Papahānaumokuākea Marine National Monument Agency Report to the Reserve Council

May 2023 - August 2023

Agency: NOAA/NOS/ONMS/PMNM Presented by: Eric Roberts, Superintendent Date: August 23, 2023

Agency Accomplishments & Recent Activities

Education, Outreach and Mokupāpapa Discovery Center Highlights

Merrie Monarch Craft Fair Table:

Papahānaumokuākea Marine National Monument (PMNM) made its debut at the 60th Merrie Monarch Festival by hosting an information table at one of the largest craft and arts fairs in the Pacific that shared about Papahānaumokuākea, NOAA/ONMS, and our current sanctuary designation processes. We engaged with 855 people during the four day festival, most of whom were Hawai'i residents. The table provided environmental and cultural information.. We also provided kids with an activity station where they could stamp their favorite marine organism or play our PMNM game. Our tabling neighbors were Bishop Museum, Kamehameha Schools (KS), and OHA which made for a fun and engaging environment. We participated in the 'Ōlelo Hawai'i game that KS was playing with the community. Vendors with a hale pe'a (paper tent) on their table invited participants to come to their table to speak Hawaiian and then earn a ticket for using the language. Participants who collected many tickets could earn a prize. This was a fun interactive way to perpetuate the Hawaiian language and engage with the public. Overall, the Merrie Monarch tabling experience was a great way to bring Papahānaumokuākea to the community and we hope to host a table at future Merrie Monarch Festivals.



Photo: (Left) PMNM O'ahu Education Specialist Malia Evans with a visitor. (Middle) PMNM Admin Officer engages the yougest of the community. (Right) Kids activity table.(Photos: Hōkū Pihana).



Staff handed out limu lei fans featuring some of the newly described algal species found in mesophotic reefs with PMNM. The fans include a QR code linked to our Sanctuary Designation website page. (Credit: Justin Umhotlz/NOAA)

Community-Based Exploration: Discovering With Everyone

On April 20, as part of the <u>National Marine Sanctuaries Webinar Series</u> and the Mokupāpapa Third Thursday by the Bay Lecture Series, Daniel Wagner, Chief Scientist for Ocean Exploration Trust, shared exciting 2023 expedition plans for the deep ocean Exploration Vessel *Nautilus*. Dr. Wagner introduced several new mapping and exploration technologies that will be employed this year as well as providing a general overview of the different expedition legs. The E/V *Nautilus* will be mapping and exploring in the northwestern extent of Papahānaumokuākea (<u>NA154</u>) in September. This expedition leg, given the name Ala 'Aumoana Kai Uli (path of the deep sea traveler), will include mapping, geology, biology, and maritime history goals, including the search for sunken carriers from the Battle of Midway. 318 scientists, educators, students, and families registered for the webinar and 98 attended.



Earth Day Celebration at Bishop Museum Attracts Over 2,000 Participants

Papahānaumokuākea Marine National Monument (PMNM) staff Kahi Fujii, Malia Evans, and volunteer Randy Wong supported the Bishop Museum Science and Sustainability Festival on Saturday, April 22 with activities that highlighted sanctuary designation and Hawaiian voyaging and way-finding practices in Papahānaumokuākea. Over 2,000 people, including many 'ohana (families), participated in the numerous hands-on activities provided by over 20 community organizations dedicated to mālama 'āina (caring for the land and ocean) and science and conservation efforts within the Hawaiian archipelago. NOAA line offices and staff participating in the 6 hour festival included PMNM, NMFS, NWS, and the Pacific Tsunami Warning Center, who collectively shared the important work NOAA does within the Pacific Islands Region.



Left: Kahi and Malia prepare outreach material for the thousands of festival participants. Right: Paul Wong and Malia share the cultural and natural history of PMNM with an 'ohana. (Credit: Kahi Fujii/NOAA)

PMNM Collaborates with Hawai'i Department of Education to Support Hōkūle'a Voyage PMNM staff members Kanoe Morishige, Kahi Fujii and Malia Evans supported an inaugural educational series to honor the launch of the <u>Moananuiākea Voyage</u>, a five-year voyage circumnavigating the Pacific Ocean by Hōkūle'a, the Polynesian Voyaging Society's (PVS) traditional voyaging canoe. Sponsored by the DOE, the 3-day event entitled **Ho'ākea Mauka to Makai: Navigating Our Future**, provided educational and cultural activities focused on middle and high school students and teachers from the Wai'anae district, a predominantly Native Hawaiian community on O'ahu. Over 600 students were introduced to non-instrument wayfinding, voyaging traditions, the navigator's mindset and star compass, and ways to mālama 'āina (to care for the land and ocean) in addition to exploring cultural, maritime and science career pathways. NOAA was represented by staff from PMNM, OCM, and NMFS. In the past, Papahānaumokuākea functioned as a traditional training ground for generations of voyagers and apprentice navigators. Today, the tradition continues as we collaborate across agencies and organizations to educate, elevate, and inspire a new generation of youth who embrace the navigator mindset, are grounded in traditional knowledge and stewardship practices and prepared to navigate us through the challenges ahead.



