

**‘Aimalama: E Mauliauhonua – Readapting to Ancestral Knowledge for Survival**

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## ACKNOWLEDGEMENTS

First and foremost, we'd like to thank our ancestors who have instilled in us through DNA the ability to continue to persevere through adversity granting us strength and resiliency to meet challenges head on by guiding us with ancestral wisdom of survival. 'A'ohe kana mai o ka mahalo.

Secondly, we want to express our deepest gratitude to all the practitioners, community members, ethno-scientists, and volunteers who found 'Aimalama important enough to come to our gatherings, which took time away from subsistence and aloha 'āina resource management responsibilities to share their personal observations and stories. We are extremely humbled by the continued personal commitment each panelist makes towards the continuum and assurance that traditions will survive presently and will continue for our future generations. Those skills will inform us today on how we can be prepared with survival tools for the changes that are affecting our communities. Mahalo nui.

Finally, we'd like to thank the many private, non-government, and governmental organizations, agencies, businesses, educational institutes and leaders who believed and supported the mission of 'Aimalama: Pacific Peoples' Lunar Conference On Climate Change. Your support made the symposium and conference possible, which has brought about a significant movement towards preparing our communities of Hawai'i for readapting to the changing climate. Mahalo a nui loa.

## INTRODUCTION

On July 17-20, 2012 a symposium was held by the First Stewards: Coastal Peoples Address Climate Change at the Smithsonian's National Museum of the American Indian in Washington DC. It was the first symposium of its kind to talk about climate change and the impact it is having on the various indigenous communities' environments and practices. There were five panels consisting of indigenous and non-indigenous experts from the East and West Coasts of North America, the Great Lakes region, Alaska, the Pacific Islands, and the Gulf of Mexico. There were four individuals from indigenous communities located in Alaska, Texas, Arizona and Hawai'i, who provided a traditional tribal task of bearing witness to the proceedings of the Symposium. These witnesses were tasked to record what was shared at the Symposium and to amalgamate the information into a document. The witnesses were also tasked to return home and to bring awareness to their own indigenous communities regarding climate change. I served as the witness for the Pacific Islands and was profoundly moved by the information that was shared at the Symposium by all the panelists. My perspective on climate change became personal. I heard real time stories from the peoples who were being impacted environmentally, culturally, and spiritually by the effects of climate change. It was no longer an option to turn my head and think that climate change is not my problem. It is. Ua 'ikea. I heard, I saw, I felt.

Returning home to Hawai'i, a deep sense of responsibility came over me. As a Kaulana Mahina, Hawaiian lunar calendar, practitioner and a kilo that observes the phenological occurrences in the Hawaiian environment, combining daily environmental observations with the Kaulana Mahina was a natural and easy effort. I became driven to find others in the Hawaiian communities that were utilizing the Kaulana Mahina in their work and to teach others to utilize the Kaulana Mahina to track environmental norms and changes to prepare and adapt to those changes. 'Aimalama was born.

This paper is written as a documentation of bearing witness to the empowerment we can collectively have by engaging with each other and with our environment. Let us not wait for others to provide solutions that solve our problems. Let us uplift one another, bear witness and recognize the changes, and rely upon our ancestor's survival methodologies to adapt to those changes that are happening now to assure that our peoples and our practices will continue to exist in the future.

~ Kalei Nu'uhiwa

“So if the kanaka is defined by his environment, so a particular person wherever they are is defined by where they live, then his environment basically defines or dictates his practice, right? So if that’s the case, then his practice will have to evolve, it will have to adapt, it will have to transition as does his environment.”

