

Papahānaumokuākea Marine National Monument
Agency Report to the Reserve Advisory Council
September 16, 2017- February 1, 2018

Agency: NOAA/NOS/ONMS/PMNM

Presented by: Athline Clark, Superintendent

Date: March 15, 2018

Agency Accomplishments & Recent Activities

Agency Coordination

E Pū Pa‘akai – PMNM attends a gathering of cultural resources management advocates (AC-2.2, NHCI-1)
On November 2-3, non-profit group Huliauapa‘a organized and led a convening for the Kali‘uokapa‘akai Collective to strengthen our community of practice regarding cultural resources management in Hawai‘i. Kali‘uokapa‘akai translates to mean “the essence of salt” as salt is a significant part of Hawaiian culture. The name draws upon pa‘akai (salt) as an agent of protection, preservation, healing and bringing people together. The Kali‘uokapa‘akai Collective is made up of advocates in wahi kūpuna (ancestral places) stewardship which includes representatives from agencies and organization such as the Office of Hawaiian Affairs, Kamehameha Schools, the Native Hawaiian Legal Corporation, The Nature Conservancy of Hawai‘i and the State Department of Land and Natural Resources. The practice of “wahi kūpuna stewardship” includes conventional approaches for cultural resources management yet is based on Hawaiian principles, methodologies and culture. Over 40 participants gathered as the Collective for this second meeting to focus on a number of objectives: 1) strengthen collective relationships; 2) deepen and broaden knowledge of wahi kūpuna (ancestral places) stewardship initiatives and issues; 3) clarify the vision of how the Collective creates change within Hawai‘i; and 4) strengthen and build the foundation and capacity of the Collective. For more information, contact Kalani.Quiocho@noaa.gov.

Constituency Building & Outreach

PMNM Participates in 10th Anniversary Celebration for Peace Day Hawai‘i (CBO-2.3, 3.1, NHCH-5.1)
On September 16, PMNM staff and partners hosted a booth at the 10th Anniversary Celebration for Peace Day Hawai‘i at the Soka Gakkai International-USA Hawai‘i Culture Center on O‘ahu. This year’s theme was “Journey for Peace with Aloha: Making Connections.” During the day, the event featured workshops, guest speakers, and informational tables from 30 organizations. That evening, an awards ceremony was held honoring Nainoa Thompson with the 2017 Peace Day Hawai‘i Distinguished Peacemaker Award. Approximately 1,000 people attended. For more information, contact Toni.Parras@noaa.gov.

PMNM Participates in CAPTSONE Ocean Exploration Celebration (CBO-2.3, 3.1, MCS-3.4)
On Sunday, October 1, PMNM and HIHWNMS staff hosted a booth at the “Ocean Exploration Celebration!” co-hosted by NOAA, Schmidt Ocean Institute (SOI) and University of Hawaii School of Ocean and Earth Science at UH’s Marine Center at Pier 35. The first hour consisted of a media event with opening remarks by SOI Founder Wendy Schmidt, NOAA’s OAR Assistant Administrator Craig McLean, and UH’s Brian Taylor, followed by VIP tours of both ships, NOAA’s *Okeanos Explorer* and SOI’s R/V *Falkor*. The rest of the day was open to the public, with free ship tours and partner display booths. Approximately 1000 people attended, including Senator Brian Schatz. For more information, contact Toni.Parras@noaa.gov.

Emergency Managers from South Korea, China and Macau Visit Mokupāpapa (CBO-2.3, 3.1)
On October 17, a group of Emergency Managers from South Korea, China and Macau visited Mokupāpapa Discovery Center as part of cooperative meetings between with the Pacific Region National Weather Service and Hawai‘i Emergency Managers. PMNM Education Coordinator Andy Collins gave a guided tour to the group and discussed management of Papahānaumokuākea, education, and issues with emergency response in the Northwestern Hawaiian Islands. Pacific Region NWS Director Raymond Tanabe coordinated the visit. For more information contact Andy.Collins@noaa.gov.