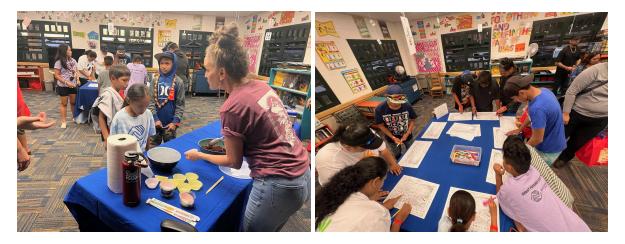
Voyaging canoes Hōkūle'a and Hikianalia moored at Pōka'ī Bay while the crew interacted with the students during the 3-day Ho'ākea event. (Credit: Kahi Fujii/NOAA)



Left: Pwo (Master Navigator) Nainoa Thompson of Hōkūle'a speaks to the large group of middle and high school students. Right: Kanoe shares several projects occurring in PMNM led by Kanaka 'Ōiwi (Native Hawaiian) researchers and cultural practitioners. (Credit: Kahi Fujii/NOAA)

Everything Seaweed at Boys and Girls Club 'Ohana Night

PMNM staff Malia Evans continues to build pilina (relationships) with the Boys and Girls Club of Nānākuli, a Native Hawaiian Homestead community on the Wai'anae coast of O'ahu. The theme of the April 21 evening was 'Ai Pono, to eat food that is beneficial and nutritious for your body. Limu or seaweed, comprised one-third of the traditional Hawaiian diet with over 70 varieties that were named and consumed. Over 100 'ohana members participated in several activities that highlighted native limu found in Papahānaumokuākea, to guessing if household and food items contain seaweed, in addition to sampling fresh and pickled limu salad incorporating Gracilaria tikvahiae, similar to the native limu manauea (Gracilaria coronopifolia). The seaweed is cultivated by students at the <u>Wai'anae High School Marine Science Learning Center</u> which provides students with hands-on experiences in managing aquaculture systems while nurturing relationships with the natural environment and their community.



Malia serves up samples of fresh limu from the aquaculture tank and for comparison a pickled ogo salad to several students while 'ohana identifies marine organisms in Hawai'i that depend on limu for their survival. (Credit: Boys & Girls Club of Nānākuli)

NOAA Regional Collaboration Network exchange with the Nā Wa'a Mauō (NWM) Marine Stewardship Program

Staff from the Nā Wa'a Mauō marine stewardship program hosted 30 members of the NOAA Regional Collaboration Network at Hilo One to share how they use wa'a (outrigger canoes) in marine stewardship. Participants were able to learn how to paddle wa'a (canoe), collect data on the wa'a (turbidity, plankton, water properties, and nā kilo 'āina - observations), use hula to learn the different characteristics of the kai (tides, swells, extreme ocean behavior), and conduct nā kilo 'āina (environmental observations). They also examined the mo'olelo, The Legend of Kana and Niheu, to learn more about the significance of wa'a in Native Hawaiian practice and culture.



Left: RCN members preparing to paddle the wa'a kaulua (double-hull canoe) in Hilo Bay. Middle: Group photo of RCN and Nā Wa'a Mauō members Right: RCN members examining their water sample to identify plankton. (Credits: Hōkū Pihana/NOAA).

NOAA Regional Collaboration Network Connects with Famous Ocean Conservation Leader to Discuss Collaborations

MDC staff supported ONMS PIR staff to host the NOAA Regional Collaboration Network members for a conversation with Nainoa Thompson, a well-known conservation leader and Pwo Navigator with the <u>Polynesian Voyaging Society</u>. Participants discussed opportunities for collaboration as the Hawaiian voyaging canoes Hōkūle'a and Hikianalia begin <u>Moananuiākea</u>: A *Voyage for Oceans, A Voyage for Earth* - circumnavigating the Pacific from 2023 to 2027. The education and outreach opportunities led to much discussion and excitement. MDC will also be expanding the existing voyaging exhibit to engage visitors with this voyage and the many messages of hope and action to steward our island - the planet Earth.