Pua Lincoln-Mai‘elua  
Kānehūnāmoku Voyaging Academy, Kawaihae, Hawai‘i  
*Educators Panel*

## ‘AIMALAMA SYMPOSIUM

In 2013, a partnership was formed between Kalei Nu‘uhiwa a kilo and Kaulana Mahina practitioner, Olani Lilly of the Kama‘aha Education Initiative, Mālia Nobrega-Olivera of the Loli Aniau, Maka‘ala Aniau (LAMA) Climate Change, Climate Alert – Hawai‘inuiākea School of Hawaiian Knowledge – UH Mānoa and Mickey Huihui also of LAMA– UH Mānoa. Each partner represented different Hawaiian communities involved with the revival of traditional Hawaiian educational pedagogies. The partners reached out into their own communities seeking out experts, practitioners and scientists to find interested individuals who might want to revive the Kaulana Mahina as an educational, resource management and climate change tool. A few preliminary meetings were held with the partners and community individuals. The decision to hold a symposium was made and the term ‘Aimalama was chosen to represent the combined Hawaiian practices of the Kaulana Mahina, kilo (environmental observation) and trend prognosticator and survival adaptation. ‘Ai generally means food, but is also a term that means to rule over, to enjoy the privileges of or to control responsibilities. The term malama generally means the moon, the light of the moon or the Hawaiian lunar months. Therefore, we collectively chose the term ‘aimalama to represent the mission of the partners and individuals who are trying to revive and enjoy the privileges of living in the season with the natural cycles of the environment, track natural occurrences around us by the lunar cycles and control the human responses to a changing climate with the intent of surviving. Another goal was to share the ‘Aimalama methodology and the findings to a global audience. The group decided that the International Union of Conservation of Nature (IUCN) World Conservation Congress, the world largest conservation event, held every four years, would be one of the ideal opportunities to share ‘he world with the world since Honolulu, Hawai‘i was selected to be the host in September 2016. An additional opportunity also includes the upcoming United Nations Convention on Biological Diversity (CBD) thirteenth meeting of the Conference of the Parties (COP) that will be held in Cancun, Mexico in December 2016.

### *Gathering Kaulana Mahina Practitioners*

A call went out to the people of Hawai‘i actively reviving and reconnecting to the Kaulana Mahina wisdom with their daily restoration practices. These practitioners were learning how to efficiently use the lunar calendar practices to restore knowledge of productive agriculture, marine resource management, biodynamic farming and other daily practices that provide sustenance for the health and wellbeing of their communities.

Identified community members from 6 of the 8 major islands responded and gathered for a weekend retreat on O‘ahu.

The community individuals that came to the symposium included kūpuna,<sup>5</sup> government resource managers,<sup>6</sup> managers of private land, NGOs, traditional farmers, traditional fishermen, traditional healers, traditional celestial navigators, Hawaiian business owners, fishpond managers, scientists, and educators from Hawaiian focused charter schools, Hawaiian Immersion programs, Community Colleges and the University of Hawai‘i Mānoa.

Everyone was divided into 4 major theme groups. The first theme was Malama Kai, ocean management. This group included lawai‘a (fishermen), loko i‘a (fishpond), konohiki (marine management) and wa‘a kaulua (ocean navigation). The second theme was Malama ‘Āina, land management. This group included mahi‘ai (farmers), lā‘au lapa‘au (herbalist and healers), hana pa‘akai (salt farmers), kahu ‘ai (food preparers), konohiki ‘āina (private and government land managers) and mea ho‘okanu (forest restoration). The third theme was Ho‘ona‘auao, educators. This group included teachers from home schools, charter schools, Department of Education, community colleges, University professors, small businesses, federal and state government programs and traditional Hawaiian practitioners. The fourth and final group included was the organizations involved with climate change initiatives and outreach.

Each group took turns at presenting and showcasing the kinds of work they were doing with the Kaulana Mahina. Some individuals were just starting to incorporate the Kaulana Mahina practices into their daily observations and work plans. Other individuals sort of incorporated some Kaulana Mahina practices into their work or restoration work with the intention of increasing more but didn’t know how. The final group, were those individuals who were actively and innovatively utilizing the Kaulana Mahina practices daily with everything from work plans, tidal and environmental activities, and seasonal gatherings to staff meetings, commencement or completion of work projects, as well as adaptive precautionary measures for climate change.