Emergency Managers from South Korea, Macau and China and NOAA NWS Pacific Region Director Ray Tanabe visit MDC. (Credit: Andy Collins/NOAA ONMS)

University of Hawai‘i School of Ocean and Earth Science and Technology Open House (CBO-2.3, 3.1, 3.3, MCS-3.4, TES-1.5, MH-2.1 & 2.2) On October 20 and 21, PMNM staff participated in the 14th biennial University of Hawai‘i School of Ocean and Earth Science and Technology (SOEST) Open House. Approximately 6,750 people participated in the two-day event and learned about various ocean and Earth sciences. Many schools from across the island of O‘ahu participated in Friday’s activities while Saturday’s attendees were primarily families. From earthquakes to volcanoes and from fossils to marine mammals, SOEST students, staff and faculty offered more than 100 interactive learning stations. NOAA Pacific Region had its own pavilion, which included Fisheries, NWS, ONMS, PMNM, HIHWNMS and the NOAA Marine Debris Program. Several PMNM staff participated in the two-day event and engaged attendees in an interactive wheel-map game about the Monument, marine life coloring activities, a rebreather and mesophotic research presentation, and providing general information. For more information, contact Toni.Parras@noaa.gov.



Clockwise from Top Left: JIMAR Field Logistics Technician Keo Lopes teaches students about mesophotic research while Deputy Superintendent David Swatland models a rebreather unit at SOEST. (Credit: Nicole Evans/Lynker-NOAA); PMNM Planning and Evaluation Specialist Alyssa Miller teaches students about deep sea exploration in PMNM; A student enjoys the new marine debris photo booth; PMNM Planning and Evaluation Specialist Nicole Evans teaches students about PMNM. (Credits: Toni Parras/NMSF-NOAA)

Papahānaumokuākea Featured in “World Heritage Coral Reefs” Exhibit in Paris (CBO-2.3, 3.1, MCS-1)

On October 3, an exhibit of the world’s most iconic coral reef systems opened at the Aquarium of Paris, Trocadero. The display sheds light on the condition of these coral reef systems inscribed on UNESCO’s World Heritage List. Through a series of photos, virtual reality experiences, films and educational activities for children, the exhibit aims to raise awareness of the unique diversity of these reefs and the impacts of climate change on them. Papahānaumokuākea is one of six sites featured, showcasing PMNM’s spectacular coral reefs. The exhibit is supported by the Aquarium of Paris, its partners, and the French Agency for Biodiversity. Nearly 500 people attended opening night of the exhibit, which will run through December 6, 2017. For more information, visit <http://whc.unesco.org/en/news/1713>, <https://goo.gl/pPZ6h3>, or contact Toni.Parras@noaa.gov.



Nearly 500 people attended an exhibit featuring World Heritage sites including PMNM at the Aquarium of Paris, Trocadero. (Credits: Aquarium de Paris Cinéaqua/David Fernandes)

PMNM Native Hawaiian Program shares about indigenous knowledge systems (CBO-2.3, 3.1, 3.3, MCS-3.4, NHCI-3.1) On October 19, PMNM Native Hawaiian Program Specialist Kalani Quiocho presented to a University of Hawai‘i course, Botany 350: Conservation and Resource Management in Hawai‘i. Kalani presented about indigenous knowledge systems related to natural resource management and highlighted the current work within PMNM that achieves indigenous integrated management. Approximately 50 students attended. On October 23, Kalani provided a cultural briefing to staff of Kupu, a non-profit organization that empowers future generations to create a more sustainable Hawai‘i. Kupu provides interns that support work within each of the PMNM co-managing agencies. Approximately eight Kupu staff attended. For more information, contact Kalani.Quiocho@noaa.gov.

PMNM Supports the Revival of Fishpond Culture in Hawai‘i with Paepae o He‘eia (CBO-3.1)

On November 14, PMNM Staff visited a culturally significant site called Ka Loko I‘a o He‘eia (He‘eia Fishpond), located in windward O‘ahu. He‘eia Fishpond is an example of traditional Hawaiian aquaculture and is one of the largest fishponds in Hawai‘i. Several oral traditions tell us how this place is connected to the Northwestern Hawaiian Islands and Wākea, one of the revered ancestors of Hawaiians for whom the Monument is named. The PMNM staff were hosted by a grassroots organization called, Paepae o He‘eia, who are dedicated to the care of He‘eia Fishpond. The organization’s vision is to perpetuate a foundation of cultural sustainability for communities of Hawai‘i through values and concepts from traditional fishpond culture. The PMNM staff participated in traditional cultural protocols, assisted in construction of fishpond walls, and removed invasive vegetation. All of these activities reinforce traditional ways of developing relationships with place and people of place.