NOAA RCN members are deep in discussion and brainstorming with Nainoa Thompson. (Credit: Andy Collins/NOAA)

MDC Partners with University of Hawai'i to Host C-MORE Science Kit Teacher Workshop On Saturday, May 6, 23 teachers spent a half day learning about the UH PreStem Academy <u>C-MORE Science Kit lending system</u>, with a focus on the Marine Debris Kit. With host sites across the state (including MDC), teachers can access the all-inclusive kits with lesson plans and materials ready for immediate classroom use. NOAA Marine Debris Program PIR Coordinator Mark Manuel spoke virtually to teachers participating at the O'ahu and Hawai'i Island workshop locations to provide an overview of the issue, NOAA education resources, as well as opportunities for students to engage in stewardship activities. Teachers presented on their experience with the kits as well as successful adaptations. In addition to promoting better use of this free resource, the workshop provided MDC educators an opportunity to share PMNM resources and discuss further collaborations with the PReStem Academy related to climate change focused kit development.



Teachers discuss classroom application ideas while surrounded by the different C-MORE science kits. (Credit: Justin Umholtz/NOAA)

Hawaiian Monk Seals - Working to Recover the Endangered Seal of Hawai'i

On May 18, as part of the <u>National Marine Sanctuaries Webinar Series</u> and the Mokupāpapa Third Thursday by the Bay Lecture Series, Stacie Robinson, Research Ecologist with NOAA's Hawaiian Monk Seal Research Program led an engaging presentation on status, trends, threats, and current research related to the highly endangered Hawaiian monk seal. Dr. Robinson described intervention efforts as well as distinct differences between the conservation challenges and strategies in the Northwestern and "main" Hawaiian Islands. 714 scientists, educators, students, and families registered for the webinar and 292 attended.



(Credit: NOAA)

Taitung, Taiwan - Cultural Exchange

The cultural exchange with the indigenous peoples of Taitung, Taiwan was hosted at the Kamehameha canoe club and led by the staff of Nā Wa'a Mauō and Mokupāpapa Discovery Center. Hōkū Pihana led the exchange where participants learned how to kilo (conduct environmental observations) and paddle canoe as well as the different names for the behaviors and characteristics of the ocean through the hula. We shared our cultural protocols with one another through mele and oli and exchanged ocean stewardship practices. They learned of the intimate relationship Native Hawaiians have with Papahānaumokuākea and the rest of the Pae 'Āina o Hawai'i Nei. The educational outputs from this experience were the exchange of cultural practices, the transferring of knowledge across languages, and the opportunity to build upon this foundation through future exchanges.



(Left) Taiwan cultural exchange participants with MDC staff. (Right) Taiwan cultural exchange hosted at the Kamehameha canoe club (Credit: NOAA)

World Bee Day at Mokupāpapa

On May 20 Mokupāpapa Discovery Center, with many local partners and small businesses, celebrated the United Nation's World Bee Day with a family friendly event that attracted 553 participants. Pollinators, such as honey bees, play a critical role in food crop production, and also provide food such as honey and related products. Hawai'i Island has the largest queen bee producers in the world, providing 25% of queen bees shipped to the mainland US and 75% of the queens shipped to Canada, a \$10million/year business. Hawai'i also sells about \$4 million in honey each year. The event was coordinated by Bird and Bee Hawai'i and featured learning activities, locally produced pollinator products for sale, arts and crafts, and informational booths by beekeeping organizations.



The World Bee Day Event at Mokupāpapa featured family friendly crafts such as bee hats. (Credits: Andy Collins/NOAA)



One World Bee Day vendor showed a live bee colony in a demonstration hive. (Credits: Andy Collins/NOAA)

Celebrating World Ocean Day and a Special Birthday!

Papahānaumokuākea Marine National Monument (PMNM) staff Alyssa Miller, Colt Davis, Kilo Ka'awa-Gonzalves and Malia Evans spent June 10th in Waimea Valley on the northshore of O'ahu sharing aloha and information to celebrate World Ocean Day and the 17th birthday of PMNM. The event was organized by Mālama Pūpūkea Waimea, a grass-roots conservation

organization and B-WET grantee. Over 500 people, including local community members, 'ohana, and visitors, participated in the engaging hands-on activities provided by more than a dozen stewardship and conservation organizations and agencies in the theme of Kui 'ia ka lei moku e Kanaloa: the ocean unites humanity. As we celebrate 17 years of protection and co-management of the natural and cultural land and seascapes of Papahānaumokuākea, we continue to advocate for the health of our shared ocean and strengthen our relationships to organizations dedicated to mālama 'āina (caring for the land and ocean) for the generations to come.