The end result of the gathering was to plan for a larger conference. The goals and objectives were to teach people about the Kaulana Mahina, to share tools to create a baseline of their immediate community and begin monitoring the changes, to teach people how to recognize the changes that are occurring so that long term mitigation measures to adapt and prepare for the changes can transpire. The movement would become a Hawai‘i-based action where communities can address human lifestyle changes to prepare for any future changes. One of the intent and outcomes is to make small changes every day evolving the “norm.” The hopeful outcome would be to empower communities with traditional tools for survival.

The final intended outcome was to invite other island peoples of Oceania to the conference to share their lunar practices and climate change adaptation strategies with those who attended the conference. This would provide an opportunity for innovative initiatives for community preparation.

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<sup>5</sup> Generally, kūpuna means elder. However, in its modern context, kūpuna usually means a Hawaiian elder who is an expert in traditional Hawaiian practices and is often a leader in their community to who is sought for their knowledge.

<sup>6</sup> Kaho‘olawe Island Reserve Commission, Ocean Resource Management team

The participants of ‘Aimalama symposium agreed to push towards finding support for the ‘Aimalama Conference in 2015 and also the group envisioned that a paper regarding the ‘Aimalama movement would be published and presented at global meetings such as the 2016 United Nations of Climate Change Framework Convention on Climate Change (UNFCCC),<sup>7</sup> the IUCN World Conservation Congress scheduled to be held in Honolulu on 2016, and the United Nations Convention on Biological Diversity (CBD).<sup>8</sup> The ‘Aimalama Symposium was a success. To review more information and details about the symposium report generated by this symposium please visit the resource tab on the ‘Aimalama website- [www.aimalama.org](http://www.aimalama.org)

“Our ancestors put the calendar together because they understood that ... it was a way for them to survive. It was a survival technique. And the survival technique is to look at the things around you that’s going to help you survive and one of the things that helped them survive is the moon and their relationship to the moon...”

Dr. Pualani Kanaka‘ole Kanahahele  
Reknown Hawaiian Expert and Researcher, Hilo, Hawai‘i  
*Keynote Opening*

## WHY THE KAULANA MAHINA?

The invited group of practitioners gathered together to begin looking at the Kaulana Mahina methodologies that they currently utilize to enhance fishing, farming, healing, education, and resource management practices. The Kaulana Mahina can be a proficient tool to note a baseline of a healthy environment, track changes in the environment, note seasonality, migrational patterns and weather. Part of recording the daily environmental activities is to identify any natural indicators that convey environmental degradation due to climate change.

Unlike the Western calendar, the Kaulana Mahina follows the natural cycle of the moon. There are 30 recognized phases that traditionally were given names. Each name lends a clue to the activities that should or shouldn’t happen in order to achieve the best productivity possible with limited amount of effort exerted for the desired outcome. The practices affiliated with each moon phase varied from district to district due to topography and location, mountains versus beaches, valleys versus plains, ridges versus coastlines. The Kaulana Mahina methodology was truly place based and developed by the families and communities who resided in their areas for multiple generations.

The Kaulana Mahina is a proficient methodology that has been practiced for many generations. The thirty-phase cycle makes one traditional lunar month.<sup>9</sup> Each lunar month has environmental expectations associated with it.<sup>10</sup> The environmental expectations include various observed activities and cycles in the atmosphere, earth, ocean and living organisms specific to a district or island.

<sup>7</sup> An international environmental treaty that was opened for signature at the Earth Summit held in Rio De Janeiro in 1992 and came into force in 1994 (<http://unfccc.int>).

<sup>8</sup> A [multilateral treaty](#) that has three main goals: 1. Conservation of biological diversity; 2. Sustainable use of its components; and 3. Fair and equitable sharing of benefits arising from genetic resources. (<http://cbd.int>)

<sup>9</sup> Poepoe, Joseph M. *Ka Nai Aupuni*. 1906.

