

Article

Ritual + Sustainability Science? A Portal into the Science of Aloha

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Abstract: In this paper, we propose that spiritual approaches rooted in the practice of Hawai'i ritual provide a powerful portal to revealing, supporting, and enhancing our collective *aloha* (love, fondness, reciprocity, as with a family member) for and dedication to the places and processes that we steward. We provide a case study from Hawai'i, where we, a group of conservation professionals known as Hālau 'Ōhi'a, have begun to foster a collective resurgence of sacred commitment to the places and processes we steward through remembering and manifesting genealogical relationships to our

landscapes through Indigenous Hawaiian ritual expression. We discuss how a ritual approach to our lands and seas makes us better stewards of our places, better members of our families and communities, and more fulfilled individuals. We assert that foundations of the spiritual and the sacred are required for effectively advancing the science of sustainability, the management of natural resources, and the conservation of nature.

Keywords: sacred ecology; biocultural conservation; Hawai‘i

1. Welina—Welcome and Orientation

You have come to Hilo to the USDA Forest Service to visit the *hālau* (traditional Hawaiian school of learning). You arrive, park your car, and wait a little bit. If you leave your car now, you will be drenched because Hilo is still raining until we can bid Hurricane Lane “*aloha*” and greet the next storm. What was his name? Anyway, someone runs out with umbrellas to bring you into the *lānai* (outdoor covered area) where we meet before transforming the facility’s conference room into our learning space. As you transition from dry to wet, your attention turns to the voices of men, women, children swelling and pulsing with song in rhythm with the *pakapaka* (pitter patter) of the rain. You do not even notice that your left shoe is soaked through to the sock. As you get closer, your vision glimpses a wonderful eclectic collection of the world in welcoming, chanting you into Hālau ‘Ōhi’a:

Ua lū kinikini ka hua ‘ōhi’a lehua mai ‘ō a ‘ō o Lononuiākea

Two million lives in the seeds of ‘ōhi’a strewn about from near and far in Hawai‘i

Halihali ‘ia e ka ‘ēheu hulu makani

Carried on the wings of the wind

Hi’ipoi ‘ia e ka Poli mahana o Kānehoa, o Honuamea

Caressed in the warmth of Honuamea, the volcanic earth; nourished by Kānehoa, the sun

Ua a’a, ua mole, ua mōhala a’ela

We are rooted, tapping the source of water—unfurling and peaking towards full bloom

‘O ka ‘apapane, ‘o ka mamo, ‘o ka nuku ‘i’iwi, ‘o ka ‘āhihi

A diversity of hues, brilliant scarlet, golden, salmon, and the rare white

Mai hiki lalo a i hiki luna e waiho nei i hāli’i moku lā

We are blankets of ‘ōhi’a forests that extend beyond the horizons of my vision

Ua ‘ikea! A he leo nō ia.

It is done with the simple offering of the voice.

“The real root of these [sustainability] issues, both cause and cure, lies not in our science or technology but in our own spiritual and intellectual poverty or more hopefully, in our own spiritual and intellectual resources”. [1] (p. 3)

1.1. Why the Need for Ritual in Conservation?

In Hawai‘i, spiritual foundations continue to define relationships among many cultural practitioners, community members, places, and processes [2–4]. We propose that sacred ritual plays a central role in elevating these foundations and enhancing the well-being of all members of the coupled socioecological system. Specifically, this paper makes the case that spiritually oriented ritual is a powerful portal to revealing, supporting, and building up our collective love for and devotion to the places and processes that we steward. It is this path that we believe is required for effectively advancing the science of sustainability, the management of natural resources, and the conservation of nature. In advancing these disciplines, we also believe that spiritual approaches that engage different levels of personal and communal ritual enhance our ability to interact with our landscapes and seascapes and so can best position Hawai‘i to achieve biocultural well-being.

Hālau 'Ōhi'a is both a venue for and a process whereby we can explore the meaning of family life and our connections to a broadly defined genealogy of place. "Hālau" translates to traditional Hawaiian school of learning, literally meaning "many breaths," and is often associated with the traditional dancing art of *hula*. "'Ōhi'a" is the name of Hawai'i's most common, widespread, and bioculturally important native tree (*Metrosideros polymorpha* Gaudich, Myrtaceae), and the name literally means "to gather." The spiritual venue and the sacred process are created by engaging native Hawaiian rituals, which include the use of Hawaiian language, the retelling of sacred stories, the performing of traditional chants and dance, and the creation of our own poetic texts and art forms. Through these practices and the resulting deep learning of cultural and physical geographies that surround us, we are able to establish and deepen our kincentric relationships to the world around. The ultimate goal of this learning is no less than to transform the way we view and steward our lands and seas. As in the *hālau* setting, this paper is made up of the many breaths, voices, and ideas from our group. Like the 'ōhi'a, we are a diverse group of resource managers, field technicians, researchers, interns, educators, cultural practitioners, administrators, students, and program leaders representing many organizations, generations, and life experiences. In short, we are people whose functions are foundational to the well-being of our Hawai'i landscapes, seascapes, and communities.

