

Building an Education Program to Support Positive Relationships Between Visitors, Kama‘āina, and the Environment in Hawai‘i

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ABSTRACT: Collaborative programs are essential to fully engage and educate all who interact with the environment. Existing place-based programs targeting the care of Hawai‘i’s land and oceans rarely simultaneously engage the tourism industry and local communities. To address this gap, researchers from the Hawai‘i Institute of Marine Biology developed a program with the Kahala Hotel & Resort (KHR) and regional non-profits that participated and provided further guidance. The main objective for *Encouraging Visitors to Mālama I Ke Kai* (take care of the ocean) was to help visitors better understand how to tread lightly on Hawai‘i’s environment while also building a bridge with *kama‘āina* (residents). Activities were focused on place-based education and active learning. The program included four main components: 1) Touch Tank and Coral Education events, 2) *Keiki* (child) Art, 3) Sunset Seminar Series, and 4) Introductory Place-Based Educational Video. The program successfully engaged over 3,000 participants from a full range of ages, but some divergence in the activities attended by visitors and *kama‘āina* was observed. The most attended activity had high visibility with no reservation requirements. Our results showed substantial interest in this type of program and can provide a framework for other collaborative educational programs that target *kama‘āina*, visitors, and the environment.

INTRODUCTION

In order to communicate research findings in an accurate way that is accessible, relatable, and actionable to the general public (Coleman et al., 2019), researchers have been turning to education and outreach programs in E-STEM (Environment, Science, Technology, Engineering, and Math). E-STEM integrates STEM education with environmental topics to find innovative solutions to current environmental issues (Koculu and Girgin, 2022; Tillinghast et al., 2020; Helvacı and Helvacı, 2019). While E-STEM programs are offered by schools, state and federal agencies, non-profits, and community organizations in Hawai‘i (Blaich, 2003; Lemus, 2018; Furuto, 2015; Division of Aquatic Resources, 2024), there are few programs that also incorporate the visitor industry. This project addressed the lack of E-STEM outreach and education programs for Hawai‘i’s visitor in-

dustry by utilizing place-based principles to teach about the importance of Hawai‘i’s natural resources so visitors, in turn, may help to protect the environment. Additionally, this project aimed to enhance relationships between visitors and *kama‘āina* (one born in a place; see Table 4 for glossary of words in *‘Ōlelo Hawai‘i*) by engaging everyone together.

A Changing Relationship Between People and Land. For nearly 2,000 years prior to western contact, Hawaiian civilizations used traditional knowledge and management practices to develop intricate social-cultural ecological (SCE) systems that fostered “sustainable use” of natural resources (Poepoe, 2003; Gonschor and Beamer, 2014). The contact of westerners, followed by the overthrow of the Hawaiian monarchy in 1893, created the concept of private own-

ership rather than communal lands (Winter et al., 2018), which changed the way people in Hawai'i interacted with *'āina* (land) (Montgomery and Vaughan, 2018). Traditional resource management practices that were once intimate and reciprocal were restricted and became less of a priority (Gregg et al., 2015). As Hawai'i continued to be developed and advertised as a vacation “paradise,” the tourism industry co-evolved, supporting around a quarter of Hawai'i's economy by 2019 (Wianecki, 2020). However, Hawai'i's economic dependence on tourism has been considered by many *kama'āina* as a one-sided relationship, where the industry and/or visitor takes from the people and environment while giving little in return (Lin et al., 2023). There has been a recent shift to explore responsible activities that better support Hawai'i's environment and people in a reciprocal relationship as part of the tourism industry, with an emphasis on the importance of stewarding a healthier ocean.

Cultural & Ecological Values of Hawaiian Coral Reef Ecosystems. Healthy coral reef habitats are central to an abundant and thriving Hawaiian ecosystem (Fukunaga et al., 2020). Coral reefs act as Hawai'i's first defense from storms and wave damage (Burke and Spalding, 2022), are a keystone species, provide food, and are an important part of Hawaiian culture (Gregg et al., 2015). The Hawaiian creation story, the *Kumulipo*, identifies the coral polyp as the first organism in the universe (Luomala and Beckwith, 1951; Narchi and Price, 2015). However, coral reef ecosystems are at risk from a variety of anthropogenic stressors, both locally and globally, and are rapidly declining around the world (Lamont et al., 2022). This decline in reef health endangers Hawai'i's environmental, social, and cultural foundations (Narchi and Price, 2015). Reef degradation is also a sociocultural issue that inhibits *Kānaka Maoli* (indigenous people to Hawai'i; Native Hawaiian) access to practice cultural activities centered around a healthy ocean (Winter et al., 2018). The large number of visitors to Hawai'i supported by the tourism industry exacerbates many negative local stressors imposed on Hawai'i's marine ecosystems (Wianecki, 2020).

Tourism in Hawai'i: The Past and Future. Before 2020, 10.4 million visitors traveled to the Hawaiian Islands annually (Hawai'i Tourism Authority, 2020). Though tourism has been a primary economic driver for Hawai'i, in spring 2020, the Hawai'i Tourism Authority (HTA) reported a 98.2% decrease in visitor arrivals to the Hawaiian Islands in response to the COVID-19 pandemic (Hawai'i Tourism Authority, 2020). Although it negatively impacted Hawai'i's economy, having fewer visitors resulted in reported striking positive changes to the environment (Rodgers et al., 2023). Places that had previously been highly trafficked were given a period of respite, which led to many people thinking critically about next steps to support a more positive outlook for Ha-

wai'i's tourism industry once visitors returned (Lin et al., 2023).

