Decolonizing Natural Resource Management: Kānaka Maoli Struggles for Aloha ‘Āina

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Kupulau 2020

Submitted in partial fulfillment of the Master of Natural Resources Degree

*In efforts to decolonize NRM, translations of ‘Ōlelo Hawai‘i can be found at: https://hilo.hawaii.edu/wehe/

**Lessons through art in pāleoleo (rap music) at the beginning of each section can be found on: youtube and/or soundcloud
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He Hōʻuluʻulu Pōkole (Synopsis/Abstract)

*Pidgin is the dialect that I select when I talk
Hiki iā 'oe ke 'Ōlelo Hawaiʻi*

[You can speak the Hawaiian language]
*But tell me can you walk the walk
You say library, I say li-bary
I tell you why I call it the li-bary
'Ćuz that's where they bury all the lies
You can't believe everything you read*

*The words of our kūpuna [ancestors] is all you really need*

–Sudden Rush, "Kūʻē" *[to resist]*, on Kūʻē!! (1997)

This paper examines ways in which natural resource management – NRM – may be decolonized in order to better serve Hawai‘i communities. Expressed needs for diversity in NRM has brought about inclusion of traditional ecological knowledge in recent years. Here, traditional ecological knowledge is redefined as ‘IK, ‘ike kupuna – ancestral knowledge – whereby Kanaka Maoli lifeways are central to responsibly stewarding land, sky, and water. Though sustainability has been hailed as the latest and greatest form of science deployed to combat the ills of the industrial age, indigenous communities around the globe have practiced sustainable science for centuries. Aside from ‘IK, ‘Ōiwi communities also have a long and storied history of resistance to settler-colonial machinations of NRM. Interdisciplinary approaches to enhancing NRM are recognized as being critical, though political aspects of NRM are often excluded as irrelevant, impertinent, and inapplicable to both the study and practice. This paper addresses this imbalance in NRM by examining opposing worldviews magnified by political inconsistencies in Hawai‘i. So unavoidable are the politics that determine natural resource management in Hawai‘i that Kānaka ‘Ōiwi continue to struggle against some of the most powerful political actors in the world – powers attempting to dictate the direction of the environment, economy, and society in Hawai‘i from afar. Three Kānaka Maoli struggles for aloha ‘āina are outlined, occurring on Kahoʻolawe, Honokāhu, and Maunakea, to illustrate the resilience and adaptive capacity of Lāhui Hawai‘i in envisioning a more sustainable nation for generations to come. Whereby ‘IK is not merely incorporated, but is the driving force behind transforming the politics of land, sky, and water stewardship in Hawai‘i.

Keywords:
* Alohā ‘Āina: Love for the environment; Hawaiian Nation patriot(s), (ism)
* Kānaka Maoli, Kānaka ‘Ōiwi: Aboriginal peoples of Hawai‘i
* Lāhui Hawai‘i: Internationally-recognized, lawful, independent nation-state of Hawai‘i
* Kūpuna: Kānaka Maoli ancestors
* Mālama ‘Āina: Environmental stewardship
* Palapala‘āina: Map
* Ki‘i: Picture
He ‘Ōlelo Hoʻakāka (Introduction)

Love to the aliʻi [chiefs] and the makaʻāinana [commoners]
We're relatives to Papa [Mother Earth] and Hāloa‘anaka
[name of the first Kanaka, who was still-born and when buried, grew to be the first taro plant]
Return to the land because ʻāina [the environment] needs Kānaka [Hawaiians]
They threw my Queen in prison and we still say Onipaʻa [immovable, steadfast, resolute]
–Punahele, at UH Mānoa East-West Fest 2019