1.2. What Is Ritual?

Ritual rooted in spirituality is an ubiquitous feature of the human experience across planet Earth and throughout human history, and takes many forms across and within cultures. Ritual of a spiritual nature has been examined by countless scholars over many centuries, and has been characterized as serving a wide diversity of societal functions, including to name just a few ritual practices: bringing about an altered state, as with healing and shamanistic rituals [5]; expressing or presenting a system of beliefs, for example, about the structure of society or kinship relationships [6]; conserving resources, for example, by defining the taking of resources [7,8] or the imposition of food taboos [9]; managing resources and horticultural practices based on weather, phenology, and astronomical cycles [10]; avoiding contagion [11]; improving social cohesion [12] and protective social bonds that increase survival [13]; making pilgrimages to natural sacred sites [14], including to redefine oneself [15]; and burying family and friends [6,16]. While early theories framed rituals as functioning to protect the status quo, to resist change, and to relieve anxiety over uncertainty about observed or experienced phenomena [17], contemporary perspectives point to rituals as also serving as agents of cultural change, in both historic and contemporary contexts, as rituals are often "created by families, secular and religious celebrants, civil servants, or volunteers" [18] (p. 2). As such, rituals can play subversive, creative, or socially critical roles [19]. Where ritual catalyzes social transformations [18,20] through their performative, structured, and collaborative natures [18], they can be seen as providing "breakthroughs to the knowledge of the 'sacred'" the functions of which are "seen in a future we are not likely to be able to even guess" [19] (p. viii).

For our group, ritual has become a means to:

- (1) enter into a sacred space within which members of Hālau 'Ōhi'a can holistically (mind, body, and spirit) embrace widely ranging topics of existential importance to being human;
- (2) deepen our kinship relationships with the world around us; then from this,
- (3) catalyze personal and professional transformation and growth;
- (4) recognize and embrace the deep linkages binding together *haumāna* (student/students) and *kumu* (master teacher), *haumāna* and *kūpuna* (ancestors broadly defined), and *haumāna* and 'āina (lands and seas; that which sustains); and
- (5) identify, engage, and express gratitude to and *aloha* for the diverse linkages that sustain us physically (evolutionarily, nutritionally, biogeochemically), mentally (psychologically, professionally, academically), and spiritually (our relationships and ancestral connections to persons and places).

1.3. Case Study: Hālau 'Ōhi'a and Ritual

The unique Hālau 'Ōhi'a program was developed and is taught by Kekuhi Kealiikanakaolehaililani, a master teacher, who is trained in and has been practicing for over 40 years the Hawai'i traditions of *hula*, chant, and ritual. She is one of the *kumu hula* (teacher of traditional Hawaiian environmental dance) in the traditional dance school of learning Hālau o Kekuhi, a position previously held by her mother and grandmother. We, Hālau 'Ōhi'a, began our journey in 2016 because of a novel question posed by Kumu Kekuhi's research assistant, who asked: (1) "How can Hawaiian culture help us do our jobs?" and (2) "How can this work place become a community?" From that profound query, the idea of Hālau 'Ōhi'a was born. The last two and a half years have included: 35 sessions; a *pāmaomao* (international exchange among communities) with Maori communities of Aotearoa (New Zealand); many *kīpaepae* (a term created by *Kumu Hula* and faculty member from the University of Hawai'i, Taupōuri Tangarō, for the process of setting the foundation for engaging relationships through traditional ritual); and *huaka'i* (journeys) to Kanaloa (a small, very sacred island off the coast of Maui that was confiscated by the US Military, denuded and defiled over 40 years of intensive bombing practice, and through nonviolent protest returned to the Hawaiian people for restoration and reconciliation), as well as *huaka'i* through all the *moku* (land divisions or sub-county districts) of Hawai'i Island: Kona, Ka'ū, Puna, Hilo, and Hāmākua. During these *huaka'i*, we meet and work with *kama'āina* (children of a place), perform bioculturally structured ritual to enter place and perform the work of culturally-grounded restoration, conservation and resource management. We also engage larger audiences through academic presentations (for example, at the annual Hawai'i Conservation Conference, which attracts 1000+ participants from across Hawai'i and the Pacific region), and we also serve the ritual needs of our conservation community (for example, by helping to lead *kīpaepae* for community, educational, or scientific events). Through these experiences, we understand more clearly now that if we are to succeed in our professions as stewards, then practice of our professions demand nothing less than the *aloha* and conviction of a devoted parent for an adored child.

We also understand that we must foster a collective resurgence of sacred commitment to the places and processes we steward, a change that we believe is required if we are to heal the biogeochemical wounds of unsustainable resource extraction and restore sacred relationships across our evolutionary family that together will ultimately foster socioecological well-being. We have, effectively, reimagined our personal and therefore our professional relationship to the places that we steward: the plants, the animals, the corals and microbes, the elements, the human people, the mountains and the valleys, the rivers and the shorelines, and the bays and the open ocean.

1.4. Why We Need to Tell Our Story This Way

Hālau 'Ōhi'a creates a space for collectively recognizing and celebrating deeply held personal motivations that often drive one's relationship with land, river, and sea. This kind of relational dialogue was either not present in our professional work environments or present in very limited ways; this contemporary reality had many of us thinking (to ourselves or in conversations with like-minded colleagues): how can we do our work better and more aligned with personal beliefs and practices? Kekuhi challenged us to use this writing opportunity to articulate our Hālau 'Ōhi'a learning in article format. To be absolutely honest, we struggled with this task, but through extensive discussions, have decided to share our learning in the form of ritual process manifested in the following journal article. You, the reader, may be surprised to learn that simply by arriving at this point of the paper, you have begun the ritual with us, which in the context of our learning as *haumāna* of Hālau 'Ōhi'a begins with a *Welina* (physical and spiritual welcome).

What follows in each section of this paper is an opportunity, if you choose, to engage your own ritual experience. The format then is quite different from what is encountered in indexed scientific journals, including *Sustainability*. Specifically, drawing from elements of our experience of Hawai'i practice, our ritual follows these five steps: the *Welina* or the welcome and orientation (Section 1 above); this is followed by the *Ho'omākaukau* (To set intentions; Section 2), or personal and collective call to

preparation that includes setting personal intentions; after setting intentions, the *Hōʻīmana* (To come to life; Section 3) follows and includes the sacred process of initiating, entering into, and moving through multiple layers of knowing and meaning; Section 4 is the *Pani* (Closing), where individually and collectively, we recognize that the ritual has been performed and it is time to transition to Section 5, the *Hoʻokuʻu* (To release from ritual), which allows the participant to return to the mundane after having engaged, embraced, and absorbed sacred lessons provided by the ritual catalyzed experience.