<sup>10</sup> Manuokekula, G.M. *Hoku o ka Pakipika*. 1861

Tracking the moon and paying attention to the environmental happenings around you is a traditional practice called kilo. Kāhuna kilo were keen observers. They noted environmental activities around them through keen observation and were able to study the daily activities and trends. Eventually the kāhuna kilo could make predictions based on the collected information observed to guide the chiefs and communities towards the best practices for survival. The combination of the Kaulana Mahina, kilo, trend prognostication and implementation of adaptation assisted with the decision-making that allowed for the best survival techniques within each district. We decided that the combination of these practices should be called, ‘Aimalama.

Educators shared innovative and adaptive tools at the the ‘Aimalama symposium like creating moon journals, moon observation sheets, moon planners and other methods to assist people with recording environmental activities. After a year or so of documenting events such as the weather, types of clouds, behavior of animals, birds, fish or plants, tidal movement, daily temperature and the shape of the moon from one phase to the next, correlations between all these activities can start and the development of a notable baseline of the combined recordation of data arises. Over time, patterns and trends will emerge that will inform the recorder on the activities that are associated with each moon phase, monthly expectations, and seasons. This process makes it easier to see the small changes that are occurring and helps to identify the natural indicators that are pertinent for timing cycles and seasons. Traditionally, this kind of information was recorded in chants, proverbs and stories. Therefore, baselines collected today can be compared to those that have been recorded historically, providing insight on any changes and adaptations utilized historically to survive. Communities can prepare and be empowered to do so based on their own kilo skills and data.

Frankly, waiting for the local or federal government to come and rescue us from climate change is not going to happen. For that reason, the ‘Aimalama practices can be the process in which environmental baselines are recognized and established, trends can be recognized and identified, and changes can be noted and recorded so that our own communities can initiate the best adaptive action.

“My mirror is the universe, the heavens, the ocean. It mirrors me. We are the families of the sea, papa kai ‘ohana. We have no fear.”

~Leslie Kuloloio  
Kupuna, Maui  
*Mahi I‘a Panel*

#### ‘AIMALAMA CONFERENCE

Upon the agreement that a conference would be the best way to draw people into the movement, committees were formed led basically by passionate Hawaiian women. A decision was made to keep the conference as green as possible. Conference registration, Program scheduling, sponsor adds, and surveys were all created online and could be downloaded onto a phone, iPad or laptop. Also, the food that was to be served throughout the conference was also going to be catered by local vendors. Most of the catering businesses were owned by native Hawaiian families and were committed to buy almost all of their wares and products locally as well. Fifty/Fifty water flasks were to be distributed



to all the participants to reduce paper cup consumption throughout the conference. Biodegradable cutlery and dinnerware were to be used at every meal.

Another adaptive measure to lessen our carbon footprint was to livestream our conference out to hubs that became satellite stations where people could gather to watch and participate in the conference. Participants from the outer islands across the state, nation and beyond were able to watch and join in on answering online surveys through a program called “Meeting Sift.”<sup>11</sup> Questions were to be asked on the main conference screen. Participants could answer electronically through smartphones, laptops, iPads or tablets. Responses were viewed on the screen in real time and provided immediate answers to every conference participant. The Meeting Sift app was to amalgamate the answers and could be seen as either a list, survey graph or visual word cloud.

Many of the participants of the ‘Aimalama Symposium would become members of the themed panels or kilo who moderated the panels. Six themed panels for the conference were created. Each panel would have a moderator called a kilo. The kilo chosen were to be experts in the themed panels who possess an understanding about the practices associated with the panels they moderated. The kilo’s task was to listen to the panel presentations and to choose highlights or notable observations pertinent to the ‘Aimalama methodology. At the end of the conference, the kilo were to report back to the conference participants about the important highlights noted during the presentations. Six panels were created, including Mahi I’a (Aquaculture), Mahi’ai (Agriculture), Ola (Birthing/Healing), Kumu A’o (Educators), Konohiki (Resource Managers) and Mea Hana (Lunar Tools). Every evening two presenters from Oceania would present about their own lunar calendar practices/restoration and climate change initiatives. The Oceania presenters came from three different districts of Aotearoa, Ha’apiti and Tahiti Iti of Tahiti, Yap, and the Cook Islands. Panel discussions at the conference featured over 30 Oceania practitioners who shared their expertise, encompassing both indigenous ancestral practice and modern innovation. Revered practitioners from across Oceania contributed to the information sharing, and similar themes emerged that underscored the common ground Oceanic people hold in their traditional practices.