When thinking of natural resource management – NRM – many might imagine work pertaining exclusively to the environment. Often unaware that much of the work has to do with interactions, relationships, and collaborations between people, as well as place. Social aspects of NRM serve as the cornerstone by which the practice is built (Callicott, 1990). As such, the society guiding the principles of NRM in a given region is of utmost importance. Values of various peoples around the world are reflected in their NRM policies, strategies, and practices. Clear differences are evident in how a country – or community – weighs the environment, economy, and society in NRM decision-making processes. Each measure of which is critical to overall health and well-being (WCED, 1987). As global communities rush to act locally in the fight against human-induced climate change crises brought on by the Industrial Age, societal worldviews in relation to NRM are – perhaps – more important now than ever before (Pelling & High, 2005). The need for communities and countries to make NRM shifts ranging from slight to monumental is magnified in the race to save the planet. Time is of the essence as Earth's temperature continues to climb toward its tipping point (IPCC, 2015). Reimagining the ways NRM may best contribute to the environmental, economic, and societal well-being of planet and people is necessary in mitigating what has come to be known as an existential threat to both
Sustainability has been touted as the framework from which to work in achieving a balance of the triple bottom line (Littig & Griessler, 2005). The foundation of sustainable natural resource management is echoed by many in the definition put forth by the United Nations-sponsored World Commission on Environment and Development (1987), whereby sustainable development, "meets the needs of present generations without compromising the ability of future generations to meet their needs and aspirations." This ethic, documented over three decades ago, must be prioritized when producing next-century NRM strategies.

Irresponsible environmental, linear economical, and oppressive societal NRM policies, strategies, and practices have permeated Hawai‘i for centuries (Chang, D., 2015; Korhonen et. al., 2018). Under U.S. occupation, Hawai‘i has been transformed from a place of sustainability to one of commodity (Goodyear-Ka‘ōpua & Kuwada, 2018). Whereby everything can be bought – including conservation districts, sacred sites, even entire islands (Laracy, 2001; Johnson, 2004; Casumbal-Salazar, 2017). Environmentally, one of the most biodiverse places in the world has become the extinction and endangered species capital (Stone, 1999). Economically, linear models funnel local dollars out of the islands at alarming rates (Florido et. al., 2019), and the societal relationship between Lāhui Hawai‘i and the U.S. has been contentious for over a century of occupation (Mei-Singh & Vicuna Gonzalez, 2017).

For 127 years, Kanaka Maoli have been resisting U.S.-imposed proclamations of authority enforced via gunboat diplomacy. By way of military occupation – paired later with a unilateral joint resolution when a bilateral treaty of annexation was defeated twice by the Kānaka Maoli struggle known as the Kūʻē petitions – the U.S. has been occupying a Hawai‘i that achieved international recognition as an independent nation-state in 1843 (Chang, W., 2015). The landing of Marines aboard the USS Boston on Hawai‘i’s shores in January of 1893 would later be described as an "act of war" by then-president Cleveland who sought to restore the rightful, lawful, constitutional monarchy headed by Queen Liliʻuokalani (Goodyear-Kaʻōpua, 2014). Therefore, it should be made clear that Hawaiian is a nationality, as opposed to an ethnicity. The insatiable appetite of the U.S. for war and empire has been catastrophic for the sustainability of Hawai‘i (Cachola et. al., 2019). Since the Spanish-American War, not only has Hawai‘i's national neutrality been compromised by the U.S. (Bailey, 1931), but so too has the guidance of an ‘Ōiwi worldview for addressing the environment, economy, and society in the islands' NRM strategies.

**E Hemo Kolonaio (Decolonization)**

*Love for my people, not a heart filled with hatred  
But how can these non-Hawaiians say our sacred sights ain't sacred  
It's the dark-side killa, shake your 'uliʻuli  
Hawaiian patriots here to make the system huli  
[to overturn; to upset, as any system of government or society]*

–Punahele, "Māui [The demigod and trickster who snared the sun] Pulling Down the Sun", from Pau Hana Sessions (2019)

Calls by NRM agencies and organizations for more diversity in the field may create space for what has become known as TEK, traditional ecological knowledge, to transform NRM as we know it today (Thomas & Mohai, 1995; Brown et. al., 2010; Pascua et. al., 2017). Places like Hawai‘i that are under occupation – effectively suppressing TEK – are, perhaps, perfectly-positioned for the pivot needed in order to achieve 21st century NRM objectives. In applying TEK to NRM in Hawai‘i, strategies grounded in ‘IK – ‘ike kupuna, ancestral knowledge – are likely best-suited to usher in more sustainable futures. After all, it is ‘Ōiwi who have sustainably engineered and fostered some of the world's most advanced agroforestry, agriculture, and aquaculture systems in Hawai‘i for millenia. The decolonizing of methodologies, curriculums, and minds has uncovered pathways through which communities may actually reach those goals.