We have made this decision to go with a ritual-based format because this writing effort is not only focused on transferring information, but is intent on providing *hua ʻōhiʻa lehua* (the seed-laden fruits of ʻōhiʻa) that lead each reader and author into an opportunity for transformation—both yours and ours. So, by aligning the structure and intention of this paper with this particular ritual process, by making the writing and reading of this paper a ritual in itself, we feel that we are more able to effectively and authentically convey the transformative power of ritual in the pursuit of sustainable resource management and effective conservation. Finally, we believe that it is remarkably appropriate that this paper should be published in a sustainability-focused journal because sacred connections to self, community, and to place are foundational to maintaining the resilience and sustainability of any system.

2. *Hoʻomākaukau*—Setting Intentions

Ritual and Multiple Layers of Meaning

In setting our intentions for writing this ritual, we felt it important to demonstrate how ritual expression can provide a path forward for sustainability, resource management, or conservation professionals to actively be in sacred and intimate relationship with the places that we serve—much as one would be in relationship with one’s family or closest friends. To do this, we build on our growing awareness of and commitment to the sacred relationships that define who we are in relation to self, family, community, as well as the world of organisms and processes that sustain us and that are sustained by us. To be clear, developing these spiritual relationships does not require a dismantling of one’s personal/professional belief system, but only to consider the notion that spiritually based relationships promote well-being and support a more sustainable path into the future.

As part of the *Hoʻomākaukau* phase, we take time in our daily lives to practice, study, interpret, and learn from *moʻolelo* (life stories), *kaʻao* (stories of, for example, creation and cosmologies), *mele* (traditional songs and chants), *oli* (vocalizing), *hei* (performed string art linked to *oli*), *hula* (Hawaiʻi’s environmental dance), and traditional Hawaiian scientific knowledge, such as that which is captured in *ʻōlelo noʻeau* (wise sayings of biocultural significance). A central part of this practice is being aware of and prepared for embracing multiple sources of knowledge, multiple layers of meaning, and multiple ways of interacting with the world [21].

A central but sometimes overlooked feature of Indigenous knowledge systems is the very formal and structured botanical, ecological, agricultural, hydrological, atmospheric, oceanographic, etc., observations that shape Indigenous knowledge of a place [3]. This celebration of diverse ways of knowing is powerfully exemplified within the multilayered *Kiʻi* (reflections) framework, composed of *Kiʻi ʻIaka* (reflections of self), *Kiʻi Honua* (reflections of community), and *Kiʻi Ākea* (reflections of the universal), upon which we rely heavily to convey our lessons learned to you the reader. So, this article, a physical manifestation of the ritual into which we are asking you to engage, seeks to teach and transform at three different scales, perspectives, or levels including the deeply personal, the collective family or community or even regional, and the universal.

In reading a sacred text, interpreting a chant, or in creating a poem, we are drawn personally and uniquely to the exchange because our being is uniquely engaging the elements of a story or chant in that very moment and in a particular place. For example, you, the reader, in reading a story may connect to the sacrifice of an elder brother for his younger sibling because you are the eldest sibling of your family, perhaps have taken on much of the responsibility of raising younger siblings, and by making this connection to the story, certain sections of text or themes have a specific message for your

unique experience as elder sibling. This *Ki'i 'Iaka* reflection might be particularly poignant if you have just experienced a powerful sharing with your younger sibling. As the regional reflection, *Ki'i Honua* evokes for the participant a particular set of shared experiences—experiences that might bind together a family, community, or culture. For example, a chant might evoke the importance of a journey across a body of water for accessing new lands or escaping harmful conditions, and you may see your own family's or even community's immigrant journey reflected in the story. In Hawai'i, engaging this theme might conjure images of the *wa'a* (canoe) and the literal and metaphorical importance of the *wa'a* to the Hawaiian people as a vessel for discovery, for connecting peoples across the Pacific, but also as a vehicle for coordination, elevated cooperation, and in the best cases, collaboration. The *Ki'i Ākea* asks the participant to find that which is universal within the images, themes, or ideas that are being shared. For example, loss and sacrifice in preparation for the birthing of something new can be seen as broadly foundational to the human experience, and in the engaging of this cycle, we become part of and are provided an opportunity to learn from the global human experience of transformation by sacrifice.

In engaging this *Ki'i* framework here, this paper structured as ritual expression seeks to:

- (1) identify and share the global importance of being genealogically tied to our places—a fundamental feature of the human experience (*Ki'i Ākea*);
- (2) show how we have relied on Hālau 'Ōhi'a to help us transition from a Western, colonial model of sustainability science (resource as commodities to be maximized to support human consumption), natural resource management (resources as objects to be managed through centralized, agency-controlled decision making), and conservation (systems of organisms to be protected from human use), towards a kinship-based model where stewardship is defined by sacred relationship to place and process, with traditional Hawaiian scientific knowledge and ritual fostering this transition/transformation (*Ki'i Honua*); and
- (3) demystify what ritual can mean for the individual practitioner in a sustainability, resource management, and conservation context (*Ki'i 'Iaka*) through the sharing of our individual experiences in ritual.