Conference participants could choose one Huaka’i, or day visit to various sites practicing restoration or environmental work. Most of the panel presenters came from most of the huaka’i sites. Participants could further engage with the panel presenters to learn more about their work or about the Kaulana Mahina practices each site incorporated.

The final day of the conference was the kilo report of findings and observations, empirical data collection of environmental and climate change impact and solutions, and the beginning of creating some sort of app that would assist in the data collection and monitoring.

In September 2015, the ‘Aimalama Conference occurred on O‘ahu. The original goals were to create an app that would assist with the environmental monitoring of data collection and to publish a paper of the findings, highlighting the Kaulana Mahina methodologies utilized to identify the changes that are occurring in Oceania and the adaptive measures being innovatively created to intentionally prepare for the climate

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<sup>11</sup> A meeting collaboration platform that lets participants' use their smart devices to enhance collaboration and engagement in meetings. (<http://meetingsift.com>)

change. However, what organically unfolded during the conference were four major accomplishments that were driven by the participants. The first was the eagerness to learn about the Kaulana Mahina, the second was to identify the community leaders who were practicing the Kaulana Mahina methods into their work, the third was an interest in incorporating the ‘Aimalama practices into daily life and the fourth was to share their own environmental empirical data.

In terms of the community interest and the desire to incorporate the ‘Aimalama practices that was learned during the conference, the conference was a success. In terms of being a green event, it was successful because the only paper generated from the entire three day conference fit in half of a single plastic shopping bag.

“I like to think that fishponds are a response, or were created as a response, to a changing climate. Our climate has always been changing ~ maybe not as severe as it is currently, but we are evolving, and part of that restoration is, if you’re a lawai‘a teaching your ‘ohana, recording the data, using Kaulana Mahina as a moon to cause our people to pay attention, to restoring fishponds... They serve a function, they serve a purpose. I am most concerned about how we’re going to feed our community.”

Hi‘ilei Kawelo  
Paepae o He‘eia, Kāne‘ohe, O‘ahu  
*Kilo Panel*

## FINDINGS

Representing a variety of disciplines, panelists shared how they incorporated Kaulana Mahina and seasonal observation in their work, highlighting the critical role moon phases play in their practices. Uncle Mac Poepoe emphasized, “...a lot of things that we do with the moon, it all relates to all these different timings, its timing, and the moon is our best time keeper.”<sup>12</sup> Echoing this sentiment, Pualani Lincoln-Mai‘elua who sat on the Kumu A‘o Panel shared her application of Kaulana Mahina in her navigational practice, stating, “...one of the most effective ways to use the moon is for the measurement of time...we use the moon in the sense of timing our arrival, timing our departure...”<sup>13</sup> Ka‘iulani Odom who was the kilo for the Ola panel shared, “...we’re learning more about lā‘au and the potency of the plants on different moons and when to pick it.”<sup>14</sup> These modern-day applications of centuries-old wisdom was lauded time and again as a direct line to fully understanding and living harmoniously in our rapidly changing environments, regardless of the practice. Kihei Nahale-a shared, “And this moon calendar, using the philosophy of kapu and noa for us to focus on certain things ~ ‘āina, kānaka, leadership ~ hopefully will get us to that space.”<sup>15</sup>

As the conference focused on how Kaulana Mahina has historically informed particular practices on the ‘āina, the impact of **climate change** on our environments was a theme that presenters spoke to in relation to their practices. The unprecedented variations in weather and climate have effectively altered not only the environment

<sup>12</sup> Revered Moloka‘i kupuna, an expert fisherman and educator.

<sup>13</sup> A captain on the sailing canoe Kānehūnāmoku and Papahulilani practitioner.