To support a more reciprocal industry, HTA emphasized the concept of “Eco-Tourism” and “Regenerative Tourism” in their strategic plan (Hawai'i Community Foundation and Hawai'i Tourism Authority, 2024) by creating a “Mālama Hawai'i” program that provides incentives for visitors to participate in environmental stewardship efforts and funds local environmental organizations. The goal of regenerative tourism is to promote visitor pro-environmental behaviors that support *kama'āina* quality of life (Hui et al., 2023) by including educational resources to visitors on how to minimize their impacts on the environment and local culture. However, there are only a few educational activities offered through HTA's website, and they require visitors to actively seek out an experience. Some hotels offer activities, but almost all require a fee to participate. The program we designed was intended to bring multiple forms of environmental education to guests in an accessible way so that anyone could participate. Our program is the first to be completely free of charge for all, entirely hosted on hotel property, open for both visitor and *kama'āina* participation, and co-developed by marine scientists and local environmental non-profits.

Value in Combining Research & Outreach. There is growing recognition of the value of scientists conducting outreach and education in their areas of research (Kūlana Noi'i Working Group, 2021). It is important for researchers to proactively interact with the community because community problems often require community solutions. Since scientific research can sometimes be difficult to understand, it is helpful for researchers to create a dialogue with the community to clearly communicate research findings (Kūlana Noi'i Working Group, 2021; Chung-Do et al., 2019). Furthermore, collaborative partnerships are important for restoring and managing Hawaiian social-ecological systems (Winter et al., 2020). It is necessary for researchers to interact with various types of knowledge, especially in Hawai'i (Levine and Feinholz, 2015), where local knowledge systems are valuable resources when considering community resilience to climate and environmental changes (McMillen et al., 2017). Coral reef restoration, for example, requires community dialogue and action to scale up (Lamont et al., 2022). However, to get involved with environmental stewardship efforts alongside researchers, community members must have access to educational resources, motivation to get involved, and a reason to commit long-term.

Experiential Learning. Research has shown that hands-on learning allows people to create lasting knowledge through sensory engagement (Finch et al., 2015). In ocean sciences, learning experiences tied to emotional moments are catalysts

for developing interest in the field (Kisiel et al., 2012). Offering active experiences complemented by local knowledge may increase a sense of belonging to 'place' and encourage participants to deepen their relationship with Hawai'i whether they are *kama'āina* or visiting.

Environmental and Outdoor Education. As global urbanization continues to change human connection to nature, it is important that people in urban areas have meaningful experiences in the outdoors (Moseley et al., 2020). Outdoor education provides a learning environment outside of formal learning settings that can help create a more supportive place of learning (Kuo et al., 2022). Greener learning environments have been found to lower stress levels of students (Kuo et al., 2022), create a more interesting learning experience than the traditional academic classroom (Blaich, 2003), and help individuals build positive relationships with *'āina* that can be catalysts for developing interest in the natural world.

Program Components. While the tourism industry and the environment in Hawai'i were rebuilding and reshaping itself after initial COVID-19 shutdowns, the Coral Resilience Lab (CRL; researchers) at the Hawai'i Institute of Marine Biology (HIMB) launched the *Encouraging Visitors to Mālama I Ke Kai* (take care of the ocean) initiative with the goal of taking initial steps to improving relationships between *kama'āina*, tourists, and Hawai'i's natural resources. We aimed to encourage collaborative care for the local environment by using environmental and outdoor education to educate visitors on ways to take care of the ocean. While there are some programs that exist in Hawai'i to educate *kama'āina* with place-based information about Hawai'i's natural resources and how to take care of them, there are few resources for visitors that blend both *kama'āina* and visitors.

We followed the *'ōlelo no 'eau* (Hawaiian proverb), *ma ka hana ka 'ike* (through doing one learns; Pukui, 1983) as our guiding teaching method. Therefore, we designed activities for the *Encouraging Visitors to Mālama I Ke Kai* program that would incorporate active learning and experiences to engage participants (Figure 1). Since most peoples' connections with the land and ocean are based on their usage and relevance (Puniwai et al., 2016), we intentionally designed activities so that visitors and *kama'āina* could directly interact with Hawai'i's marine life, and thereby deepen their understanding and relationship with the ocean environment. We applied these concepts to the program components by placing coral reef education events outside and adjacent to the ocean, hosting seminars primarily at an outdoor venue, and incorporating small breaks in art classes for kids to go outside, be in nature, and even sometimes bring nature back into the classroom as inspiration. To remove financial barriers and encourage participation, all activities were free

of charge for *kama'āina* and included parking validation.

Below are brief descriptions of program intentions, which are described in greater detail in the methods section and in a separate Training Manual (Appendix A). The four main program components include the 1) Touch Tank and Coral Education Events, 2) Keiki Art, 3) Sunset Seminar Series, and 4) Introductory Place-Based Educational Video.

Touch Tank and Coral Education Events. The "Touch Tank and Coral Education" events were casual and designed to make topics of environmental stewardship personable and authentic while encouraging conversation between participants. These shore-based activities were not limited by in-water concerns such as swimming skill, comfort in the ocean, and liability. The goals of these events were to motivate individuals to be mindful of human impacts on reefs, better understand the laws in place to protect Hawai'i's native species, encourage individuals to build and strengthen their relationships with marine life, and help visitors understand that their actions at home impact other places, including Hawai'i.