A final critical aspect of *Ho'omākaukau* is the identification of one's genealogical (not necessarily genetic) and biogeographical relationships with places or processes. This is a fundamental concept, as these connections define one's reciprocal stewardship relationship with one's surroundings as much as elucidating one's human family genealogy helps us to understand our connection to parents and grandparents, uncles and aunts, the migrations that brought our families to specific geographies, and the cultural identity and traditions that shape and enrich our lives. Viewed more broadly, genealogy as understood within a Hawai'i perspective pushes us to consider broader connections defined by biogeochemical and evolutionary ties, including to sources of food and water that literally make up a resident's physical and spiritual being, and that person's connections to all members of the evolutionary tree of life. By becoming familiar with, engaging, and then cultivating gratitude for one's familial (*Ki'i 'Iaka*), biogeochemical (*Ki'i Honua*), and evolutionary (*Ki'i Ākea*) relationships, those relationships that make up the broadly defined genealogies that sustain us, we are better prepared to enter into *Hō'īmana*, engage in ritual, learn from ritual and then apply lessons to our daily professional and personal lives.

3. *Hō'īmana*—To Come to Life

3.1. What Does Ancestral Ritual Look Like?

In Hālau 'Ōhi'a, ritual begins with two practices—the first involves formally requesting permission to physically and spiritually enter into a sacred space that for our process is the *hālau*. When we have been welcomed into this space that is the *hālau*, our ritual continues with the building of *kuahu* (altar as portal to the sacred) that is the act of physically and spiritually entering into a sacred space shared by all participants. These are foundational practices that achieve several things. The first

practice reminds us of our humble status as stewards: at the level of individual entering into a shared space with other students; at the level of a student collective entering into sacred dialogue with each other and our broadly defined communities, including as professionals in places we steward; and at the largest level as a fleeting presence on earth defined by *aloha* for all members in our genealogy, including honoring and expressing gratitude for that which precedes us, stewarding and expressing gratitude for that which sustains us today, and cultivating and expressing gratitude for that which will sustain our genealogy into the future.

The second practice guides us to leave behind mundane distractions (work schedules, shopping lists, household tasks) and focus on fundamental and sacred aspects of being a human in community to more fully engage what it means to be in community, to love and be loved, to care for and be cared for, to sustain and be sustained. Entering into the practice of *kuahu* demands that we fully engage what it means to embrace our genealogical connections to place and process (who broadly defined is sacred to us and why), and through embracing, how can we contribute to a collective exploration and deepening of relationship with and *aloha* for our genealogy (how do we make good on sacred devotion; what is the quality and motivation for this devotion; what are the physical, psychological, emotional, and spiritual trajectories for our relationships). By humbly asking for permission to enter into a space and then literally creating a physically, psychologically, emotionally, and spiritually safe space for sacred dialogue and connection, we open the portal for ritual practice to manifest for each participant's connection, growth, learning, and ultimately, personal and collective transformation.

3.2. Remembering Genealogical Relationships through Ritual

In this section, we share how our genealogical connections can be elucidated and literally manifested through the vehicle of ritual expression. We also share the multiple layers of transformation that have occurred during our time with Hālau 'Ōhi'a, with the hope that you will as part of this paper-as-ritual process identify how to engage and cultivate a sacred space with your colleagues to identify, discuss, and reflect upon the substantial topics discussed here. From the perspective of genealogy, ritual helps us to understand, honor, and enhance our relationships to the places and processes that we steward. Through much of our formal disciplinary training (e.g., sustainability science, natural resource management, conservation biology), many of us were taught explicitly with learning reinforced implicitly that we, as people, are separate from the natural world, that we have dominion over this world, and so it is within our rights and responsibilities to manage and control the resources of this world in ways that maximize the goods, services, and benefits provided to a society. Relationships have only recently become part of academic considerations of the management calculus [22], but when discussed in broader contemporary contexts, relationships are still portrayed as being ancillary to achieving management success.

For example, the practitioner is often asked to distill down the how, when, and where of resource management to simple economic metrics of success, with metrics of success fully occupying the decision-sphere. Within this framework, sacred relationships can be viewed as hindrances: when formed or held by professionals, these relationships may obscure objective evaluation of metrics of success and so complicate assessments of management; when formed or held by biocultural practitioners and communities who are connected to place and process, these sacred relationships may interfere with centralized decision making about place and process; when formed or held by professionals, practitioners, and communities, these sacred relationships may drive outright conflict that prevents implementation of agency-driven decisions. Conversely, by not embracing sacred relationship in sustainability science, resource management, and ecological conservation, professionals limit their capacity to communicate with biocultural practitioners and communities, and engage practitioners and communities in reciprocal stewardship—with each other and with the places and processes of interest.

An important feature of this conflict is in our training as resource and conservation professionals. Specifically, we are trained in universities, and this training is reinforced in the work place in a way that engrains the notion that in order to protect the plants, animals, resources, and places that we care about, we need to support the designation of these places as protected areas, pay professionals to exclude threats (including people) from these areas, federally list species as being of concern, all with the goal of preserving these areas in an isolated and as close to human-free condition as possible. These approaches identify the natural world as commodity (acres treated, numbers of individuals of a listed species saved) to be isolated and locked away. While resource management approaches or conservation practices are often reasonable and important for perpetuating species of concern, the ritual practiced in Hālau 'Ōhi'a has shifted assumptions about our role, specifically the role of kincentric connections, in the care of these places and the sustenance we give to but equally important receive from these places.

Ritual is helping each of us, individually and collectively, to connect to our shared and personal landscapes and seascapes, to the organisms and processes that bring life to these places, and to each other and ourselves as genealogical members of these places. At the foundation of this connection is knowing our places geographically, connecting to our processes that sustain us hydrologically, ecologically, and biogeochemically, and engaging our organisms evolutionarily and taxonomically. However, to attain this depth of understanding, ritual asks us to pause, think, notice, consider, and engage with a readiness to listen, receive, and to express gratitude for that which is living and nonliving in a place. In short, as we might bring many ways of knowing to our relationships with friends and family, so ritual asks us to bring many ways of knowing—intimate, artistic, fun, committed, patient, and sacred ways of knowing—to our places.