Left: PMNM staff talk story with Paepae o He'eia staff. Right: PMNM Staff at Paepae o He'eia (Credits: Left: Kahi Fujii/ NOAA Right: Kinohi Pazarro/ Paepae o He'eia)

PMNM attends the 9th Annual Hāna Limu Festival on Maui (CBO-3.1, MCS-3.4, NHCI-3.1) On November 17 and 18, PMNM Native Hawaiian Program Specialist, Kalani Quicho attended the 9th 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 the first day the "E Wala'au Kākou" event was held to honor Hōkūle'a crew members for their courageous efforts to spread the message of "Mālama Honua" ("to care for Island Earth") throughout the world during the 3-year World Wide Voyage. On the second day, the festival continued featuring hands-on activities led by various partners including agencies and 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 reknown "Limu Lady" from Hāna who was the first Hawaiian woman to receive a PhD in science and she became the leading expert on Pacific algae. Dr. Isabella Abbott also named the NOAA Ship Hi'ialakai, "Embracing pathways to the sea" and was a former RAC member. For more information, contact Kalani.Quicho@noaa.gov.



Left: Hōkūle'a anchored in the calm of Hāna, Maui. Right: Kalani Quicho Native Hawaiian Program Specialist shares about PMNM at the 9th Annual Hāna Limu Festival. (Credit: Bill Thomas/NOAA)

PMNM Featured as Special Report in Honolulu Civil Beat (CBO- 3.1, MCS-3.4, NHCI-3.1) On December 4, the Honolulu Civil Beat published an online interactive special report on PMNM, titled "The Last Wild Place." After months of collaboration among co-managing agencies, reporter Nathan Eagle and videographer Alana Eagle spent two weeks traveling aboard the R/V *Kahana* through the Monument, stopping at Laysan Island, Kure Atoll and Midway before flying back to Honolulu. This special report features an interactive map as well as photos, video and audio of researchers and cultural practitioners working in PMNM. For more information, visit <http://www.civilbeat.org/projects/the-last-wild-place/> or contact Toni.Parras@noaa.gov.



PMNM is featured in an interactive special report “The Last Wild Place” in Honolulu Civil Beat.

PMNM Launches “Can You Say It” Annual Awareness Campaign (CBO 3.3) On December 5, PMNM's annual awareness campaign, “Can You Say It?” went live at Ala Moana Center, one of the largest malls in the country. The ad was created in response to the Monument’s expansion last year and the desire of folks to learn how to pronounce the name Papahānaumokuākea. The poster provided a phonetic version of the name as well as a link to the PMNM website audio files to help people learn not only how to say the name but what it means, and encourages visitors to videotape and share themselves saying the name on social media with hashtag #canyousayit. The poster was up for the month of December, with traffic of more than 20,000 visitors a day at that location. For more information, contact Toni.Parras@noaa.gov.



Papahānaumokuākea’s “Can You Say It” Awareness Poster at Ala Moana mall. (Credits: Kahi Fujii/NOAA)

Education

PMNM Supports Waianae Restoration Project (CBO 3.3, AS-9.2) On October 5, PMNM staff from ONMS and FWS joined 100 Waianae Intermediate students in a restoration project at Keawa‘ula Beach by removing around 200 invasive haole koa (shrub trees) and clearing the area of marine debris. Students sifted the beach for micro-plastics and removed 15 trash bags full of plastic debris and other litter from the area. Students learned the importance of conservation and the negative impacts marine debris and micro-plastics can have on the surrounding environment. Students will return in December to outplant native vegetation at the site. About 13 adults participated, including two staff members from DLNR, Waianae Intermediate, and additional crew from other local supporting agencies. For more information, contact Caroline.Jackson@noaa.gov.



Waianae Intermediate students remove invasive species as part of the Keawa‘ula Beach restoration project. (Credits: Caroline Jackson/Lynker-NOAA)

PMNM Participates in Marine Educator’s Night at Waikīkī Aquarium (CBO-2.3, 3.1, MCS-3.4)

On October 6, PMNM and HIHWNMS staff hosted a booth in front of the NWHI tank and exhibit at the annual Marine Educator’s Night at the Waikīkī Aquarium, where representatives from State and Federal organizations and education non-profits provided free instructional materials for classroom teachers. The annual program is sponsored by NOAA’s Ocean Explorer program and the National Marine Sanctuary Foundation. PMNM Communications Manager Toni Parras and FWS Education Specialist Amy Olliffe passed out educational materials and networked with 200 teachers and other educators from all over the state. Visitors were extremely interested and grateful for the materials available. For more information, contact Toni.Parras@noaa.gov.

