The recent Presidential Proclamation establishing the PMNM expansion area stipulates that only non-commercial fishing (as defined by NOAA) and fishing associated with traditional cultural practices is allowed in the expansion area. Staff attended meetings on Hawai'i Island, Maui, Kaua'i, Moloka'i and O'ahu to provide informational handouts and maps and listen to comments and discussion. 12 people attended the Hilo meeting (5 public

+ 7 staff from WESPAC, NOAA), 16 people attended the Kona meeting (10 public + 6 staff from WESPAC, NOAA), 20 attended the Maui meeting (14 public + 6 staff from WESPAC, NOAA), 10 people attended the Kaua‘i meeting (5 public + 5 staff from WESPAC, NOAA), 30 people attended the O‘ahu meeting (19 public + 11 staff from WESPAC, NOAA), and 9 attended the Moloka‘i meeting (6 public + 3 staff from WESPAC, NOAA). For more information, contact Athline.Clark@noaa.gov.

Constituency Building & Outreach

PMNM Scientist Interviewed on NPR (CBO-2.3, 3.1, MCS-3.4)

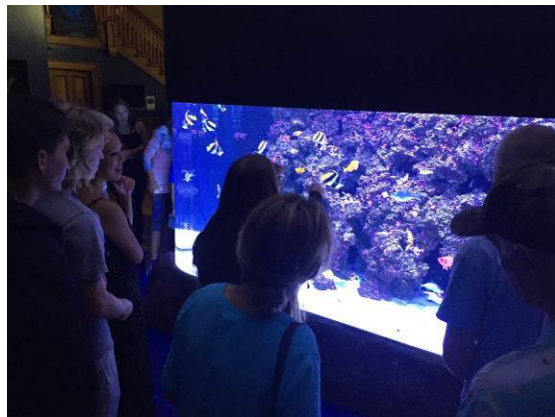
On November 8, PMNM Deputy Superintendent Randy Kosaki was interviewed live on the air on radio station KPCW, the National Public Radio affiliate of Park City, Utah. The radio program, called “This Green Earth,” focuses on the science behind environmentalism. The interview covered the exploration of deep (mesophotic) coral reefs of PMNM, and the impacts of climate change to coral reefs. For more information, contact Randall.Kosaki@noaa.gov or listen to the show at <http://kpcw.org/programs/kpcws-green-earth>.

PMNM Unveils New Fishes from Monument at Mokupāpapa Discovery Center (CBO-3.1, MCS-3.4)

On November 10, PMNM Deputy Superintendent Randy Kosaki gave a free public presentation at the Mokupāpapa Discovery Center (MDC) on deep reef research and new discoveries in the Monument. At least 129 people attended the lecture. Afterwards, visitors headed downstairs to view the new fish species now on display in the MDC aquarium, while aquarist Tim Brown answered questions from the crowd. Two of the fish are species that are completely new to science, and several of the beautiful deep-reef species have never been on public display before. The fishes were collected by rebreather divers at depth of up to 100m on a recent expedition to PMNM aboard NOAA Ship *Hi‘ialakai*. For more information, contact Justin.Umholtz@noaa.gov or Toni.Parras@noaa.gov.

News Clip:

<http://bigislandnow.com/2016/11/16/new-species-unveiled-at-mokupapapa-aquarium/>



Left: Over a hundred people attend Dr. Randy Kosaki’s lecture on deep reef research in PMNM. Right: Visitors enjoy the beautiful fish on display at MDC. (Credits: Toni Parras/NOAA)

PMNM Holds NWHI Tank Talk at Waikīkī Aquarium

On November 17, PMNM staff provided tank-side interpretation at the NWHI tank exhibit at the Waikīkī Aquarium. PMNM Communications Manager Toni Parras and WAQ Volunteer Coordinator Lauren Van Heukelem facilitated discussions about the Monument expansion and the unique creatures found within the NWHI. Approximately 35 people stopped by the exhibit to engage in conversation about PMNM. For more information, contact Toni.Parras@noaa.gov.