Returning to the ritual of presenting yourself to a forest, coastal ecosystem, classroom, or gathering space by first setting your intentions and asking permission to enter (the Hawai'i ritual of the *mele komo* and the act of *kāhea*), this practice establishes a tone of humility and respect that helps us to open our minds and hearts so that we can learn from that place on multiple levels. We are driven to know more intimately and patiently and with greater commitment the human, plant, and animal-people of that place. We use art to express this *aloha* for these places and the beings that make these places home. We express gratitude to these places and beings because we know that they literally sustain us, as a parent who provides for us physically, psychological, emotionally, and spiritually. We know that without these places, we are left impoverished, much as a life without friendship or deep family ties is lesser existence.

Finally, it is through the ritual that we physically offer our voice, our sweat, and our intentions as part of a reciprocal exchange with those places that we are genealogically connected to, and this exchange promotes well-being. The fields of psychology, animal (including human) cognition, and epigenetics, among others, all provide conclusive evidence that the quality of our relationships shape our health, our joy, our capacity for thriving—in short, our well-being. Experiments with non-human primates and more contemporary lessons from understaffed orphanages have reminded us of the simplicity, universality, and ancestral nature of this truth. And while early philosophical writings about our relationships to nature are rich with notions of well-being, contemporary agency-based approaches to conservation and resource management uncomfortably cling to a strictly biophysical model of stewardship that in our view disempowers the steward and the stewarded.

Ki'i Ākea—Why is it important for humans to recognize our genealogical connections to place? The need to belong and form attachments is a universal *ki'i* among humans. Biophysically, we know that all life on this planet and all forms in this universe come from a single cosmic event—the big bang. The atoms that make up our human bodies, the bodies of our plants, animals, the ocean body, the atmosphere, every form on this planet and beyond, all originate and share an ancestry with stars and the most ancestral of cosmic events. Beyond being physically made up of the same building blocks as our stellar and earth landscapes, environments across the planet all physically nurture us. Our mountains give us life through driving our weather patterns, by being the foundation of our

forests, which in turn cover the watersheds that form our water sources, and by providing the alluvial substrates for our farmlands where cherished members of our human community cultivate the food we eat while sustaining enormously complex ecosystems. This water and food from our mountains, plains, and seas physically sustains us, providing the building blocks for our cells—our skin, brain, intestines, hair, and muscles—in short, our beings. Research demonstrates that when our connections to these places, from childhood [23] to adults [3], includes acknowledging this genealogical connection to our place—our mountain, our stream, our ocean, the socio-ecological landscape, its fabric and features—we recognize that we are as connected and reliant upon them as we are on our life-giving parents and grandparents. With this relationship of connection and reliance come the same responsibilities to care for these mountains and streams that we have to care for our elder family members. One does not need to be Indigenous to a particular place to take responsibility for one's relationship with the places that give us life and sustain us.

Ki'i Honua—Yet, we can learn from Indigenous cultures, which often codify kincentric relationships between people and the elements of a regional landscape through legends or tales, poetic texts, dances, or other sources. In Hālau 'Ōhi'a, the first *mele* (chant) and accompanying *hei* (string art) learned by students is "'O Wākea Noho iā Papahānaumoku," which details the genealogy of Hawai'i—all of its islands and its people. It begins with the male entity Wākea (the expansive sky) joining the female entities Papahānaumoku (she who births islands) and Ho'ohōkūkalanī (she who affirms the stars in the heavens) to give birth to the Hawaiian archipelago. As part of this genealogical chant or *ko'ihonua*, the union of Wākea and Ho'ohōkūkalanī resulted in the birth of a stillborn child, who is buried in the earth. From his body grows the first *kalo* or taro plant (*Colocasia esculenta* (L.) Schott, Araceae), Hāloanakalaukapalili (Hāloa, literally great breath of the quivering leaf), which becomes the most important staple crop in Hawai'i. Through this union, a second child is born, also named Hāloa, but this child lives to become the first man and original ancestor of all Hawaiian people [24].

Ki'i 'Iaka—The *kalo* plant is foundational to Pacific island communities because for millennia, it was the main focus of one of the most remarkable traditional Indigenous breeding programs known to science as well as being a source of sustenance for Pacific peoples including settlers of Hawai'i. Today, *kalo* continues to be culturally vital despite massive social, agricultural, and ecological changes to Hawai'i's food system [25,26]. In understanding the shared genealogy of the Hawaiian people, the *kalo* plant, the islands, the earth, the sky, the stars, through this chant, we are charged with cultivating, caring for, and protecting those plant, land, ocean, and element siblings and ancestors as if they were family. At a personal level, when we plant, maintain, harvest, and prepare the next generation of *kalo*, we do so with the utmost thought and love. We make sure to never step near the roots of the plant, we diligently weed the patch, we learn the names of the dozens of varieties, and when it is time to harvest, we spend hours cleaning its corms and cuttings, always with an eye to replant and where ever possible share the *huli* (pruned stalk) and the *'ohā* (intact stalk with leaf and some corm), from which forms the next generation of planting material (Figure 1). This is done so that Hāloa is sustained into the future, and in turn, we as people of Hawai'i are sustained for generations to come. Manu Meyer [4] (p. 15) quotes a legendary *kalo* farmer from Waipi'o Valley, who describes the literal and metaphorical importance of planting the elder sibling *kalo* with integrity and sacred devotion because to do otherwise would hamper the growth and integrity of the harvest and genealogical perpetuation of this foundational agricultural resource. More metaphorically, our relationship with the physical crop is a reflection of how we speak, cultivate, and harvest the fruits of our ideas and actions. Do "we speak powerfully, truthfully, and with purpose or do we think ill, speak ill, and act ill" [4]?