PMNM Participates in Schools of the Future National Conference (CBO-2.3, 3.1, MCS-3.4) On October 26 and 27, PMNM staff from ONMS and USFWS partnered with other NOAA line offices to host a one-NOAA booth at the 2017 Schools of the Future Conference at the Hawaii Convention Center. Teachers and administrators from public, private, charter and parochial schools in Hawaii and beyond gathered to learn how to best transform existing schools and create new learning environments for the 21st Century. The event was hosted by the Hawaii Association of Independent Schools, the Hawaii DOE and the Hawaii Community Foundation in partnership with the Pillars of Peace Fund of the Hawai‘i Community Foundation and the Hawaii Society for Technology in Education. NOAA was offered a free booth in the exhibit hall by the organizers, worth \$1200. Approximately 1800 educators and 100 students attended. For more information, contact Toni.Parras@noaa.gov.

PMNM Presents at Two Schools (CBO-2.3, 3.1, 3.2, OEL-1.4, MCS-3.2, AS-8.2)

- In October, PMNM Deputy Superintendent Randy Kosaki gave a presentation on deep coral reef research in the NWHI to a University of Hawai‘i class (Biology 404: Advanced Topics in Marine Biology). About 20 students attended the lecture, after which the students discussed two journal articles on mesophotic research that had been assigned in advance.
- In November, PMNM Communications Manager Toni Parras gave a presentation to approximately 60 fifth-grade students at Mililani ‘Ike Elementary School for Career Day. The presentation covered an introduction to the Monument, its natural, cultural and historical significance, threats such as marine debris and coral bleaching, work being done by NOAA and partners to study and address those threats, and information on career options and skills needed for this type of work.

PMNM Educators participate in Education and Outreach Meeting in American Samoa (CBO-2.3, 3.1, 3.2, OEL-1.4, MCS-3.4) From November 27-December 2, PMNM educators Andy Collins, Justin Umholtz and Yumi Yasutake joined Ka‘au Abraham of HIHWNMS and Jim Foley with B-WET/OCM to travel to American Samoa for a full week of planning, collaboration, and community engagement at the ASNMS office. Participants completed a PIR Education and Outreach Framework, initiated a PAC-NOS educator hui, and met ASNMS

community and agency partners. Approximately 12 staff participated and engaged with over 50 community members, including students.

Additionally, PMNM staff shared with NMSAS and members of the community of Aunu'u island, the process for collecting fish gonad data to make determinations on spawning activity. Kauai PMNM staff have been using the process for calculating the gonadosomatic index (GSI) for several species of reef fish in Hanalei Bay. This information on peak spawning activity is published in the Hanalei Moon and Tide calendar, a collaborative project that aims to share sustainable fishing practices. The NMSAS and several members of the community of Aunu'u collected their first month of fish gonad data in January of 2018 and hope to produce a spawning guide to help inform fishers when target species should be left to spawn undisturbed.

For more information, contact Justin.Umholtz@noaa.gov.



Left: ASNMS, PMNM, HIHWNMS and OCM staff meet with community members on the island of Aunu'u. Right: Ka'au Abraham of HIHWNMS gives a demonstration of NMS-based ecotourism potential for local residents. (Credits: Isabel Gaoteote/NOAA)



Left: PMNM educator Yumi Yasutake demonstrates fish gonad data collection as part of a sustainable fishing lesson. Middle: PMNM educator Justin Umholtz works with eighth graders at A.P. Lutali Elementary School to experience the life cycle of hot spot archipelagos (Credits: Andy Collins/NOAA) Right: Members visit Fagatele Bay National Marine Sanctuary (Credit: Justin Umholtz/NOAA)

Mokupāpapa Discovery Center (MDC) Report for September 15, 2017 – February 1, 2018 (MCS-3.4; CBO-3.1; OEL-1.6) Mokupāpapa Discovery Center hosted 20,377 people during this time. Highlights include:

- The Liquid Galaxy Exhibit has been loaded with 360-degree dive video footage and 3D coral reef models from PMNM done by Benthic Habitat Researcher Dr. John Burns, enabling visitors to maneuver through schools of Galapagos sharks, coral reef habitats at Pearl and Hermes Atoll, and the shipwreck USNS *Mission San Miguel* on Maro Reef.