<sup>14</sup> ROOTS Program Director for Kōkua Kalihi Valley. Roots is an ‘āina to table initiative that aims to strengthen family through the growing and sharing of food.

<sup>15</sup> Director of Papahana Kuaola’s Kupualau.

around them, but how they interact with it as well. Pualani Lincoln-Mai‘elua shared “(climate change) changes the way we can engage in our practice... we’re unable to engage in our practice to its fullest with the knowledge we have currently, so we have to re-learn and re-build our knowledge systems in order to engage in them.”<sup>16</sup> Keola Chan who sat on the Ola panel speculated that the changing climate is the result of our losing real connection to place, stating, “...it’s changing because the k̄naka is not participating at what used to be. The kapus are no longer in place that regulate the changing of what is happening...”<sup>17</sup> Makahiapo Cashman who sat on the Mahi‘ai panel observes, “...we’re noticing a lot of different (things), a lot of things are happening and not happening anymore...h̄ih̄iwai we don’t see anymore in Punalu‘u. We used to see it a lot maybe 10 years ago. The streams don’t flash as much.”<sup>18</sup> Ānuenuē Pūnua noted, “...(the) migration of our pūpū kani‘oi. All of the places that they were living in, now they’re going to look for shade...they’re migrating from one part of the mountain to the other part of the mountain.”<sup>19</sup> These and other examples in environmental shifts as a result of climate change is a daunting prelude for the fate of k̄naka as well, as Ānuenuē continues, “that really is us too ~ where do WE migrate? Where are those places that we start to migrate to find that shade or find those places that are k̄ipuka?”<sup>20</sup>

A striking commonality echoed across all presentations was the need for communities to reconnect to **‘ike kūpuna**.<sup>21</sup> Examples of **sybiosis in nature**, including the study of phenology and its cyclical and seasonal natural phenomena, the traditional sustainability concept of mālama ‘āina, and other ancestral ways of knowing linked directly to the environment, were continuously shared by the featured panelists, and it is this wisdom that is a key factor in understanding and adaptation. Co-founder of ‘Aimalama and Keynote Speaker Kalei Nu‘uhiwa notes, “Everyone who spoke all referenced back to (their) kūpuna or their parents as a way to validate and authenticate what it was that they had somehow learned to incorporate into their practice...that was a methodology that we needed to note...that’s how we say, yes, it’s real.” Keola Chan shared that, “Our kūpuna understood relationships at a much higher level, and they relied on those relationships. They understood the personalities of those heavens, and they categorized it, and they had that relationship. And this is what we’re doing...reconnecting to those relationships, k̄naka to our heavens, but more importantly too is kanaka to kanaka and k̄naka to our ‘āina.” Uncle Mac Poepoe echoed this, saying, “In measuring how our ecosystem functions, the people in ancient societies developed a system based on observation, defining patterns and cycles that occurred during different seasons and phases of the moon. Their keen observations helped them to understand these natural processes, and how to utilize this tool in planning in their activities.” Leslie Kuloloio echoed, “EVERYTHING depends on each other,”<sup>22</sup> recounting the relationship

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<sup>16</sup> Regarding celestial navigation.

<sup>17</sup> Lomi & Lā‘au Lapa‘au Healing practitioner.

<sup>18</sup> Director of Ka Papa Lo‘i o Kānewai.

<sup>19</sup> Served as the Kilo for the Konohiki Land Manager Panel.

<sup>20</sup> K̄ipuka - Variation or change of form (puka, hole), as a calm place in a high sea, deep place in a shoal, opening in a forest, openings in cloud formations, and especially a clear place or oasis within a lava bed where there may be vegetation.

<sup>21</sup> Ancestral knowledge.

<sup>22</sup> Revered Maui kupuna, expert fisherman & shoreline gatherer

between earth and sky and plants and animals, and how their interdependence is inseparable.