Another example of kinship manifested in action can be found in our marine realm. As a descendent of all of the lifeforms starting from the sky, earth, and stars, we are kin to the *'opelu* fish (*Decapterus macarellus* Cuvier; mackerel scad), a staple of the Ka'ū region of Hawai'i Island and coastal communities across the archipelago. For some of us, when we are harvesting *'opelu*, we look at the fish eye to eye, and we tell it, "I'm going to take your life to sustain me and my family;" we recognize the physical and spiritual reciprocity between us as people and the *'opelu* as an ancestor. After we

have eaten him, we return its body to the ocean. Akin to the relationship between Hawaiians and *kalo*, we honor the *'opelu* for sustaining and nourishing us now and into the future through the entire process from recognition, harvest, ingestion, and returning the ancestor who has fed us back to the source. We, in return, work to sustain the *'opelu* through proper care and management of its surroundings—the coral, the algae, the reef and pelagic fish community, the shellfish—basically, all the features of the *'opelu's* genealogy that are required to support this species. These features have been gleaned over countless generations of keenly observing trial and error responses of this fish to natural variation in the environment and to traditional management.



Figure 1. Hālau 'Ōhi'a (inclusive of our children) carefully planting *kalo* in Pu'ueo, Waipi'o, Hawai'i Island.

3.3. Manifesting Genealogical Relationships through Ritual

Ki'i Ākea—As we have shown, identification of the genealogical relationships you have with your place is fundamental to recognizing, conceptualizing, and ultimately participating in the reciprocal relationship you have with your surroundings. This approach can be seen as a tool that is applicable and accessible globally. In this section, we discuss how these genealogies are physically manifested through the vehicle of ritual expression and the emotional transformation that occurs in this process. Ritual creates a space and establishes a context for understanding and honoring our relationships to the places we steward.

Ki'i Honua—Returning to the *mele* “‘O Wākea Noho iā Papahānaumoku,” the recitation of this chant, the application of our breath to these words and names, and the recreating of the images of Wākea, Papahānaumoku, and their island children with the *hei* (Figure 2) allows us to experience the deep, raw, and universal emotions that solidify the genealogical (familial, biogeochemical, evolutionary) connections we have with our surroundings. For us, this transformation can come through a body motion in *hula*, a *hei* figure, or speaking the name and replicating the actions of the volcano deity Pelehonuamea. In this recreation, we allow ourselves to be overtaken by gratitude, as manifested by the *mele* “Lei o Hilo”; by heightened awareness and respect for elemental forces in the *hula* “Kūkulu ka Pahu”; or by the perpetuation of our species in the *hula ma'i* (procreation dances). Once we are touched by these images and emotions, they are a part of us, with each ritual serving as a pathway to making seen and available for learning these vital connections.

Ki'i 'Iaka—As a *hālau*, our learning gained practical expression when we were asked to participate in a *Ho'ola'a 'Āina* ritual led by Kumu Kekuhi. This ritual took place in a healthy native forest ecosystem where low impact construction was to take place for establishing an ecological monitoring tower that is

1 of 20 sites (the Pacific Domain) that make up the National Ecological Observatory Network (NEON). The goal of ritual was to communicate with the site—the soil, trees, birds, and sky—through *oli*, *hula*, and *hei* that construction was going to occur but that healing and regeneration would follow the disturbance. Through our offerings, we became the ritualized exchange for the sacrifices absorbed by the site for the production of scientific information. In the moment of the ritual, during our performance, divisions between performer and the forest people—the trees, the birds, the mist, the wind—dissolved away. For some of us, this moment was the first time ritual expression served as the becoming of the object of the ritual. The dissolving boundaries and resulting connections helped us to match our movements with those of the forest swaying in the wind. The mind was released from what was happening, and footstep instinctively followed footstep in the performing of our hula, motion after motion, until the ritual was complete. Similarly, sounds of chanting flowed as we lost ourselves and became the forest, syllable after syllable, line after line. This ritual allowed us to create and enter into a sacred relationship with this forest; to do this, we left behind mundane considerations and expressed our gratitude for a sacrifice that would provide long-term monitoring data on changes to the health of the forest. In many ways, this event marked an important step in the integration of biophysically defined Western science (concerned with measurable phenomena external to or independent of the measurer) with relationally defined Indigenous science (concerned with observable and sensed phenomena including role of observer in the observed or sensed network of relationships). It reframed impact as redeemable through exchange while clearly elevating the importance of making every effort to honor the sacrifice of a place to science.



Figure 2. Final image created during “‘O Wākea Noho iā Papahānaumoku”, illustrating the Hawaiian Islands birthed by Papahānaumoku.

3.4. Applying Genealogical Relationships and Ritual in Conservation

We have discussed the transformative nature of ritual expression and the elevating of relationship from ideas and concepts to the realm of physically manifested sacred reality. This transformative becoming is powerful because embracing one’s genealogical connection to the world greatly enriches our work as sustainability, natural resources, and conservation professionals. We realize that our effectiveness is influenced by the sacredness with which we engage the places and processes that we steward. We see our ties to a place as akin to our ties with beloved family members, such as a grandparent. In this section, we discuss how we apply and integrate these genealogy and ritual practices in our lives and work as sustainability, resource, or conservation professionals.