- In early January 2018, MDC hosted HIHWNMS Ocean Count Site Leader training for Hawai'i Island with Ocean Count Coordinator Cindy Among-Serrao, attended by 16 volunteers
- At the end of October 2017, 271 people attended the successful “A Perfect Day for an Albatross” event featuring readings and book signings from award winning author and artist Caren Loebel-Fried, a presentation by Linda Elliott of the Hawai'i Wildlife Center, an albatross dance contest, and other fun crafts and learning activities for families and other visitors.
- During school fall break, MDC educators participated in a Harry Potter-themed STEAM camp organized by the Hawai'i Science and Technology Museum. More than 80 second to sixth grade students rotated through thematic classes including a Care of Magical Creatures class focused on Papahānaumokuākea.
- On October 21 the Office of Hawaiian Affairs (OHA) organized a painting event at MDC prior to the dedication of the ‘Ōhi‘a room in an OHA office.



Clockwise from Top Left: Award winning author and artist Caren Loebel-Fried during her presentation to a rapt beaked audience. (Credit: Andy Collins/NOAA); Visitors make albatross beaks and learn about marine debris through bolus explorations during the “A Perfect Day for an Albatross” event. (Credit: Virginia Branco/NOAA); the 360 degree dive experience on the Liquid Galaxy exhibit at MDC; (Credit: Justin Umholtz/NOAA); Results of OHA’s Paint and Sip art event. (Credit: Virginia Branco/NOAA).

Mokupāpapa Discovery Center’s Biggest Event Ever – 2017 Hilo Black and White Night (CBO-2.3, 3.1)

On November 3, Hilo held its 17th annual Black and White Night, the biggest annual event in Downtown Hilo. The event is a gigantic multi-block party where businesses stay open late with free music and live entertainment. Mokupāpapa has participated in this event since 2003 but this year we took center stage and welcomed more than 1,600 visitors, the biggest single-day visitation in our 14-year history. The night started with a live Hula performance from Halau Hula Ke ‘Olu Makani O Mauna Loa. To make things sweeter, the Big Island Bee Keepers held their annual Honey Tasting Challenge, with 97 different types of honey available for tasting and voting on the best honey produced across the state of Hawai'i. We closed out the night with the all-star performers from the week-long East Hawai'i Jazz and Blues festival. Performers included Deems Tsutakawa, jazz soul pianist from Seattle, Bradley Leighton jazz funk flute player from San Diego, Keahi Conjugacion, Grammy

and Hoku Award nominated blues and jazz singer, Jessie Laine Powell, gospel jazz singer from Lexington, and Hilo blues guitarist Larry Dupio. The event showcased the community hub that Mokupāpapa has become and drew in many new visitors who have not previously visited the interpretive facility for Papahānaumokuākea. These kinds of events help to connect visitors and residents alike to the remote coral reefs of Hawai‘i, and bring in many visitors that may not normally visit an interpretive facility. For more information, contact Andy.Collins@noaa.gov.



Left: A live Hula performance from Halau Hula Ke ‘Olu Makani O Mauna Loa drew in the crowd. Right: Jazz Funk flute player Bradley Leighton got the crowd to the feet and dancing the night away. (Credits: Andy Collins/NOAA)

Research & Field Operations

PMNM Intertidal Monitoring Cruise Returns to Honolulu (CO-2.2, NHCI-3.1, CBO-3) On September 24, scientists aboard the R/V *Searcher* returned to Honolulu after spending 14 days at sea monitoring populations of rocky intertidal organisms, including the highly prized seafood delicacy, ‘opihi (*Cellana* spp., limpets). One focus of the cruise was to determine what proportion of the ‘opihi populations are spawning at this time of the year. Representatives of coastal communities in the inhabited main Hawaiian Islands assisted in the surveys, and will take these monitoring techniques back to their home communities for implementation. This year, participants conducted the first rigorous scientific investigation of the limu (algae) along the rocky intertidal habitats in the Monument; a phycologist (limu specialist) from longtime partner Waikīkī Aquarium was on board to lead this work. In addition, for the first time ever, scientists surveyed fish assemblages of the lower intertidal by skin diving in 0-3 m of water in challenging conditions characterized by extreme turbulence and breaking surf. The Phoenix Islands damselfish (*Plectroglyphidodon phoenixensis*), never before recorded from PMNM, was sighted on nine occasions. For more information, see <https://www.papahanaumokuakea.gov/news/2017/09/25/intertidal-2017/> or contact Randall.Kosaki@noaa.gov.