Keiki Art. By offering ocean-centered art activities and lessons, we hoped to foster environmental stewardship in *keiki* (kids). The activity targeted a younger demographic to empower and teach them the importance of taking care of the earth (Jose et al., 2017). In response to rapid urbanization and dependencies on technology, people have been losing connection to "place" which leads to a loss of identity as part of the ecosystem (Moseley et al., 2020). Most of the participants in the "Keiki Art" program were under the age of 10 years old (Figure 2). While we recognize that one art class about why *kai* (ocean) and *'āina* (land) are important is not likely to change the trajectory of a *keiki*'s life, the goal is to help them understand the value of taking care of where they live and develop their sense of self and connection to where they come from. By repeating and incorporating these values regularly into the classroom routine, kids learned ways they could become stewards of the environment. The curriculum also touched on the importance of respectfully visiting other peoples' homes (i.e., travel destinations), which was intended to encourage respect for Hawai'i's environment for those visiting and foster a future relationship with the environment if they return to Hawai'i. The classes also provided free and accessible *keiki* care for local families.

Sunset Seminar Series. The "Sunset Seminar Series" was designed to build community and bring people together to learn about work being done around the island that supports Hawai'i's environment and people. This series of professional talks shared work from local graduate students, environmental, social, and cultural organizations, along with other professionals, covering a wide range of topics from

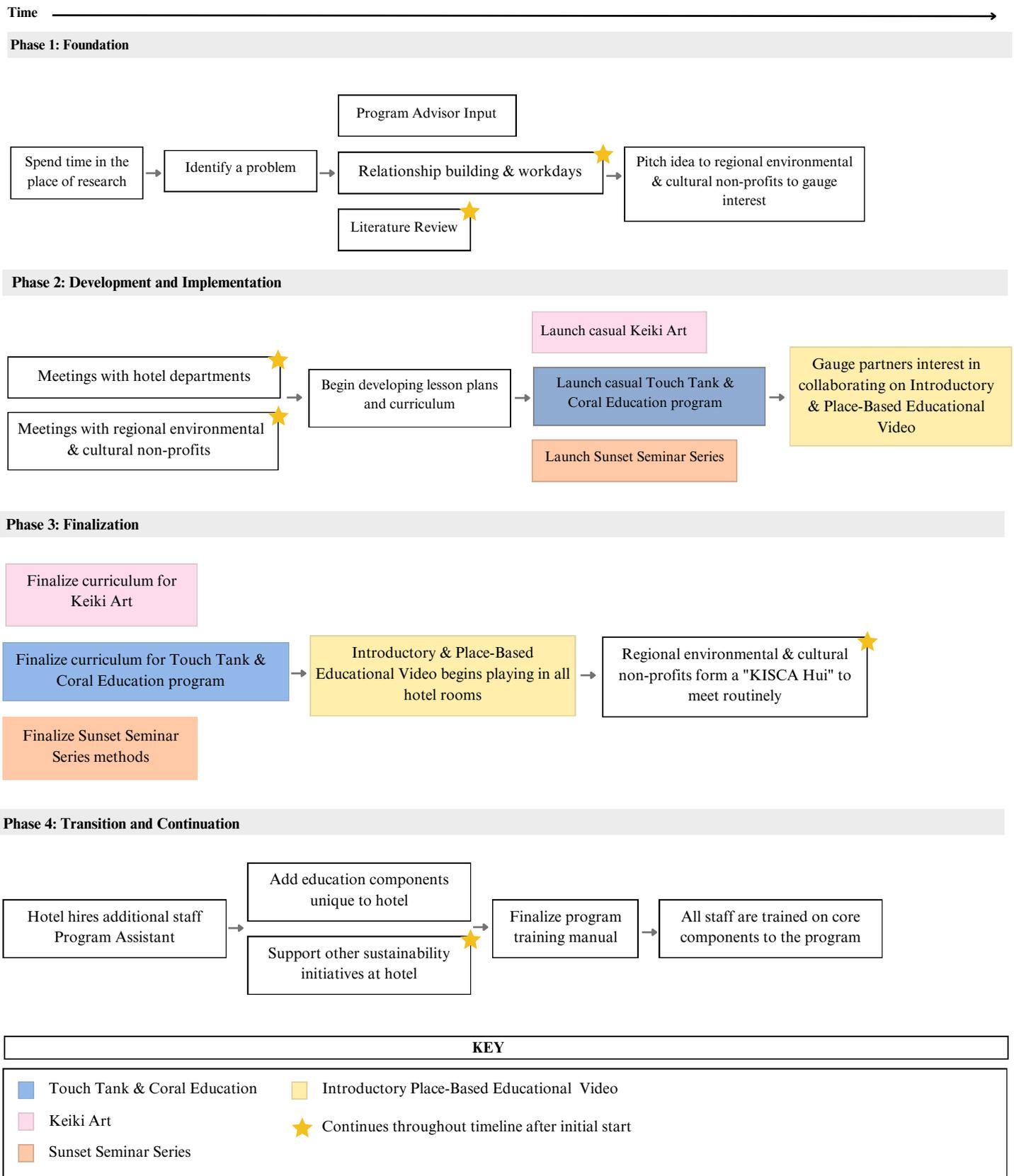


Figure 1. Flowchart of *Encouraging Visitors to Mālama I Ke Kai* program development. The program was developed over four phases, starting with building a foundation (Phase 1), developing and implementing (Phase 2), finalizing program components (Phase 3), and lastly transitioning the program to be continued by the hotel (Phase 4). This flowchart is a product that reflects our best practices that we learned the most from and is intended for others interested in implementing a similar program.