PMNM staff engage with community members and visitors of all ages to inspire awareness and human connections to our shared ocean and ways we can mālama, care for it in perpetuity. (Credit: Alyssa Miller & Malia Evans/NOAA

Mokupāpapa Artist-In-Residence

Artist-In-Residence Partick Ching continued work on a large sea turtle mural as part of a larger sea turtle (honu) exhibit coming later in the Summer. Finally, the <u>Hawai'i Science and</u> <u>Technology Museum</u> Kenyan K. Beals Community Robotics Center served 134 community members in STEAM fun this week, continuing their general public activities as well as summer specialized robotics workshops.



Mokupāpapa Artist-In-Residence Patrick Ching continues work on a large sea turtle mural as part of a larger sea turtle exhibit opening later this summer. Photo: Andy Collins

Mokupāpapa "Pops-up" at Local Outrigger Canoe Race

MDC Education and Native Hawaiian Outreach Specialist Hōkū Pihana and Public Affairs Officer for External Affairs--Pacific Islands USFWS Nanea Valeros and her intern Bryline Nelson engaged 60+ youth and community members at the Moku o Hawai'i Outrigger Canoe Racing Association Regatta at Hilo Bay. The outreach is an opportunity for MDC to connect with a large and diverse audience from across the entire island as different canoe clubs converge for the races.



Bryline helps youth examine albatross bolus to identify natural and unnatural diet content. (Credit: Hōkū Pihana/NOAA)

Mokupāpapa Hosts Partner Youth Artivism Camp

Youth Artivists Hawai'i (YAH) is a week-long free summer camp for middle school youth focused on environmental art and ocean science. Organized by MDC partners the East Hawai'i Cultural Center, the MEGA Lab and Pangeaseed Foundation, hosted 35 participants who learned about ocean issues, marine conservation and coral reef protection through art making, hands-on activities and field trips to Hilo Bay. Taking what they learned, youth worked alongside a professional muralist from New Zealand to create their own large scale mural installed at the MEGA Lab in Mokupāpapa. MDC educators also worked with camp participants to connect them with PMNM, providing some early inspiration as they developed their mural themes. At the end of the week, 185 family and community members gathered to celebrate the youth artists and view the completed mural.



The completed Youth Artivists Hawai'i mural. (Credit: Justin Umholtz/NOAA)

Get Into Your Sanctuary Day Celebration in Wai'anae a Resounding Success

PMNM O'ahu staff partnered with Ko Olina Resort and local conservation organizations to celebrate <u>Get Into Your Sanctuary Day</u> on Saturday, July 22. The event was held at Mā'ili Beach Park on O'ahu and featured a beach clean up, a <u>community art mural</u>, a marine debris art exhibit, local entertainment and ocean awareness and educational activities. Attendees engaged with organizations like the Boys and Girls Clubs of Nānākuli and Wai'anae, the Division of Aquatic Resources, Wai'anae High School Marine Learning Center, and many others. Talented Hawai'i artists Ruben Aira, Mark Cunningham and Susan Scott displayed art created from recycled objects, including discarded surfboards. Over 290 pounds of trash was collected from the coastline while local musicians and a hālau hula provided entertainment. The celebration in this large Native Hawaiian community aims to strengthen our relationship and raise awareness about the natural and cultural importance of our sanctuaries and monuments and highlight ways we can make a difference to mālama, care for our shared ocean. 'A'ohe hana nui ke alu 'ia. No task is too big when done together by all.





Attendees to the GIYS event enjoy the numerous outreach activities, including a beach cleanup, art exhibits, entertainment and a community art mural where attendees were invited to add pieces of marine debris to provoke conversations about human impacts on ocean health. (Credit: Sascha Fujiwara/NOAA)