PMNM Participates in Hāna Limu Festival (OEL-1.1, 1.3, NHCH-5.1)

On November 18 and 19, PMNM Native Hawaiian Program Specialist Kalani Quioco and Permits & Policy Coordinator Tia Brown attended the 8th Annual Hāna Limu Festival hosted by Nā Mamo o Mū'olea, a grassroots organization that is focused on stewarding the natural and cultural resources of Hāna, Maui. The Hawaiian word for seaweed is limu, and since 2009, the festival has grown to celebrate so much more. This year's theme was "Mālama Honua, Honoring Traditional Knowledge." On November 18, the "E Wala'au Kākou" event was held to honor Hōkūle'a crew members from the community of Hāna and to feature the award winning film, "Papa Mau: The Wayfinder," produced by Nā'ālehu Anthony in conjunction with 'Ōiwi TV. On November 19, the festival continued to feature hands-on activities led by various partners including agencies and other non-profit organizations who are dedicated to the stewardship of natural and cultural resources in Hawai'i. The event included a silent auction that raised funds for the annual Isabella Abbott Scholarship created for the youth of Hāna, Maui. Dr. Isabella Abbott is the reknowned "Limu Lady" from Hāna who was the first Hawaiian woman to receive a Ph.D. in science and became the leading expert on Pacific algae. The communities of Hāna and Kīpahulu on Maui are some of the most active communities in the Hawai'i-wide Intertidal Partnership. Members of these two communities have participated in the annual PMNM Intertidal Cruise in which the main objective is to extensively survey and monitor the intertidal zone in the NWHI as part of a large long-term research initiative. Continuing to support these communities and their efforts strengthens our partnership and demonstrates PMNM's commitment to our partners who are utilizing their experiences from the NWHI to take care of the natural and cultural resources in their communities. For more information, contact Kalani.Quioco@noaa.gov.

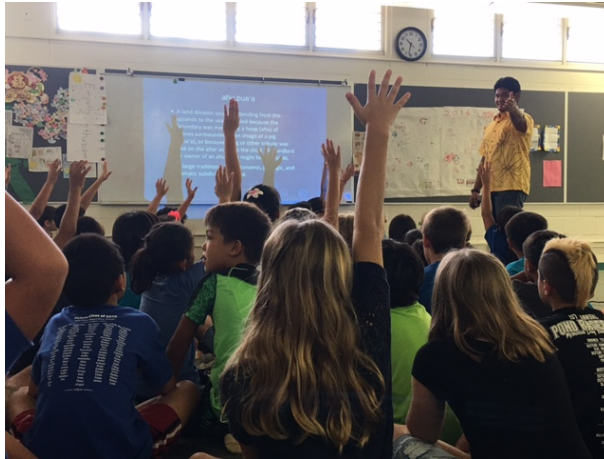


PMNM's Build a Coral Reef activity at the Hāna Limu Festival. (Credit: Tia Brown/NOAA)

Education

PMNM Staff Presents Ahupua'a Lesson at Haha'ione Elementary (OEL-1.1, 1.3, NHCH-5.1, TES-1.5)

On November 10, PMNM staff taught fourth graders at Haha'ione Elementary about the Hawaiian ahupua'a system of land management. Students were taught about the unique and complex land division systems used on each of the eight inhabited Hawaiian islands. Students were asked to think critically about their relationships to the land and challenged to come up with sustainable alternatives to current consumption habits. Approximately 130 students and six educators participated in one of the two hour-long lessons. PMNM Native Hawaiian Program Specialist Kalani Quioco and PMNM Education Specialist Kainoa Kaulukukui-Narikawa facilitated the lessons. More Navigating Change lessons and activities will be scheduled at Haha'ione in coming months. For more information, contact Kainoa.Kaulukukui@noaa.gov.