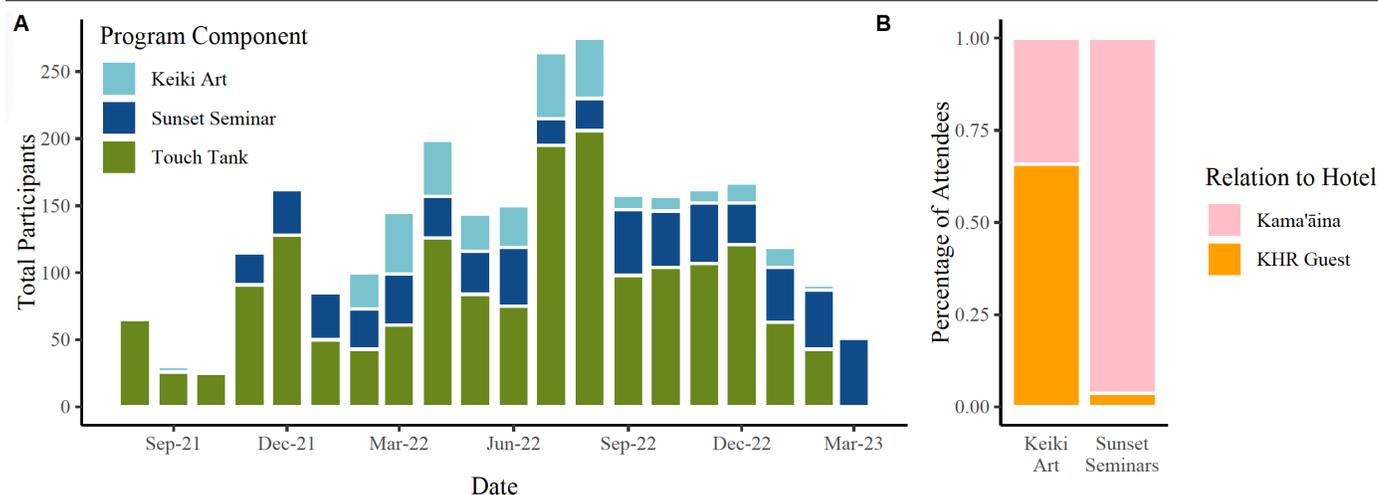


Figure 2. A. Total participants for all programs, including *Keiki* (child) Art, Sunset Seminars, and Touch Tank and Coral Education events from August 2021 through June 2023. Note that all program components were launched by November 2021. B. Participant ratio of *kama'āina* (from the land; Hawai'i resident; familiar to) to Kahala Hotel and Resort (KHR) guests for programs requiring registration, including *Keiki* Art and Sunset Seminars.

mauka to makai (uplands towards the sea) (Table 1). The goals for this program component were to provide professional presentation experience for local researchers, provide a venue for local organizations to share their research with the community, open the hotel space up to the community, and to engage both visitors and *kama'āina* in environmental conversations that offer pathways to take care of Hawai'i.

Introductory Place-Based Educational Video. The “Introductory Place-Based Educational Video” was designed to provide contextual place-based environmental and cultural information regarding the Kahala Hotel & Resort's unique position within the Wai‘alae region. We designed the video assuming that most visitors do not intend to disrespect or harm Hawai'i's natural resources, but have limited access to information about how to avoid and minimize negative impacts. This video raises awareness about Hawai'i's natural resources while offering guidelines for visitor behavior, including “dos and don'ts.” Regional non-profits (Table 2) co-developed the content for their corresponding areas of expertise to reflect the messages they wanted visitors to hear. The primary goal was to instill appreciation in the viewer for Hawaiian culture, which in turn, would hopefully encourage them to respect the people, plants, animals, and all natural resources that sustain people's lives.

Program Transition. With KHR support, we developed, implemented, and refined all program components. However, long-term management of *Encouraging Visitors to Mālama I Ke Kai* was always intended to be handed off to KHR, with HIMB as advisors over the longer term. Researchers developed a Training Manual (Appendix A) and KHR hired a Kahala Initiative for Sustainability, Culture, and the Arts (KISCA) Program Assistant one and a half years after pro-

gram launch (Figure 1). This position acts as the liaison with non-profit partners and cultural practitioners, instructs all *Encouraging Visitors to Mālama I Ke Kai* activities, and implements new KHR/KISCA sustainability initiatives.

METHODS

Program Development. *Encouraging Visitors to Mālama I Ke Kai* was developed over two years and in four phases: 1) Foundation, 2) Development and Implementation, 3) Finalization, 4) Transition and Continuation (Figure 1).

Phase one laid the foundation for program development. This included a broad literature review to better understand the place and people, with an emphasis on spending time in *āina* learning about and practicing local and indigenous knowledge (similar to methods in McMillen et al., 2017) through restoration workdays and casual conversations. Additionally, we organized interviews with environmental and cultural non-profits plus other community leaders about potential positive steps the tourism industry could take to benefit Hawai'i's natural resources and community relations. Specific evaluation methods were designed for each program component. Phase one was intentionally gradual to allow for meaningful community engagement. These conversations led to a more concrete program concept.

In Phase two we developed the program components and began working with KHR to launch the activities. Curriculum expanded on existing programs led by our team and others in the region. Casual versions of each program component were piloted.