Ki'i Ākea—As we have shown, the portal of ritual and its imagery goes beyond human-to-human connections and allows for environmental and elemental beings to become more accessible and relatable to our human experience. The ritual identifies and helps us develop the linkages we have with the other organisms present, the place itself, and the challenges our places face. When we feel connected to a conservation issue of a place, we are able to persist and push through obstacles we encounter because our commitment is not to a job, programmatic theme, or achieving annual statistics, but rather to a family member under threat. This concept of a personal and familial bond is a powerful counter-example to how we humans all too often treat places and processes: enter; take what is needed (be it timber, water, or data); and then when degraded, no longer useful, or no longer funded, abandon.

While there are many examples of agency-based approaches to stewarding place that are positively increasing the well-being of person and place, we suggest that our approach to sustainability, resource management, and conservation could enhance already effective practices. Where approaches are not effective, we suggest that our approach could transform ineffective practices if all practitioners were supported throughout their organization to acknowledge, honor, and engage with their places—the plant people, the animal people, the forest people and the water people, as they would with cherished family members. Through practicing these rituals, recognizing these genealogies, and engaging with places as living, thinking, feeling people, we prepare the internal space and cultivate the awareness for feeling accepted by that place—in short to prepare for being *hānai*'d (raised, reared, fed, nourished, sustained, adopted) by place [27]. Engaging in, practicing, and performing these rituals helps us to embody the idea that we are not separate from (as humans) or in control of (as managers) these places, but that we are enmeshed, or in the words of socioecological systems thinking, that we are part of feedback loops woven into the systems of which we are a part.

Ki'i Honua—

'O Hualālai me Mauna Loa ku'u mau mauna

Hualālai and Mauna Loa are my beloved mountains

'O ke kai mālino ku'u kai

The calm sea is my beloved ocean

'O ka 'eka, ke kai 'ōpua, ke kēhau ku'u mau makani a me ku'u mau ua

The 'Eka (onshore), Kai 'Ōpua (distant horizon clouds), and Kēhau (gentle off shore breeze and dew) are my beloved winds and my beloved rains

Ola!

Life!

In our Hālau 'Ōhi'a journey, at all of the different places we have engaged with throughout our islands and across oceans, we have introduced ourselves to lands and people through our biocultural genealogies and ritual. We present ourselves, not with our name, title, and agency position, but by calling out the name of the mountain of our home: Mauna Kea! Mauna Loa! Hualālai! Kīlauea! Kohala! By dancing in honor of the waterfalls that feed our ancestral food systems. By singing and chanting to the hill, the tree, the birds, and the people that we visit in these special places. In doing this, we are saying, "This is who I am, these are the lands and waters from which I was born, or which now feeds and nourishes me." We are saying, "My extended genealogy honors you."

Ki'i 'Iaka—Some of us take this process to our offices and field sites, teaching our workmates the ritual-based process of engaging new work sites, for example. Letting a place know a visitor's intentions is important to place and to self to create the highest quality work possible for the healing of a landscape or seascape. This sharing of intention through our voices via traditional or new *oli*, through spoken words in the language with which you are comfortable, or even silent thoughts of communication with the place allow us to become more strongly tied to the place, which becomes enhanced through planting, sweating, and working to steward an area. Throughout, we are also learning the patterns of the wind, the path of the animals, and timing of the rain. Over time, we share

details about the place with others. We share its genealogy, the mountain that birthed this place, the rains that feed this landscape, members of its ecological community, and past actions that have left these scars on its substrate. We become responsible for that place through this sharing of genealogies; before we realize it, we have become *hānai*'d by that place.

For those of us who work in environmental education or community engagement to promote biocultural conservation, these same processes can be applied to educational groups. Having the visitors to any site first ask permission to enter begins to open the door to other layers of learning and then understanding. We tell the stories of the place, and for the visitors, that begins to reveal more layers. We have them stop and see what the winds, clouds, and birds are doing—exposing more layers. We ask them to smell, taste, and feel the place—more layers still. Why is this important? Because when you come to know a place on these levels—physically, emotionally, spiritually, intellectually, historically—the place becomes part of your genealogical story and you begin to treat the place differently. This may seem strange to those committed to objective purity, but most conservation educators know it is a personal connection between child and forest plant or animal, the awe of a volunteer in the power of planting a tree knowing that the tree will live 300+ years and support countless generations of forest birds, and the love of place that most often drives people to sacrifice so much for the protection of a place dear and near. It could be argued that connection to and reverence for place is a force like no other in the management of lands, waters and seas, and so for thriving stewardship [22,28].

Thus, ritual can be applied in biocultural conservation and resource management to initiate and develop a person's intimate relationship with a place in order to be better stewards. At another collective level, ritual can be a tool that conservation practitioners use to introduce a place to educational groups as if introducing a family member. Critically, the process of ritual can serve to transform human to human relationships in ways that differ from the ad hoc relationship building or formal team building that happens in most organizations serving lands and seas. We are humbled and inspired by singing to the mountains, forest, ocean, and rivers; by sharing our intentions and offering, giving, and honoring the reciprocal relationship with the places and processes that sustain us, and deepening those reciprocal, kincentric relationships between human and plant, plant and mountain, human and human [29]. These rituals act as accelerators or catalysts for relationship building—in our backyards, our stewardship lands, or when traveling as a group to distant lands.

On this last point, engaging, introducing ourselves to, and humbly thanking our Maori hosts in Aotearoa helped them to know that we were paying attention, that we respected them and their mountains and waters, and that we were humbled by their work. Importantly, we also were able to show that we, too love our places and the many and diverse members of our communities, and in this love of our places, we were able to quickly form intimate relationships with our hosts, their families, and their storied places. For some of us who are used to the professional exchanges and encounters (annual society meetings or agency workshops), this radically different approach with radically different outcomes was profound, intense, soul lifting and a powerful lesson of how ritual can manifest transformation.