Hahaione Elementary students raise their hands to answer question posed by PMNM Native Hawaiian Program Specialist Kalani Quiocho. (Credit: Kainoa Kaulukukui-Narikawa/NOAA)

PMNM Presents at Nā Kama Kai Ocean Safety & Conservation Clinic (OEL-1.1, 1.3, NHCH-5.1, TES-1.5)

On November 13, December 11 and January 8, PMNM staff participated in three Nā Kama Kai clinics, at Ewa Beach Park, Kailua Beach Park and Haleiwa Beach Park, respectively. Clinics aim to nurture a love of the ocean and a sense of responsibility for the environment among youth. During the course of the clinics, participants rotate through five stations: Polynesian navigation, ocean safety, stand up paddle boarding, canoe paddling, and stewardship and conversation. PMNM Education Specialist Kainoa Kaulukukui-Narikawa taught participants about the importance of stewardship and conservation through a lesson about PMNM and some of the endangered sea creatures that live within the waters of the Hawaiian archipelago. Approximately 240 students ages two to 17 participated. PMNM staff have been participating in Nā Kama Kai programs for over five years. For more information, visit www.nakamakai.org or contact Kainoa.Kaulukukui@noaa.gov.

PMNM Presents at Kamehameha Schools Maui (OEL-1.1, 1.3, NHCH-5.1, TES-1.5, MD-3)

On November 17, PMNM Native Hawaiian Program Specialist Kalani Quiocho presented at the Huliiau Film & Lecture Series event hosted by Kamehameha Schools Maui. The event features a series of projects, programs and issues presented through a Hawaiian perspective and relates these topics to the Polynesian Voyaging Society's Mālama Honua Worldwide Voyage, with a message about caring for island Earth, which is being shared around the world by navigators aboard the traditional voyaging canoe Hōkūle'a. Kalani presented on the cultural significance of the Northwestern Hawaiian Islands, the management framework of the Monument, the ways that PMNM and partners achieve cultural integration, and how Native Hawaiians have been and continue to be involved in the management of PMNM. The event was attended by over 50 people from the Maui community, which included students of Kamehameha Schools Maui. For more information, contact Kalani.Quiocho@noaa.gov.

PMNM Staff Presents to Waialua Elementary (OEL-1.1, 1.3, NHCH-5.1, TES-1.5, MD-3)

On November 23, PMNM staff taught fourth graders at Waialua Elementary about the cultural and scientific significance of PMNM. The lesson covered a wide variety of topics and focused on the many endangered and threatened species that depend on the Northwestern Hawaiian Islands for refuge. Students also learned about the ecological threats to the Hawaiian archipelago including invasive species and marine debris. At the end of the lesson students were asked to think critically about their relationship to land and ocean and were challenged to come up with sustainable alternatives to current consumption habits. Approximately 80 students and six educators attended the lesson. PMNM Education Specialist

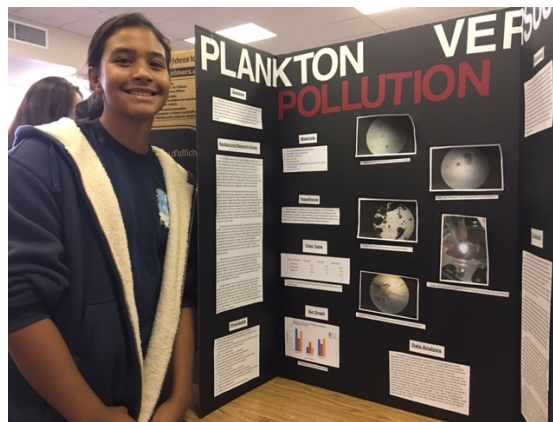
Kainoa Kaulukukui-Narikawa facilitated the lessons. For more information, contact Kainoa.Kaulukukui@noaa.gov.

PMNM Presents at Blanche Pope Elementary School (OEL-1.1, 1.3, NHCH-5.1, TES-1.5)

On December 6 and 7, PMNM Data Team members David Graham and Jon Geyer presented at this year's Hour of Code (<https://hourofcode.com/us>) at Blanche Pope Elementary School in Waimanalo. Jon worked with the second and third grade classes and David with the sixth graders. Topics included computer programming, mathematics, data analysis, statistics, visualization, and marine and terrestrial science. The students were invigorated and Jon and David were exhausted after spending two hours answering questions about computers, the ocean, and paths to becoming scientists and researchers. Four teachers and 60 students attended. For more information, contact David.Graham@noaa.gov.