After a year of piloting the program and making modifications as needed, in Phase three we finalized the curriculum for each program component. Programs were running consistently, and an official *hui* (group) was formed to encour-

Table 1. *Sunset Seminar Series Presentations.*

Title of Presentation	Speaker Category
The Hawaiian Ko'a Card: a coral health assessment tool for citizen scientists and researchers	Academic Staff
Hula: Sustainability in motion	Academic Staff
Conservation conversations in higher education: engaging students with sustainability curriculum in non-science courses	Academic Staff
Fantastic beats and where to find them; or how to study dolphins	Academic Staff
Rare plant conservation on O'ahu, Kona Moku, South Eastern Ko'olau Mountains	Agency Staff (Federal / State)
Aquatic invasive species	Agency Staff (Federal / State)
Mauka to makai invasions: invasive species impacts from forest to reef	Industry Staff
Kupu - a story of growth	Non-Profit Staff
Community-based ocean exploration: discovering with everyone	Non-Profit Staff
Creating impact through community engagement in coral restoration	Non-Profit Staff
Instilling community kuleana through experiential learning	Non-Profit & Academic Staff
Lessons from the lo'i: Ho'okua'aina and biocultural restoration	Post Graduate Degree
'O Niu ka inoa: management lessons from community stories and historical timelines of a degraded nearshore resource	Post Graduate Degree
How our land-based pollutants are ending up in Maunalua Bay	Pursuing Graduate Degree
Making light work of coral restoration	Pursuing Graduate Degree
In hot water: corals, climate change, and conservation	Pursuing Graduate Degree
How Hawai'i's corals and their algal partner are responding to climate change	Pursuing Graduate Degree
How math and coding can help us protect Hawai'i's coral reefs	Pursuing Graduate Degree
Absence of light makes the sea creature glow fonder	Pursuing Graduate Degree
Corals in the Northwestern Hawaiian Islands	Pursuing Graduate Degree

age all environmental and cultural non-profits to meet with KHR on a regular basis to create consistent communication pathways for program updates, project ideas, and potential collaborations.

Phase four was the final phase and encompassed steps taken to transition the program from HIMB to KHR, including hiring KHR staff. A Training Manual (Appendix A) on the four core components was developed to train KHR staff and to pitch the program to other interested hotels in Hawai'i.

Establishing Community Partnerships. Our previous work in Maunalua Bay with partners on a coral restoration project, *Restore with Resilience*, prompted us to broaden outreach efforts to *kama'aina* and visitors in the area. One

of these new collaborators was KHR. KHR has been implementing regenerative tourism by redesigning their property and activities to shift from an extractive approach to supporting the environment and people (Sheldon, 2021). KHR is a luxury hotel located on six and a half acres of land in the 'ili (subdivision) of Wai'ala'e 'iki, a subdivision of south Honolulu. KHR established the KISCA program in 2016, which became one of the first programs in Hawai'i to take positive steps toward connecting the tourism industry, *kama'aina*, and the environment. Since 2021, KHR guests have been given the option to "opt-in" to a \$10 KISCA daily fee that goes toward supporting all KISCA activities and non-profit partners. This *Encouraging Visitors to Mālama I Ke Kai* program was conducted within KISCA. Additionally, we collaborated with 12 local organizations (Table 2) to ensure the program highlighted the most recent environmental, cultural, and social efforts.

Regional environmental and cultural non-profits played key roles throughout program development (Table 2). For each program component to specifically reflect Maunalua Bay we had to learn from those dedicated to stewarding 'aina. Many of the messages woven into the program curriculum came from spending time with people working in 'aina restoration. The main non-profit contributors within the Maunalua Bay region were Ko'olau Mountains Watershed Partnership (KMWP), Mālama Maunalua (MM), and Maunalua Fishpond Heritage Center.

Target Population. Programs were intended to reach both *kama'aina* as well as hotel guests. Each component was also designed for all ages, from *keiki* to *kūpuna* (grandparents). Touch Tank and Coral Education events were located in a central well-trafficked location of the hotel in order to increase participation and recruit as broad of an audience as possible. Keiki Art aimed to include a younger demographic in learning activities. Since the Sunset Seminar Series was more scholarly focused, most participants were adults. However, because of the casual nature of the events, parents still brought their families and *keiki* to seminars. The Place-Based Introductory and Educational Video was posted publicly online and played continuously in lobbies and all 338 guest rooms.

Research Questions. We asked three questions that differed for each component:

1. How many people participated in each program component (Touch Tank and Coral Education, Keiki Art, Sunset Seminar Series)?
2. What were the ages of the intended youth programs (Touch Tank and Coral Education and Keiki Art)?
3. What percentage of participants were *kama'aina*

Table 2. List of Involved Organizations. Organizations engaged in the Encouraging Visitors to Mālama I Ke Kai program. Seminar = Sunset Seminar Series, NP = Non-profits, Advising = Program Input, Video = Participation in Place-Based Introductory and Educational Video, bolded organizations were core partners who contributed the most to program development.