While revisiting ancestral knowledge was a repeated theme, so too was the need to **adapt this ‘ike** to reflect the changes currently happening in our environments. While the continued passing and sharing of ancestral knowledge and practice to inform climate change solutions is critical, there is also the need to examine how climate-related changes are influencing the traditional practices themselves. Indigenous communities are finding that they must realign and adapt the recommended practices that correlate with natural indicators (moon phases, seasonal changes) based on climate-related variations occurring in real time, and that some ancestral wisdom and clues may not necessarily apply anymore. How does the past inform the present and future, and how is the present, and anticipated future trends, informing traditional practice today? Bonnie Kahape‘a-Tanner, shared, “We actually have to engage in that practice everyday so that we can start to understand these climatic changes that are happening, because the directions that are left to us in our oli, our directions that are left to us in our navigational sea roads, we cannot use those old ones anymore...in order for us to create those new pathways, we actually have to engage daily as our kūpuna did in the environment.”<sup>23</sup> By doing so, Pua Lincoln-Mai‘elua asserts, “...you can re-adapt and re-learn and create a new set of environmental indicators.”

Some discussion focused on the **cyclical nature of climate change**, and though changes have been occurring at an alarming rate, shifts in the earth’s climate have happened before, and will likely happen again in the future. Uncle Mac Poepoe stated, “...now we faced with things we surprised at. Global warming, we get all this El Nino stuff going on. Actually, these events wen’ happen before. It just, surprise, never happen to us.” Hi‘ilei Kawelo who served as a kilo for the Mahi I‘a Panel, shared, “I like to think that fishponds are a response, or were created as a response, to a changing climate. Our climate has always been changing ~ maybe not as severe as it is currently, but we are evolving...”<sup>24</sup> A part of that evolution is re-calibrating how we engage with our environment, and as Pualani Lincoln-Mai‘elua notes, “...our environment, the climate of our environment is changing drastically, therefore how I engage in my practice has to evolve with that.”

A big part of this adaptation strategy begins with **kilo**, but it is only with consistent environmental observation and forecast can a new baseline be established. In an effort to be consistent, Pualani continues “We’re unable to engage in our practice to its fullest with the knowledge we have currently, so we have to re-learn and re-build our knowledge systems in order to engage in them...as a family we have dedicated ourselves to our practice through truly knowing our environments or re-learning about our environments, knowing its elements but calling them by their names as well, creating like a personal relationship with them.” Through reaffirming a source kinship with our environment, as Kihei Nahale-a shared, individual and community practices can be built and strengthened while climatic changes occur. Stacy Sproat-Beck, Executive Director at the Waipā Foundation on Kaua‘i, echoes this mana‘o, stating, “We realize and understand and know that by understanding the cyclical changes and the seasonal changes is that we are more a part of the ‘āina, and that is so important.”

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<sup>23</sup> Captain of Kānehūnāmoku and open ocean navigator

<sup>24</sup> Executive Director at Paepae o He‘eia fishpond

**Education**, both in the community and in the schools, was identified as a primary means to reestablishing healthy environments, reconnecting to ancestral knowledge, and becoming participants in adaptive change. Allie & Trevor Atkins from Waiākea, Hawai‘i, both featured panelists on the Educator’s Panel, provided incredible insight on how dissemination of ‘ike kūpuna and its modern day applications is a key ingredient in surviving climate change. Allie shared that guiding young people to be thoughtful kilo, incorporating all senses in their observations, is a means to secure survival. Trevor, a kumu at Hālau Kū Māna Public Charter School, underscored this sentiment, citing the need to “...make sure that their data can connect to the next class and the next class and the next year and the next generation, so that the data that their taking isn’t only relevant to them, but it’s relevant to everybody.” Pualani Lincoln-Ma‘ielua, who is also a kumu at Hawai‘i Community College’s Pālanui program, shared that she is “able to kind of build more of an awareness, build up their observation skills, and most importantly, build their relationship to place.” Bonnie Kahape‘a-Tanner articulated this teacher-learner pipeline, saying, “A lot of us have been very fortunate to have some of the most exceptional teachers I think that have walked the planet, and so we’re very thankful for that. And now we take that kuleana very seriously to carry that forward and hopefully create more new exceptional teachers.”