Gaining in popularity, especially in indigenous communities often subjugated, marginalized, and exploited by Euro-centric notions of knowledge – decolonizing methodologies has emerged as a brand-old looking glass from which to view NRM. Tuihiwai-Smith et. al. (2016) describe the colonization process as one that purposefully set out to extinguish indigenous institutions and ideologies and supplant them with those founded on a settler-colonial worldview. Therefore, the process of decolonizing minds and methodologies challenges deeply-seated conceptions of knowledge and makings of meaning across a wide array of disciplines,
institutions, generations, and boundaries (Tuhiwai-Smith et al., 2016). Datta (2018) describes decolonized research as methodologies that not only validate indigenous voices and epistemologies on the same level as Euro-centric knowledge, but centers them in scientific studies where they often exist in the periphery. Yellow Bird (2008) calls for decolonized curriculum that empowers communities to overcome the many forms of oppression experienced by indigenous peoples in efforts toward critically-conscious nation building. While construction of theoretically-decolonized frameworks and methodologies is crucial, Goodyear-Kaʻōpua (2014) takes the case of Hawaiʻi a step further in a call to action, whereby any form of decolonization in the islands must include the deoccupation of Hawaiʻi and the returning of the lands, air, and waters to the constitutional Kingdom of Hawaiʻi.

Problems related to emphases on Euro-centric epistemologies in an occupied Hawaiʻi's NRM has overshadowed enlightened ‘IK-based stewardship practices for far too long. This paper examines three aloha ‘āina-led movements rooted in ‘IK that serve as examples of how more sustainable environmental, economical, and societal NRM strategies may succeed in achieving more prosperous futures for Hawaiʻi. Kānaka Maoli struggles at Kahoʻolawe, Honokahua, and Maunakea provide blueprints for which environmental, economic, and societal concerns in a U.S.-occupied Hawaiʻi may decolonize NRM in favor of ‘IK-based stewardship within the metes and bounds of a restored Lāhui Hawaiʻi.

‘O Kahoʻolawe

*Shout out to Goku because Goku was our only hero*

*Because they killed George Helm and they killed Kimo Mitchell*

*The cops locked up my kūpuna for speaking Hawaiian*

*The teachers beat up my kūpuna for speaking Hawaiian*

*They tried to kill our culture by killing our language*

*I ka ʻōlelo no ke ola, I ka ʻōlelo no ka make*

[Hawaiian proverb meaning, "In language is life, in language is death"]

–Punahele, "Hoʻomau ke Ola" [Life goes on], on From Beneath Mt. Kaʻala (2018)

Known as the pathway to Kahiki [Tahiti], Kahoʻolawe has been a place where Kānaka navigators hone their skills, where an invaluable adze quarry has enabled ʻŌiwi to engineer sustainable tools, and where Maoli continue to practice religious ceremonies today (Kanahele, 1995; Collerson & Weisler, 2007). Revered as a kinolau [earthly embodiment] of Kanaloa [the name of one of the four primary gods], Kahoʻolawe – the only island in Hawaiʻi to share its name with a god – has always been held sacred by Kānaka Maoli (Reeve, 1995). Just south of Maui, across the ‘Alalākeiki [name of the ocean channel between Maui and Kahoʻolawe], Kahoʻolawe was at times considered a moku [land district] of Maui and some refer to it as the fetus of Maui due to its peculiar shape. Though mismanagement of the island has occurred under U.S. occupation as well the Kingdom, the former has undoubtedly committed far more egregious and offensive forms of degradation and desecration to Kahoʻolawe. While the Kingdom did unleash ungulates upon the island, it is the U.S. who used it for bombing practice in preparation for wars spanning from WWII to Desert Storm (Blackford, 2004). Surely, restoration efforts related to re-establishing Hawaiʻi’s forest ecosystems damaged by feral ungulates have been successful (Warren, 2004). Removal of UXO – unexploded ordnance – on Kahoʻolawe, meanwhile, has proven to be much more difficult (Inafuku, 2015). It appears an insatiable appetite for empire compelled the U.S. to cause irreparable harm to an island long heralded as one of the major eight mokupuni o Hawaiʻi [islands of Hawaiʻi].