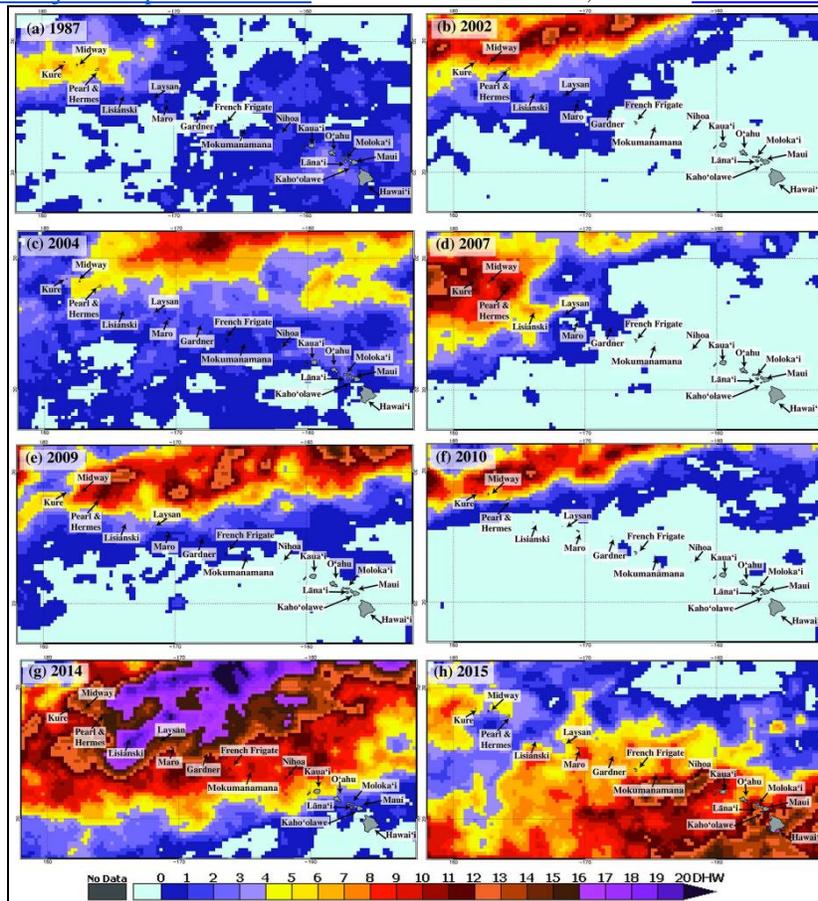
Left: The Phoenix Islands damselfish (*Plectroglyphidodon phoenixensis*), never before recorded from PMNM waters. (Credit: Randy Kosaki/NOAA) Right: Dr. Kosaki is interviewed by TV crew upon return of the expedition. (Credit: Toni Parras/NOAA)

News Clips:

KITV: <http://www.kitv.com/story/36450496/noaa-scientists-study-how-opihi-reacts-in-a-protected-environment>
 KHON2: <http://khon2.com/2017/09/25/scientists-research-opihi-populations-in-pursuit-of-sustainable-harvests/>

PMNM Scientists Publish Analysis of NWHI 2014 Mass Coral Bleaching Event (MCS-3.4; CBO-3.1, AS-8.2)

On September 27, the journal PLoS ONE published a paper describing the causes and consequences of the 2014 mass coral bleaching event in the NWHI. Thermal stress reached extreme levels in 2014, far beyond any historical precedents. Shallow reefs at Lisianski Island experienced over 90% bleaching, and follow-up surveys in 2015 found 89-100% declines in coral cover in these habitats. Using state-of-the-art 3D photogrammetry, the structural complexity of the reef was found to have declined significantly in the wake of coral mortality. Co-authors on the paper include two PMNM post-doctoral researchers, two PMNM/Univ. of Hawai'i undergraduate interns, NOAA Coral Reef Watch scientist Dr. Mark Eakin, and PMNM Deputy Superintendent Randy Kosaki. The paper, entitled, "Mass coral bleaching due to unprecedented marine heatwave in Papahānaumokuākea Marine National Monument (Northwestern Hawaiian Islands)," is available at <https://doi.org/10.1371/journal.pone.0185121>. For more information, contact Randall.Kosaki@noaa.gov.



NOAA Coral Reef Watch annual maximum Degree Heating Weeks (DHW) associated with coral bleaching events in the NWHI since 1987. Note the extreme, unprecedented level of thermal stress in 2014, approaching 20 DHW. 8 DHW (Bleaching Alert Level 2) is considered to be the threshold beyond which coral mortality is likely to occur.