On the last day of the conference, participants got into groups to share and record climate observations they’ve been seeing in their communities and also how those observed climate activities were affecting their practices or daily lives. Fueled by the weekend’s activities, the participants thoughtfully responded and added their collective thoughts to the data. Currently that data is being analyzed. Perhaps several reports will be generated upon the completion of the analysis. One of the outstanding messages that came from the ‘Aimalama Conference was that adapting to climate change means that it is our duty as humans to adapt to the environmental change and not the other way around where humans are trying to change the environment to satisfy our own human unsustainable behaviors. Change the human attitude to change the human action.

“So the practitioners and the experts in their field are really the teachers.”

Aliie Atkins  
Hawai‘i Community College, Hilo, Hawai‘i  
*Educators Panel*

## CONCLUSIONS

Indigenous peoples have been surviving and adapting to their environments for many generations, and have accumulated valuable empirical data that has informed and guided the adaptations necessary to survive. The ‘Aimalama Conference sought to provide Hawai‘i communities with an opportunity to provide information that would assist in the creation of an app to track environmental changes occurring to prepare for the impending changes to the climate. Instead, the conference successfully brought together for the first time various types of communities interested in utilizing the Kaulana Mahina.

Through the Kaulana Mahina Tools Panel, Roxane Stewart emphasized that learning techniques to actively kilo in various habitats is an excellent practice for

effectively monitoring and mitigating unprecedented climate change.<sup>25</sup> Participants were introduced to the leaders who were actively in their communities incorporating Kaulana Mahina practices into their work. Conference participants were able to link up with those identified leaders at their sites through the huaka‘i and immerse themselves into the sustainable practices. The hands-on experience brought a deeper understanding of the ‘Aimalama methodologies.

Hearing and seeing what the people were doing in Hawai‘i and Oceania initiated aspirations to start a movement towards building a baseline to know your own environment intimately. A call to action was another outcome urging participants to take action in their own communities towards sustainable systems, attitudes and practices with the Kaulana Mahina as the guiding force

### *Next Steps*

The ‘Aimalama founders recognized shortly after the conference that rural communities had wanted to participate but were unable to afford the costs for the travel and conference fees. These rural communities are natural indicators to the changing climate as they are the ones affected immediately by the environmental events. For that reason, our group has decided that ‘Aimalama should go mobile by providing training and workshops to teach people how to become active kilo (*environmental observers and forecasters*) through the Kaulana Mahina and to either connect them to project sites in their communities or to become a project site to teach and train their own communities. Their project sites will ultimately serve as repositories of this community-created and controlled environmental information. Currently three communities have been targeted as potential sites. Action steps: 1) Train more people in communities that already are considered resources, 2) Generate and publish reports with the conference findings, & 3) Create a monitoring app to assist communities with collection and recordation of their own data so that they can be empowered to make changes and become their own resource managers.

Finally, the ‘Aimalama founders will be conducting one of the half-day conservation campus trainings at the International Union for Conservation of Nature World Conservation Conference (IUCN WCC) in Hawai‘i in September 2016. It is our hope that we will be able to share our findings and indigenous methodologies to a global audience so that communities, families and individuals can begin to and continue to implement the Kaulana Mahina methodologies to be beacons of hope for the world.

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<sup>25</sup> Marine scientist and Papakū Makawalu resource teacher for Ka ‘Umeke Ka‘eo Immersion Charter School.

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## Online Resources:

‘Aimalama Conference Videos & Resources

[www.aimalama.org](http://www.aimalama.org)

‘Aimalama Symposium Report

<http://www.aimalama.org/wp-content/uploads/Aimalama2014-FINAL.pdf>

Data gathered from 2015 Hawai‘i Conservation Conference - ‘Aimalama Workshop

[http://www.aimalama.org/wp-content/uploads/Aimalama\\_DocumentingChange.pdf](http://www.aimalama.org/wp-content/uploads/Aimalama_DocumentingChange.pdf)

[www.Ulukau.org](http://www.Ulukau.org)