Organization	Description of Organization	Description of Contribution
Hawai'i Institute of Marine Biology (HIMB)	Marine biology institution at the University of Hawai'i at Mānoa	Overall program management; Advertising; Advising; Relationship building; Video; Seminar; Member of KISCA hui
Kahala Hotel & Resort	Luxury Hotel	Program host and funder; Meetings with hotel departments; Supporting other sustainability initiatives at hotel; Advertising
Mālama Maunaloa	NP focused on restoring Maunaloa Bay	Workdays; Advising; Video; Member of KISCA hui, Seminar
Ko'olau Mountains Watershed Partnership	NP focused on restoring Ko'olau Mountains native forests	Workdays; Advising; Video; Member of KISCA hui
Maunaloa Fishpond Heritage Center	NP focused on stewarding Kānewai Spring and Kalauha'iha'i Fishpond	Workdays; Advising; Video; Member of KISCA hui
Creative Juice Productions	Creative Video Agency and Production Company	Filming place-based introductory and educational video
iQ 360	Digital marketing company	Graphic design
Kāko'o 'Ōiwi	NP focused on restoring agricultural and ecological productivity in He'eia	Relationship building; Workdays
Paepae o He'eia	NP focused on stewarding the He'eia fishpond	Relationship building; Workdays
Kuleana Coral Reefs	NP focused on restoring Hawai'i's coral reefs	Advising
Hanauma Bay	Hanauma Bay Education Program by the University of Hawai'i Sea Grant	Advising
Ulumau	Consultancy firm to merge public and private sectors regarding topics of sustainability	Advising
Kupu	NP to support Hawai'i's youth	Seminar
Natural Resources and Environmental Management Department at the University of Hawai'i at Mānoa	Science and management department at the University of Hawai'i at Mānoa	Advising; Seminar
Oceanography Department at the University of Hawai'i at Mānoa	Oceanography Department at the University of Hawai'i at Mānoa	Seminar
Leeward Community College	Local Community College	Seminar
Department of Land and Natural Resources Division of Forestry and Wildlife Plant Extinction Prevention Program	State of Hawai'i Department	Seminar
Hawai'i State Division of Aquatic Resources (DAR) Aquatic Invasive Species Team	State of Hawai'i Department	Seminar

or a KHR guest in the programs that required registration (Keiki Art, Sunset Seminar Series)?

Data Collection.

Touch Tank and Coral Education Events. For each activity, we gathered data on the total number of participants, ages, and association (*kama'āina* or a KHR guest). Data was limited by the extent the hotel could disclose information about their guests. Touch Tank & Coral Education events were held midday weekly on Fridays and did not require reservations. Sessions lasted two hours each. We brought touch tank animals to events with approval from a Hawai'i State Department of Aquatic Resources Special Activities Permit to HIMB (SAP #2023-31), such as Plump Sea Cucumbers (*Actinopyga obsesa*), Spiny Brittle Stars (*Ophiocoma erinaceus*), Elegant Hermit Crabs (*Calcinus c.f. elegans*), and Collector Urchins (*Tripneustes gratilla*). Coral Education events also included a Coral Bleaching Kit, a hands-on activity that taught participants about coral bleaching (Appen-

dix B), a wave pool exercise about coastal protection and erosion prevention, and live samples of native and non-native *limu* (algae) (*Gracilaria*). Instructors shared educational materials such as photos of Hawaiian coral reefs, information about risks to reef ecosystems, Hawaiian marine life identification sheets, coral skeletons, Hawaiian marine life books, laws pertaining to protected species such as minimum distance from Green Sea Turtles and Hawaiian Monk Seals, as well as information about local organizations active in environmental restoration. At each event, instructors would count participants and estimate their age range in one of three categories: 0-10 years old, 10-21 years old, and 21 and older. For Touch Tank and Coral Education events, we prioritized participants having fun and being fully immersed in the experience rather than feeling like they were being part of a study. The instructor kept track of participant counts with estimated participant age ranges. A subtle QR code posted on a flyer was displayed at tabling events for optional program evaluation.

Keiki Art. Keiki Art classes were held once a week on Wednesdays in a waterfront guest room that was turned into an art classroom. *Keiki* had to be at least five years old and class size was capped at 15 participants. KHR provided all art materials including crayons, pencils, markers, paper, scissors, glue, acrylic paints, and cleaning supplies. Projects ranged from paintings of coral reefs, marine animal portraits, *ahupua'a* (mountain ridge to sea; watershed) landscapes, 3D paper crafts, illustrated booklets, and more. The Keiki Art program required pre-registration that collected participant counts, exact age, and relation to hotel (*kama'āina* or KHR guest).

Sunset Seminars. Sunset Seminars were held monthly in the evenings at an outdoor venue next to the ocean with an indoor ballroom as a backup location based on weather conditions. Talks lasted around 30 minutes, followed by a Q&A session. KHR sponsored the seminars with complementary *pūpū* (appetizers, light snacks) and non-alcoholic beverages.

Presenters were recruited through KHR, academic, and non-profit partner listservs as well as social media networks. Topics ranged from coral reefs, general ocean science, sustainability, invasive plants, forest restoration, and volunteer programs. Presenters were typically graduate students or professionals from government agencies or environmental, social, and cultural non-profits (Table 1). We screened presenters over two meetings, which included a preview of their presentation and, occasionally, advice on how to make the talk more interactive and public friendly. After presenting, presenters filled out an online post-survey (Table 3a) to share their experience.

All events required pre-registration which included participant counts and relation to hotel. We also provided both physical and electronic feedback forms during and immediately following seminar events for both presenters and

participants for continued program modifications as needed. Attendance was limited to 50 people due to budget and space restrictions. Final participant counts were based on those physically present at the seminar. Attendees left the event with resources on how to get more involved in restoration efforts.

Introductory Place-Based Educational Video. The Introductory Place-Based Educational Video script was written by CRL with content modifications by KMWP, MM, and Maunalua Fishpond Heritage Center based on what key messages they wanted their organization to communicate. After the script was finalized, KHR hired Creative Juice Productions to film and edit the video. After a revision process between Creative Juice Productions, CRL, the non-profits, and KHR marketing, a finalized video was published publicly online and began playing in hotel lobbies and all 338 visitor rooms.