PMNM Staff Judges Kailua Intermediate School Science & Engineering Fair Projects (OEL-1.1)

On December 2, PMNM staff judged the Kailua Intermediate Science & Engineering Fair. PMNM Education Specialist Kainoa Kaulukukui-Narikawa helped to judge projects that covered topics of marine health. Top projects will compete at the 60th Hawai'i State Science & Engineering Fair (HSSEF) to be held at the Hawai'i Convention Center April 10-12, 2017. For more information, contact Kainoa.kaulukukui@noaa.gov.



Kailua Intermediate student poses with Plankton project display board. (Credit: Kainoa Kaulukukui-Narikawa/NOAA)

PMNM Staff Attends Nā Hopena A‘o Designers Convening (OEL-1.1, 1.3, NHCH-5.1, TES-1.5)

On December 8, PMNM staff attended the Nā Hopena A‘o (HĀ) designers convening at Kamehameha Schools Kāpalama Campus. HĀ is a framework of outcomes that reflects the Hawai'i Department of Education's (DOE) core values and beliefs. The DOE worked with the community to develop competencies that aim to strengthen a sense of belonging, responsibility, excellence, aloha, total-well-being and Hawai'i ("BREATH") in students. With a foundation in Hawaiian values, language, culture and history, HĀ reflects the uniqueness of Hawai'i and is meaningful in all places of learning. HĀ supports a holistic learning process to guide learners and leaders in the entire school community. The HĀ Designers Convening brought together design teams from across the state to build a collective understanding of HĀ and to plan for HĀ Community Days to be held during the month of February ('Ōlelo Hawai'i month). This will be an opportunity to collectively highlight this work to strengthen BREATH and offer HĀ experiences that are rooted in the community. PMNM Education Specialist Kainoa Kaulukukui-Narikawa, Wai'anae Intermediate School Science Coach Kekaha Spencer and Wai'anae Intermediate School student Trinity Tanele drafted a plan for a Wai'anae HĀ Community Day to be held on Saturday February 25. Approximately 55 participants and 15 facilitators participated. For more information, contact Kainoa.Kaulukukui@noaa.gov or visit

Mokupāpapa Discovery Center (MDC) Highlights (MCS-3.4; CBO-3.1; OEL-1.6)

Since November 4, 2016, the Mokupāpapa Discovery Center has welcomed 5,619 visitors. MDC staff also participated in numerous outreach, educational and community support activities, highlighted below.

- University of Wisconsin Stevens Point students spent several hours at MDC for a guided tour, Laysan Albatross bolus dissection and analysis, and discussions of marine debris issues, management strategies, and personal stewardship opportunities (as part of the Wisconsin/Mississippi/Gulf of Mexico watershed).
- Arc of Hilo participants also enjoyed a sneak peak of the Rama Exhibit by artist Calley O’Neill (also displayed at the 2016 IUCN World Conservation Congress) before an interactive humpback whale lesson and art project.



Arc of Hilo participants start on their humpback whale holiday art projects. (Credit: Justin Umholtz/NOAA)

- During the holidays, the public had more time to visit and experience the interactive Polynesian voyaging canoe, the Lost on a Reef exhibit highlighting the underwater archeology efforts within PMNM, and the special artifacts and skull replicas on display.
- The big news was the two ‘Alalā (Hawaiian crow) Release Celebrations hosted at MDC. Between the private evening celebration and the public community day of family-fun educational activities, the events brought nearly 700 visitors to the center. In addition to a successful collaboration with multiple state, federal, and community agencies/organizations, the events were excellent test cases for MDC increasing and improving its events/facility use program.



Left to right: One piece in the Rama Exhibition (Credit: Justin Umholtz/NOAA); ‘Alalā public celebration activities (Credit: Liana Murillo/NOAA); Young visitor learns how the Hawaiian crows are fed while in captivity (Credit: Liana Murillo/NOAA)

Research & Field Operations

PMNM Submits Research and Mapping Proposals to Schmidt Ocean Institute (MCS-1.3, 1.4, AC-3.2)

On December 2, PMNM submitted two joint pre-proposals to the Schmidt Ocean Institute requesting ship time on the R/V *Falkor* for research and mapping in the NWHI. Co-PIs on both proposals include PMNM Deputy Superintendent Randy Kosaki, and Rusty Brainard of NMFS' Coral Reef Ecosystem Program. The first proposal requests ship and ROV time to conduct mapping and deep ocean exploration at depths of up to 4,500 m in the newly expanded area of PMNM. The second proposal seeks to use the high-speed cloud computing capability of the *Falkor* to utilize 3D photogrammetry to document impacts of marine debris on the habitat structure of shallow coral reefs. For more information, contact Randall.Kosaki@noaa.gov.