RAMP Cruise Returns from Papahānaumokuākea (MCS-1.1, 1.2) On September 30, scientists returned from a 24-day expedition to PMNM conducting various research activities. Researchers conducted rapid ecological assessments of reef fish, corals and non-coral invertebrates; surveyed coral health; deployed Baited Remote Underwater Video Stations (BRUVS); and conducted open circuit SCUBA-closed circuit rebreather comparison studies. The scientific team of this year's expedition included PMNM researchers from NOAA's Office of National Marine Sanctuaries and Pacific Islands Fisheries Science Center, Joint Institute for Marine and

Atmospheric Research, University of Hawaii-Hilo, the Australian Institute of Marine Science (AIMS), and three distinguished students from the University of Hawaii's QUEST program. For more information, contact Atsuko.Fukunaga@noaa.gov.

News clips:

- Hawaii Public Radio: <http://hpr2.org/post/conversation-tuesday-october-3rd-2017>
- Star Advertiser: <http://www.staradvertiser.com/2017/10/02/hawaii-news/most-of-papahānaumokuākea-coral-reef-still-thrives-scientists-find/>
- Civil Beat: <http://www.civilbeat.org/2017/10/the-state-of-coral-in-the-northwestern-hawaiian-islands/>
- UH Hilo newspaper: <http://hilo.hawaii.edu/news/stories/2017/10/06/marine-science-research-noaa/>



Left: NOAA diver Keo Lopes ascends after a survey. (Credit: Andrew Gray/NOAA) Center: A school of Manini, or convict tangs, at Midway Atoll. (Credit: John Burns/NOAA) Right: Mark Deakos photo-documents an acoustic monitoring receiver installed at French Frigate Shoals to track the movements of previously tagged sharks. (Credit: Karen Bryan/HIMB)

PMNM Scientist Gives Keynote Address at the HLA Annual Conference (CBO-3.1, MCS-1.1, 1.2)

On Saturday, October 28, PMNM Deputy Superintendent Randy Kosaki gave the keynote address at the joint annual meeting of the Hawai'i Library Association and the Hawai'i Association of School Librarians. Sustainability was the theme of this year's conference, which was attended by about 150 people. For more information, contact Randall.Kosaki@noaa.gov.

PMNM Scientist Interviewed by BBC Radio (CBO-3.1, MCS-1.1, 1.2) On Sunday, October 29, PMNM Deputy Superintendent Randy Kosaki was interviewed by BBC radio for expert commentary on BBC's Blue Planet II television documentary series (narrated by David Attenborough). The topic of interest was the predation behavior of giant trevally (*Caranx ignobilis*), apex predators which are very abundant in the NWHI. For more information, contact Randall.Kosaki@noaa.gov.

PMNM Publication: Integrating Culture in Design and Management of Large-Scale MPA (CBO-2.3, 3.1, MCS-1.1, 1.2) On October 31, the journal *Coastal Management* published a paper titled "Papahānaumokuākea: Integrating Culture in the Design and Management of one of the World's Largest Marine Protected Areas." The article talks about the profound implications for contemporary management that are posed by Hawaiian beliefs and traditions, and how current management emphasizes integration of science, policy, cultural knowledge, traditions, and practices to create successful management strategies appropriate for both natural and cultural resources. The article was co-authored by PMNM staff and partners and is available online at <http://dx.doi.org/10.1080/08920753.2017.1373450>. For more information, contact Kalani.Quiocho@noaa.gov.

NMFS, PMNM Scientists Publish Paper Highlighting Coral Reef Fish Monitoring Data (MCS-3.4; CBO-3.1, AS-3.2) On December 5, the peer-reviewed journal *Scientific Data* published an article describing the structure, content, and availability of a NOAA dataset that spans 2010-2017 and contains data from >5,500 survey sites at 39 islands and atolls across all the U.S. Pacific possessions and territories. PMNM and NMSAS data are included in this dataset from annual RAMP (Reef Assessment and Monitoring Program) cruises to those sites. All reef fish survey data are publicly available upon request, and are stored at the NOAA National Centers for Environmental Information (NCEI) Open Ocean Archive. This public access ensures that ONMS PIR is in compliance with the NOAA Plan for Public Access to Research Results (PARR) and White House Office of Science and Technology Policy (OSTP) requirements to make archived and machine-readable data readily available to all users. The open-access article, “Long-term monitoring dataset of coral reef fish assemblages in the western central Pacific,” is available at www.nature.com/articles/sdata2017176. For more information, contact Randall.Kosaki@noaa.gov.