It wasn't until the 1970s that Kānaka Maoli organized to stand in direct opposition, and even direct line of fire, to the bombing of Kahoʻolawe conducted by U.S. naval forces (McGregor, 2004). Protect Kahoʻolawe ʻOhana [family] – PKO – was formed to do exactly what their name suggests. Led by ʻŌiwi youth, PKO showed courage in speaking truth to power as they took on the most formidable military force in the world. A movement founded on aloha ʻāina, PKO would call on the U.S. to cease fire on Kahoʻolawe (Blackford, 2004). For those in
and supporting PKO, the U.S. Navy was in clear violation of environmental ethics, perpetuated the military-industrial complex economically, and was responsible for desecrating – perhaps more accurately, obliterating – the sanctity of Kahoʻolawe as recognized by Kānaka Maoli (Kanahele, 1995). The environment, economy, and society of Kahoʻolawe would never be the same after being abused as target practice by U.S. forces – due in large part to inaccessibility of the island caused by UXO (Inafuku, 2015). Many argue that Hawaiʻi in its entirety has not been the same since the PKO movement. PKO’s request/demand would finally be granted after years of activism, though two Kanaka ʻŌiwi – George Helm and Kimo Mitchell – would pay the ultimate price for patriotism (Trask, 2000). As Kahoʻolawe heals from decades of destruction perpetrated by a U.S. worldview, the work of PKO continues and the lives of those lost are forever etched in the collective memory of Lāhui Hawaiʻi.

ʻO Honokahua

My good memories hurt so I'm hardly gettin' sleep
A pagan in my ways I'm a pervert and a creep
They say ignorance is bliss, but I don't wanna be no sheep
They tried to bury us, they didn't know that we were seeds
I serve in that lead, but the ʻāina is the chief


Home to some of Hawaiʻi’s most pristine rainforests, abundant streams and oceans, and entire valleys dedicated to kalo cultivation, Honokahua has been central to the survival of
Kānaka for millenia (Handy, Handy & Pukui, 1972). Located at the northwestern-end of the westside's coastal tourism industry on the island of Maui, Honokahua is now home to some of the swankiest properties in Hawai‘i. Luxury hotels playing host to the millions of Hawai‘i’s visitors per year have overrun the coastline (Spirandelli et. al., 2016). The tourism industry has become the focal point of a linear economy in the islands, whereby locally-generated income is funneled into the coffers of multi-national corporations (Konan, 2011). Before the advent of the airplane, when visitors could only access Hawai‘i by sea, the islands' environment, economy, and society was still largely agriculture and subsistence based (Winter et. al., 2018). As soon as visitors could fly to Hawai‘i, they did so in droves, reaching 7.5 million in 2007 (Konan, 2011). Big Ag – sugarcane and pineapple – as well as subsistence lifeways were supplanted by the visitor industry as the economic driver of a fragile island chain. Today, many of Hawai‘i's jobs are in service of the visitor industry, putting the livelihoods of Hawai‘i's people in the hands of foreign actors and funneling Hawai‘i's earnings into the pockets of wealthy international investors. Less known about Honokahua is that it is considered one of the breadbaskets of the region for Kānaka Maoli (Handy, Handy & Pukui, 1972), though the visitor industry under U.S. occupation in Hawai‘i has compromised the lands and waters – as well as absorbed the labor force – needed to sustainably nourish large populations.


The Ritz-Carlton Kapalua (RCK) is a luxury hotel in Honokahua that stands in infamy, as well as a reminder for Kānaka Maoli that the politics of struggle are critical elements of NRM. Beginning construction on the coast, RCK would soon encounter a situation for which they had not planned, and for which they resisted to acknowledge. As heavy machinery prepped the site for construction, they unearthed what would be identified as human remains. Equipped with a U.S.-fostered, capitalistic worldview backed by all the necessary construction permits, developers pushed for crews to complete contracted work, resulting in the desecration of hundreds of iwi kūpuna. Winds began carrying whispers reaching Kānaka communities on Maui and ʻŌiwi immediately organized in efforts to halt construction of – and further desecration by – RCK. The idea that the mighty visitor industry was allowed to excavate iwi kūpuna [ancestral
remains] unimpeded went to show just how much sway tourism-centered economies have garnered in Hawai‘i. When ancestral remains tied to the people and to the place are dug up and tossed aside for so-called progress, social capital of the visitor industry is bankrupt in the eyes of Kānaka ‘Ōiwi.