Strengthening Relationships with the Native Hawaiian Community on O'ahu PMNM O'ahu staff continue to build and strengthen relationships and actively engage with Native Hawaiian youth through the Boys and Girls Clubs (BGC) on the Wai'anae coast. On July 18th as a pre-lesson for the Get Into Your Sanctuary Day celebration and beach clean up in Wai'anae, Malia provided 20 middle and high school students in Nānākuli an introduction to the Mōlī, Laysan albatross and the effects of floating marine debris on these charismatic and threatened seabirds. By studying the contents of boluses, the students learned about seabird diets and about human impacts on the pelagic, open ocean marine environment in Moananuiākea, the Pacific. A week later at the Wai'anae BGC 'Ohana Night, over 120 students and family members engaged in an outreach activity that assessed the health of the ocean by examining the bolus of albatross from Kuaihelani (Midway atoll). The powerful lessons reinforced the impacts of floating marine debris on these far ranging and iconic seabirds, the importance of a clean ocean through their participation in the PMNM Get Into Your Sanctuary Day beach cleanup, and the important choices they can make to limit plastic use in their households and community.



On left, Malia invites a young child to kilo, deeply observe the contents of an albatross bolus. On right, Boys and Girls Club 'ohana sit down for a meal prior to engaging in partner activities. (Credit: Malia Evans/NOAA)

Research and Field Operations

PMNM Scientist Gives Invited Talk on PMNM Science at Kaua'i Restaurant

On June 7, research ecologist Randy Kosaki gave an invited lecture at Keoki's Paradise, a fine dining establishment at Poipu, Kaua'i. About 70 customers made reservations to attend the lunchtime presentation. The talk covered recent exploration and discoveries from the deep coral reefs of Papahānuamokuākea, and the ongoing sanctuary designation process for the monument. Kosaki also highlighted the educational and scientific contributions of Mr. Yumi Yasutake, a Kaua'i native and the monument's widely respected Kaua'i Programs Coordinator, who passed away in 2021 at the age of 41. In 2022, Kosaki and collaborating scientists named a new species of mesophotic (deep reef) red algae from Papahānuamokuākea in memory of

Yasutake. The restaurant venue, Keoki's Paradise, hosted Yasutake's family for the lunch presentation as guests of honor at a VIP table for the event.





Left: Flyer advertising Kosaki's talk. Right: Kosaki with Yumi Yasutake's parents and sister (images: Keoki's Paradise).

PMNM Staff Lead Alien Species Vessel Risk Assessment Workshop with State Partners

During the week of May 1st, Resource Protection Specialist Brian Hauk provided training to seven staff from the State of Hawaii's Department of Land & Natural Resources, Division of Aquatic Resources (DLNR/DAR) on how to conduct alien species risk assessments and hull inspections required for permitted vessel access into PMNM. The training consisted of classroom lectures covering diving risks, ship terminology/structure, and species of concern. The classroom sessions were followed by in-water applications of the techniques discussed later in the week. Fellow Co-Trustee Managers can now assess whether there are any species of concern that would need to be addressed prior to a permitted vessel entering the Monument. Training Co-Trustee staff provides additional redundancy for PMNM's Resource Protection Program and builds capacity to assist with future vessel inspections. This inspection (required by PMNM regulations) was conducted so that the contract vessels M/V Imua and M/V Kahana II may enter PMNM for Midway Atoll resupply, FWS eradication projects and to deploy monk seal field camp researchers into the Monument.



Images: (Left) Classroom sessions focusing on ship diving hazards and risk assessment parameters; (Middle) Divers Brian Hauk, Kim Fuller and Lizzy Monaghan conducting buddy checks prior to entering water (photo: Jesse Boord-DAR); (Right) DAR Hull Fouling and Ballast Water Coordinator Lizzy Monaghan inspecting the bow thruster of the M/V Kahana II to assess hotspot niche areas for alien species prior to their entry to PMNM (photos: Brian Hauk)

PMNM Research Cruise Departs for NWHI

On July 3, a PMNM research cruise on the chartered 220 ft. *Kahana II* sailed from Pearl Harbor. PMNM's Resource Protection Specialist, Brian Hauk, is the Chief Scientist. The primary mission is to study a recently discovered, fast-growing alga, *Chondria tumulosa*, that has become invasive and is overgrowing some of the most pristine coral reefs in PMNM. The Kahana will spend 25 days at sea, focusing on the algal outbreak at Manawai (Pearl and Hermes Atoll), but will also visit Kuaihelani (Midway Atoll), where the invasive alga was detected in 2021. The scientific team includes researchers and projects from ONMS, the State of Hawai'i DLNR, the University of Hawai'i at Mānoa, the University of Hawai'i Maui College, the College of Charleston, the Virginia Institute of Marine Science, and the University of Alabama at Birmingham. Multiple lines of research will be conducted, including visual surveys and transects, eDNA surveys, remote sensing surveys, stable isotope research, and oceanographic research looking to understand the abiotic factors that may be driving these outbreaks.