PMNM Co-Authors Study Comparing Fish Data Collection on SCUBA and Rebreathers (MCS-1.1, 1.2, AC-3.2)

On Dec. 9, PMNM and NMFS PIFSC scientists published a paper comparing fish data collected on open-circuit SCUBA versus that on closed-circuit rebreathers. Open-circuit SCUBA is relatively noisy due to exhaled bubbles, whereas closed-circuit rebreathers are bubble-free and nearly silent. Diver-avoidance behavior due to the noise was found to affect recorded densities of popular fishery species in heavily populated areas where spearfishing on SCUBA is common. PMNM scientists Jason Leonard, Brian Hawk and Randy Kosaki were co-authors on the paper. The article, entitled, "Comparison of Reef Fish Survey Data Gathered by Open and Closed Circuit SCUBA Divers Reveals Differences in Areas With High Fishing Pressure," was published in the scientific journal PLoS One and can be accessed online at <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0167724>. For more information, contact Randall.Kosaki@noaa.gov.

New Species of Deep Reef Basslet from PMNM Named in Honor of President Obama (CBO-2.3, 3.1, MCS-3.4)

On December 21, scientists from the Bishop Museum, NOAA PMNM, and the Association for Marine Exploration published a description of a new species of coral reef fish that they named after President Barack Obama to recognize his role in the recent expansion of PMNM. The fish, whose scientific name is *Tosanoides obama*, was discovered by rebreather divers on a reef more than 300 feet deep during a June 2016 NOAA research expedition to Papahānaumokuākea Marine National Monument in the remote Northwestern Hawaiian Islands. The article, "Tosanoides obama, a new basslet (*Perciformes*, *Percoidei*, *Serranidae*) from deep coral reefs in the Northwestern Hawaiian Islands," was published on December 21, 2016 in the peer-reviewed scientific journal ZooKeys, and is available online at <http://zookeys.pensoft.net/articles.php?id=11500>. The new species of fish was featured in the Washington Post and in Hawai'i made the front page of the Honolulu Star Advertiser. All told, the story resulted in an estimated 3,630 news stories for 217 million impressions at a comp ad value of \$5.8 million. For more information, contact Randall.Kosaki@noaa.gov.

- Star Advertiser article:
<http://www.staradvertiser.com/2016/12/22/hawaii-news/newly-found-hawaiian-fish-is-named-after-the-president-who-expanded-its-sanctuary/>
- Hawaii Public Radio:
One Fish, Two Fish...Obama Fish
<http://hawaiipublicradio.org/post/one-fish-two-fish-obama-fish>



Left: Holotype of Tosanoides obama, collected at a depth of 90 m off Kure Atoll. Right: Paratype of Tosanoides Obama, collected at a depth of 92 m off Pearl and Hermes Atoll. (Credits: Richard L. Pyle/Bishop Museum)



Famed undersea explorer Sylvia Earle presents President Obama with a picture of the fish that now bears his name during his visit to Midway Atoll in September 2016. (Credit: Brian Skerry/National Geographic, while filming “Sea of Hope: America's Underwater Treasures,” premiering on National Geographic Channel on January 15, 2017)

Staff Changes

New Hires:

Jenee Dana Ron, Web Developer/GIS II

Departures:

Jonathan Geyer, Web Applications Developer

Calendar

- Bishop Museum “Fall in Love with Science” outreach event (February 12, 2017)
- Mauka to Makai Waikīkī Aquarium Earth Day event (April 22, 2017)
- Aloha Aina Honolulu Zoo Earth Day event (April 22, 2017)