Field Operations Team Report (CO-2.2, MCS-1.6)

- NOAA/PMNM Divers Randall Kosaki, Jason Leonard and Kelly Gleason Keogh were recognized this year with the prestigious NOAA Administrator’s Award for implementing the use of advanced research diving technologies to explore the deep “coral reef twilight zone.” This area of the ocean sits between 200 and 500 feet below the surface, and takes its name for the small amount of light that reaches it. To this day, it remains largely unexplored. Last year, NOAA divers in Hawai‘i reached a depth of 330 feet to further their research in Papahānaumokuākea Marine National Monument. The Administrator’s Award recognizes significant contributions to NOAA programs in equal employment opportunity, diversity, scientific research, public service, engineering development, environmental conservation, policy development, administrative support, public affairs, and information systems. The most important about this award is that it was only available to FTE’s but the entire Field and Research Team made this possible and we would not be able to do anything without all their hard work.
- In November, PMNM, with assistance from OMAO’s National Dive Center in Seattle, relocated and installed a hyperbaric recompression chamber at NOAA’s IRC. This chamber is routinely used on NOAA Ship *Hi‘ialakai* and will be used again during the 2018 cruise season. PMNM and NDC will be transporting and installing a permanent hyperbaric chamber to complement the local chamber. PMNM, PIFSC, OMAO and U.S. Public Health Service staff utilize the chamber.
- The last week of November, NOAA Dive Center conducted a Dive Unit Safety Assessment (DUSA) on PMNM’s Dive Unit and the dive facilities at Inouye Regional Center. The DUSA measures a diving unit’s compliance with NOAA Diving Standards and Safety Manual, including inspection of diving and safety equipment, review of administrative records, and an evaluation of operational procedures and injured diver rescue drills.
- In January, PMNM’s Field Team and members of NOAA’s PIFSC load tested the programs’ small boats in preparations for the upcoming field season scheduled to begin on February 12. This annual structural test involves having 110% of the weighted maximum capacity of the boat loaded into it and then a crane lifts and suspends the boat for a duration of five minutes. This event signals the beginning of another research season for PMNM and PIFSC.

For more information, contact Jason.Leonard@noaa.gov.



Clockwise from top left: DUSA inspection team; DUSA inspectors examine the IRC Hyperbaric Chamber; PIFSC and PMNM teams observe the weigh in; Keo Lopes loading weights into vessel in preparation for it to be weighed; crane weight testing vessel Center. (Credits: Jason Leonard/NOAA)

PMNM presents at the Symposium on West Hawaii’s Marine Ecosystem (MCS-3.4; CBO-3.1, AS-3.2)

On December 5 and 6, PMNM staff participated in the Symposium on West Hawaii’s Marine Ecosystem organized by NOAA’s PIFSC. PMNM’s Keo Lopes presented work investigating the effects of SCUBA exhaust on fish surveys, offering insight on the differences between surveys conducted with conventional SCUBA and those done with exhaust-free Closed-Circuit Rebreathers. Preliminary results from data collected within PMNM show significant differences in the number of jacks observed (more on conventional SCUBA), possibly indicating an attraction to divers’ bubbles, thus increasing the number of observations. Staff from State DAR, PIFSC, The Nature Conservancy, and PMNM presented at this symposium. For more information, contact Keolohilani.Lopes@noaa.gov.



Flyer for the Symposium on West Hawaii’s Marine Ecosystem held in Kailua-Kona, Hawai‘i.

Staff Changes:

Departures: David Swatland, Deputy Superintendent
Tim Brown, Aquarist
Kaliko High, Education Specialist at Mokuapāpapa Discovery Center

New Hires: Michael Caban Akamai-Stephens, Aquarist

Calendar:

- March 18, 2018 - *Fall in Love with Science* Bishop Museum Honolulu, HI 9:00am-3:00pm (reduced admission)
- April 21, 2018 - *Mauka to Makai* Waikiki Aquarium Honolulu, HI (free admission)
- June 2, 2018 - *World Oceans Day* Turtle Bay Resort Haleiwa, HI 10:00am-4:00pm
- June 10, 2018 - *World Oceans Day Celebration* Ko'olina Resort
- July 19, 2018 - RAC Meeting Honolulu, HI