RESULTS

Program Participation. Components were launched at different times throughout the first year and some were offered more frequently than others. We documented over 3,000 participants, with 1,911 participants at the Touch Tank and Coral Education events, 396 participants at the Keiki Art program, and 696 participants at the Sunset Seminar Series (Figure 2a). Since we had no way to track how many individuals viewed the Introductory Place-Based Video, those metrics were not included in the analysis, making 3,000 counts a conservative estimate of program participation.

Number of Events Offered, Age Breakdown, and Relation to Hotel.

Touch Tank and Coral Education. We hosted 81 Touch

Table 3. *Sunset Seminar Series feedback from post-event surveys (Appendix C). A. Questions were asked on a Likert scale of 1-5, with 5 being “very well” or “most frequent.” Presenter rating is the median value of all 14 responses. B. Percent of audience numbers who responded “yes” to survey questions, from 39 responses.*

A) Presenter Feedback		B) Audience Feedback	
Survey Question	Presenter Median Rating	Survey Question	% of Audience Responding “Yes”
Please rate your overall experience as a presenter at the Sunset Seminar Series.	5.0	Did you enjoy the event(s)?	97%
How well did the program manager facilitate your participation and preparations?	5.0	Did you learn something new?	95%
How well did the experience contribute to developing your professional presentation skills?	5.0	Did the event(s) change how you view Hawai'i and it's natural resources?	74%
How likely would you be to do it again in the future?	5.0	Did what you learned in the presentation(s) make you feel more inclined to get involved in environmental stewardship efforts?	90%
How often do you get a chance to share your research with the public?	3.0	Did the presentation(s) provide you with at least one clear way to get more involved?	79%
How many times had you done a public presentation in front of that many people prior to the sunset seminar?	4.0	Do you feel you have changed your behavior in response to what you learned during the presentation(s)?	69%

Tank and Coral Education events which made this the most frequent event of the program. Over half of the participants were adults (>21 years-old). Instructor estimated participant age breakdown was 31% 0-10 year-olds (574 participants), 15% 10-21 year-olds (287 participants), and 54% 21 year-olds and older (1,004 participants). Less than 1% of the total 1,865 participants elected to fill out the optional online feedback form.

Keiki Art. We hosted 62 Keiki Art classes. Most participants were young, with 59% <7 years old (225 participants), 29% 7-11 year-olds (104 participants), and 12% kids older than 11 years old (47 participants). The Keiki Art activities were more frequented by KHR Guests, with 66% being hotel occupants compared to 34% *kama'āina* (Figure 2b).

Sunset Seminar. There were 18 Sunset Seminar events with unique presentations from 17 different organizations (Table 1). This included many researchers associated with the University of Hawai'i at Mānoa. Seven presenters were affiliated with labs at HIMB, three presenters were from labs within the Natural Resources and Environmental Management Department, and one presenter was from the Biology Department. Two educators from local community colleges within the University of Hawai'i system also presented.

Presenters and attendees reported having positive experiences with the Sunset Seminar Series program (Table 3). Over 90% of attendees agreed they enjoyed the event, learned something new, and felt more inclined to participate in environmental stewardship activities. Sunset Seminars were dominated by community members, with an average of 37 participants per event, 97% of whom were *kama'āina* and 3% hotel guests (Figure 2b).

DISCUSSION

The *Encouraging Visitors to Mālama I Ke Kai* program aimed to take an initial step toward improving visitor relationships with Hawai'i's environment and people. The program successfully engaged over 3,000 participants across a full range of ages and received positive responses in evaluation. All four main components targeted environmental education and awareness for both *kama'āina* and visitors in unique ways, although *kama'āina* and visitors were often drawn to different activities, reducing the full overlap intended. We anticipate more blending of *kama'āina* and visitors attending the same activities as the program becomes more established.

We successfully transitioned the program to KHR by developing a Training Manual (Appendix A), training KHR staff to take over day-to-day operations, strengthened relationships with community organizations, and assisted KHR/KISCA on their path toward regenerative tourism. This

project highlights one of the many ways academic research institutions worldwide could effectively collaborate with non-profits, the tourism industry, visitors, and community members. It also offered consistent opportunities for visitors to learn about Hawai'i's natural resources and people on a deeper level. We engaged *kama'āina* as well as visitors, including a wide range of ages, and featured a diverse range of activities. The success of this program within a relatively short time period (two years) highlights the value of making environmental learning opportunities free and welcoming.

Touch Tank and Coral Education events were the first to be launched, were offered most frequently, did not require a reservation, and did not have a participant maximum, so it makes sense that they were the most attended of all components. Though events initially attracted children, they usually brought their parents or other family members with them. This is reflected in the participant data, in which there were almost twice as many adult participants compared to children.

Keiki Art was most popular with young children between ages five to seven years old, which was the target age. While it was mostly attended by hotel guests, it was helpful for *kama'āina* because it was free and provided short-term childcare. Parents would often anecdotally tell the instructor how grateful they were to either have a chance to get some extra work done, or to just have a moment to relax. The program hours were in the morning for the first six months of the program, but then were adjusted to the afternoon to accommodate school schedules and encourage *kama'āina* participation.

The Sunset Seminar Series was the only component where the majority of participants were *kama'āina*. This event supported local speakers and encouraged *kama'āina* to explore the KHR property to see for themselves the steps KISCA is taking toward regenerative tourism. Verbal feedback confirmed that for many *kama'āina* it was their first time at KHR and was an opportunity to gather and get to know other members of the community interested in research, conservation, and restoration work. Sunset Seminar presenters were also grateful for the chance to share their research with the public. As anticipated, most participants were adults because of the subject matter and style of presentations.