We hope that we have shown that ritual creates the space for relating to our environments, to each other, and with visitors and hosts on an intimate level, and that ritual operates at various scales. Applying this learning to the work environment has helped us build these relationships in our work, allowing for conversations and actions that were not possible in Hawai'i just a few years ago.

4. *Pani*—Closing

All of us authors have genealogical connections to lands, rivers, and oceans far from Hawai'i, while some of us are also tied by deep ancestry to places in Hawai'i. What we have learned is that regardless of our origins, we must steward our places as family. We must acknowledge that while we have other ancestral homes, ritual supports our continued understanding of who we are in THIS place. The use of *ki'i* helps us understand perspectives from multiple ways of learning. *Mo'okū'auhau*

(genealogies) and *ko'ihonua* (cosmologies) biogeochemically and evolutionarily connect us to the water that we drink, the food we eat, and the *'āina* we live on as nothing less than our most beloved family member. So, we leave you, the reader, with this. We encourage you to know your mountain, your water source, your socioecological district, and the stories of these places. How did your stream get its name? What have your people and the people who came before called your significant places? How can you better honor your relationship to these places? Can creating art, new stories, *mele*, and *hula* for them provide an avenue for this furthering of connections? Sing to them. *Hula* for them. Be with these places as you would be with a beloved grandparent. Honor these places by knowing their intricacies while working to enhance their well-being with the commitment and love that you might have for the raising of a child or caring for a loved one. By singing to your places, dancing to your mountains, telling stories to your children about your waters, you build community with your children, your places, with your families, neighbors, colleagues, and with yourself. We sing you our final offering:

A Pō Ē

(*Hei & Mele* by Taupōuri Tangarō)

A pō ē, a pō ē

It is night, transitioning to dream time

Kau mai nā hui hōkū

Stars appearing, we are them

A ao a'ela

Day appearing, we are consciousness

Helele'i wale iho nō

Stars fall from the sky, time to awaken

5. *Ho'oku'u* (Release)—What's Next?

Before we depart from a place, we ask permission to leave. So, we ask your permission for release from this ritual expression of engaging you with this article. It is always appropriate to leave *makana* (gifts) of thanks with a host. So, we leave you with the very tools that aided us in our own journey to re-establish our relationship with the genealogies of the places and people of Hawai'i and beyond. First is the *mele* "'O Wākea Noho iā Papahānaumoku," which serves to orient you as a human being to your global, regional, and personal genealogical relationships to Hawai'i and beyond the horizon. To learn this *mele* is to engage one of many of the genealogies of the Hawai'i landscape. To engage the *mele* is to become a part of it.

'O Wākea Noho iā Papahānaumoku [24]

'O Wākea noho iā Papahānaumoku

Wākea resides with Papahānaumoku

Hānau 'o Hawai'i, he moku

Hawai'i is the first-born island child

Hānau 'o Maui, he moku

Maui is born, an island child

Ho'i a'e 'o Wākea noho iā Ho'ohōkūkalanī

Diurnal space turns to nocturnal space, the Dome-of-Space intercourses with She-who-populates-the-night-sky

Hānau 'o Moloka'i, he moku

Moloka'i is the first to be born of the stars

Hānau 'o Lāna'ikaula, he moku

Lāna'ikaula an island child is born

Lili'ōpū pūnālua 'o Papa iā Ho'ohōkūkalanī

Chaos abounds between earth and stars

Ho'i hou 'o Papa noho iā Wākea

Papa reclaims Sky-father

Hānau 'o O'ahu, he moku

O'ahu is born, an island

Hānau 'o Kaua'i, he moku

Kaua'i is born, an island

Hānau 'o Ni'ihau, he moku

Ni'ihau is born, an island

He 'ula a'o Kaho'olawe

Kaho'olawe is born, the royal one

Second, is a template one can use to learn, know, and call out your human and landscape genealogies or *mo'okū'auhau* in a Hawai'i format. The *mo'okū'auhau* is your personal continuum, or genealogical chant. Using the format of the below *ko'ihonua*, or cosmology, you will be able to create your own *mele mo'okū'auhau* or genealogical chant. Though this template provides a Hawai'i context example, the process it illustrates can be applied in landscapes outside of Hawai'i.

Mele Mo'okū'auhau Template

'O _____ no _____

(name of ancestor A i.e., grandmother) (place that ancestor A is from)

Noho iā _____ no _____

(name of ancestor B, i.e., grandfather) (place that ancestor B is from)

Hānau 'o _____, he _____

(child of ancestor A & B = ancestor C, i.e., mother) (gender of ancestor C—"kāne" if male, "wahine" if female)

'O _____ no _____

(name of ancestor C i.e., grandmother) (place that ancestor C is from)

Noho iā _____ no _____

(name of ancestor D i.e., grandfather) (place that ancestor D is from)

Hānau 'o _____, he _____

(child of ancestor C & D = ancestor E, i.e., father) (gender of ancestor E—"kāne" if male, "wahine" if female)

'O _____ no _____

(name of ancestor C i.e., mother) (place that ancestor C is from)

Noho iā _____ no _____

(name of ancestor E, i.e., father) (place that ancestor E is from)

Hānau 'o _____, he _____ (you)

(your name) (your gender)

'O _____ ko'u ahupua'a ma ka moku 'o _____

(traditional land division where you reside) (district where you reside)

'O _____ ko'u pu'ulmauna

(mountain or hill where you reside)

'O _____ ka wailke kai

(fresh water source or ocean where you reside)

'O ka wao _____ ku'u 'āina e noho nei. OLA!

(socioecological zone where you reside)

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