PMNM's scientific team in front of M/V Kahana II, just prior to departure. Photo: Travis Counsell.

Agency Coordination

PMNM Hollings Scholar Wins Best Research Presentation Award

On April 14, PMNM 2022 Hollings Scholar Caroline Edmonds won the Best Undergraduate Research Presentation award at the University of Hawai'i's 47th Annual Tester Memorial Symposium. Presentations of original research by undergraduate and graduate students in the natural sciences are judged on the quality, originality, and importance of research. PMNM research ecologist Randy Kosaki was Ms. Edmonds' Hollings mentor.



PMNM Hollings Scholar Caroline Edmonds gives her award-winning presentation on deep-sea fauna of Pacific seamounts at the 47th annual Tester Memorial Symposium (Photo: University of Hawai'i)

Merrie Monarch Festival Week Partnership Events with the Office of Hawaiian Affairs April 12-15th was a big week in Hilo with the 60th Annual Merrie Monarch Festival attracting thousands of hula practitioners, competitors and fans from around the world, and providing a showcase for cultural artisans from across the Pacific to sell and highlight their works. At Mokupāpapa Discovery Center, PMNM partnered with monument co-trustee Office of Hawaiian Affairs to host seven cultural workshops and panel discussions on topics ranging from the history of King Kalākaua and his advocacy for hula, to lauhala (a local reedy plant) bracelet weaving, to hula workshops and more. The events were very well attended with several hundred in-person and virtual attendees. The panel discussions were live broadcast with the technical assistance of the Hilo High Vikings KVIKS Media Group.





Photo:(Top) Ulana Lauhala workshop at Mokupāpapa in partnership with the Office of Hawaiian Affairs and 'Aha Puhala O Puna. Lauhala is a local plant whose leaves are dried and used for weaving various cultural and decorative items like floor mats, baskets, and jewelry. (Bottom) Kumu Hula Kaenaaloha Hopkins teaches a hula workshop in partnership with the Office of Hawaiian Affairs at Mokupāpapa. (Photos: Andy Collins).

PMNM and Hawai'i Division of Aquatic Resources Provide Outreach on Sanctuary Designation

From June 27-29, staff from Papahānaumokuākea and Hawaii's Division of Aquatic Resources provided information on the national marine sanctuary designation process. As part of the 40th Annual Hawai'i Conservation Conference, staff supported an outreach table and two poster sessions for over 1,200 participants in attendance, sharing information on sanctuary designation and the upcoming public comment period.



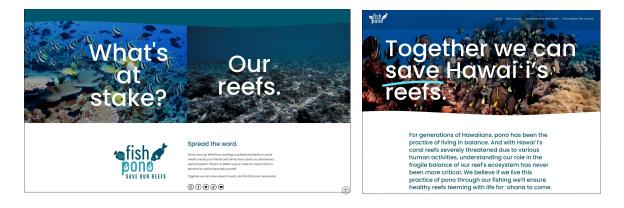
Hawai'i DAR representative Ryan Okano and Eric Roberts during a poster session (photo credit: NOAA)



PMNM Policy and Evaluation Specialist Dr. Alyssa Miller manning the sanctuary designation outreach table (photo: NOAA)

PMNM RAC Member Initiates "Fish Pono" Responsible Fishing Campaign

On July 3, PMNM Advisory Council member Dr. Mark Hixon kicked off the "Fish Pono" campaign, encouraging ocean users to fish responsibly, and to understand the link between healthy populations of herbivorous fishes and healthy coral reefs. For generations of Hawaiians, pono has been the practice of living in balance. With Hawai'i's reefs threatened by climate change, the role of herbivores as the "lawnmowers of the reef" is ever more important in terms of keeping compromised reefs clean so that new coral recruits can take settle and grow. The "Fish Pono" campaign features TV, radio, and social media PSAs showcasing well-known local watermen/women, including Master Navigator Nainoa Thompson, champion spearfisher Kimi Werner, champion surfer and water safety expert Brian Keaulana, bodysurfing champion Mark Cunningham, and PMNM research ecologist Randy Kosaki. Over the next week, Kosaki will also be interviewed on multiple morning and evening news shows, and on Hawai'i Public Radio in support of "Fish Pono". For more information, visit the "Fish Pono" website at https://fishpono.org/.



"Fish Pono" web site includes links to informative videos and additional information on the role of herbivorous fishes in maintaining healthy coral reefs.