The educational video provided contextual place-based environmental and cultural information regarding the KHR's unique position within their surrounding area of the island. The video continues to play in all 338 KHR guest rooms and lobbies. While videos with information related to visiting the Hawaiian islands in general already exist, this video was unique because it gave information specific to Wai'ālae 'iki where the hotel is located. By focusing on the hotel's *ahupua'a*, we put emphasis on the value of understanding the ecology and history of that specific place being impacted by the people viewing it. While the overall messaging would

be transferable to other places, the details remain with that specific region.

Further work is needed to understand program impact on participant knowledge and behavior in addition to verbal responses. Sunset Seminar Series feedback forms were initial attempts at evaluation for improvements, but additional research is needed for assessing the effectiveness of programs. These types of follow-up assessments would require continued contact between participants and the hotel/instructor. As the Kahala Hotel and Resort continues to develop their KISCA department after the initial two year program management by HIMB researchers and educators, they have hired a full-time “KISCA Manager” position to continue and expand upon all environmental and cultural activities. The hotel continues to work with regional environmental and cultural non-profits on how the hotel can support them, as well as participating in additional internal sustainability initiatives.

We encourage program replication and hope to inspire others with key lessons:

Lesson 1: Moving at the Speed of Trust. Building relationships between groups with complicated histories takes time (Kūlana Noi'i Working Group, 2021). Because the tourism industry in Hawai'i has historically negatively impacted local communities (Aikau and Gonzalez, 2019), most community partners were initially hesitant to want to collaborate. It was important to be patient and allow trust to develop without any preconceived timelines and focus on our partners' needs. Trust was built by KHR industry partners becoming fully immersed in the community, including participating in workdays with the non-profits, consistently offering support and honesty, listening and making corresponding changes, and being able to commit to a long-term relationship with reciprocal respect.

Lesson 2: Something is Better than Nothing: The Value of Small Steps. Program success came from identifying where change was possible and acting on it. While these program components are only small steps toward a much larger issue, they are directly applicable and tangible. This incremental approach eventually opened more doors and inspired other complementary programs.

Lesson 3: Leaving Something Better than You Found It. One of the key messages from community partners was the concept of “giving back.” If a natural resource is harvested or damaged, it should be replenished or protected. This same concept also applies to human interactions, with a focus on how the tourism industry could give back to the community and respect culture.

Lesson 4: Responsibility of Everyone to Care for Their

Place. Ecosystems in Hawai'i, especially urbanized ones in the Maunaloa Bay region, are heavily degraded and a return to once pristine conditions is unrealistic. *Kama'āina*, especially Native Hawaiians, are concerned about their environment, but they do not have the sole authority to manage the natural resources within their community (Stephenson et al., 2014). Industries, including tourism, must work alongside the local community to encourage progress. Identifying and engaging all stakeholders is crucial to the success of place-based resource management and education efforts.

Lesson 5: Partnerships are Critical. This program would not have been possible without the valuable input from partners. All organizations helped shape the activities from a concept to the finalized program. Partners shared a diverse range of perspectives and knowledge that was featured in the program curriculum. Stakeholders in the Maunaloa Bay region came together to take a holistic approach to environmental, social, and cultural initiatives.

Future Directions and Conclusions. Connection and love for place is often the motivation for people to protect the places they care for (Kealiikanakaolehaililani et al., 2018). As the *Encouraging Visitors to Mālama I Ke Kai* program moves forward with KHR/KISCA, it will continue to evolve and offer more opportunities for visitors to interact with and learn about Hawai'i's natural resources, and for *kama'āina* to engage in 'āina connection and care (Vaughan, 2016).

This program represents a model through which researchers can consider developing place-based programs and working collaboratively with people of different backgrounds and knowledge systems. As communities continue to adapt to environmental changes, partnerships such as these will strengthen the ability of a community to be resilient together in the face of a changing climate (Pachauri et

Table 4. Glossary for words in 'Ōlelo Hawai'i, definitions referenced from *Nā Puke Wehewehe 'Ōlelo Hawai'i* online resource.

'Ōlelo Hawai'i	English
Ahupua'a	Land division usually from uplands to ocean
'Āina	Land
Hui	Group
'Ili	Subdivision
Kai	Ocean
Kama'āina	One born in a place
Keiki	Child
Kūpuna	Grandparents
Limu	Algae
Mālama	To take care of
'Ōlelo No'eau	Hawaiian proverb
Pūpū	Appetizer

al., 2014). Organizations with similar motivations can use the components of *Encouraging Visitors to Mālama I Ke Kai* that make sense for their place. Finally, we hope this program will encourage people to generally tread thoughtfully on all 'āina, whether it be their home or someone else's.

ASSOCIATED CONTENT

Supplemental material mentioned in this manuscript can be found uploaded to the same webpage as this manuscript.

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ABBREVIATIONS

CRL: Coral Resilience Lab; DAR: Division of Aquatic Resources; E-STEM: Environment, Science, Technology, Engineering, and Math HIMB: Hawai'i Institute of Marine Biology; HTA: Hawai'i Tourism Authority; KHR: Kahala Hotel and Resort; KISCA: Kahala Initiative for Sustainability, Culture, and the Arts; KMWP: Ko'olau Mountains Watershed Partnership; MM: Mālama Maunalua; SCE: Social-Cultural Ecological

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