Through the work of organized Kānaka Maoli, RCK worked with State of Hawai‘i officials to move the hotel uphill, away from burials, and off the coveted coast. Governor Waihe‘e would delegate the task of assessing RCK’s relocation to the Board of Land and Natural Resources. RCK received $6 million worth of subsidies to move their luxury resort uphill – about $12 million of Hawai‘i taxpayers monies today when adjusted for inflation (Johnson, 2004). This state-sponsored bail-out has also saved a multi-national corporation from challenges on the horizon for most of the luxury hotel industry – and potentially millions more dollars spent – in respect to managed retreat from coastlines projected to be impacted by an estimated sea-level rise of about 3ft. by the year 2100 (Kane et. al., 2015). Though Kānaka are effectively displaced from the coastlines where the visitor industry is allowed to dig, fill, build, and profit – Honokahua stands as a testament to the ‘IK of ‘Ōiwi ancestors, the continued survivance of Kānaka Maoli in all of Hawai‘i, and to the perversion that not even Kānaka who have entered the afterlife are safe from the ravages of U.S. empire fueled by a capitalistic worldview.

Aside from building social capital, the aloha ‘āina struggle at Honokahua has been influential in the political realm, whereby formations of both the State of Hawai‘i Island Burial Councils, as well as the United States' Native American Graves Protection and Repatriation Act in 1990 provide further protections from desecration of unmarked burial sites (Salmoiraghi, 2008). Honokahua also brought attention to the importance of shoreline conservation in Hawai‘i’s natural resource management efforts that often focus on forested lands. Shorelines dominated and desecrated by the visitor industry continue to be a major threat to responsible, sustainable natural resource management in Hawai‘i. Therefore, Kānaka Maoli must continue to struggle for aloha ‘āina from ridge to reef.

‘O Maunakea

92 arrests, I will gladly be the next
An x across my chest makes for good target practice
This is not civil unrest, it's interest to divest
Kānaka Maoli defending what kūpuna left

–Inalihi, "Saddle Road Cipher, Part 1", from Pau Hana Sessions (2019)

Maunakea, on the island of Hawai‘i, has been revered by Kānaka as the most sacred mountain in all of Hawai‘i for millenia. Maunakea is also known as Mauna a Wākea, the home of "Father Sky" in Kānaka cosmology (Brown, 2016). Not only is Maunakea the tallest mountain in Ko Hawai‘i Pae ‘Āina [the Hawaiian archipelago], but when measured from the sea floor – is the tallest mountain in the world (The Smithsonian Institution, 2002). Its peak is likely to be the the first land mass Kānaka navigators laid eyes on in their maiden voyage from Kahiki [Tahiti].
Described as an alpine desert, Maunakea gathers snow each winter, something not very many people may imagine when thinking of Hawai‘i (Eiben & Rubinoff, 2014). Maunakea also supports a vast network of native, endangered, and endemic non-people communities including everything from insects, plants, and birds (Eiben & Rubinoff, 2010; Walker & Powell, 1999; Hess et al., 2014). As one of two watersheds serving the island (Michaud & Wiegner, 2011), Maunakea is critical for gathering, filtering, and distributing wai [water] for both people, as well as non-people communities on Hawai‘i.

While efforts are being made to improve the environment on Maunakea, the astronomy economy atop the mountain threatens to offset those gains, and is positioned in direct opposition of the mountain's sanctity as recognized by Kānaka Maoli (Eiben & Rubinoff, 2014; Brown, 2016). The green-lighting of telescopes atop Maunakea by State of Hawai‘i and University of Hawai‘i officials has been justified as a next-gen economy since Hawai‘i sought to recover from the 1960 tsunami that wiped out livelihoods in Hilo (Ciotti, 2010). Kānaka claim that the astronomy industry – in cooperation with the State of Hawai‘i and University of Hawai‘i – has been given carte blanche to degrade the environment, monopolize the mountain's economy, and desecrate the sanctity of Maunakea (Brown, 2016). The proposed construction of the thirty-meter telescope – TMT – with a 5-acre footprint both above as well as below ground, within a designated conservation district on Maunakea has ignited one of the most contentious aloha ʻāina struggles in the current millenium (Casumbal-Salazar, 2017). Kīʻi Mauna [mountain protectors] – composed mainly of Kānaka Maoli – have organized to form one of the world's most progressive, peaceful, and innovative movements of activism and civil disobedience in opposition to the proposed construction of TMT atop Maunakea. Supporters of the TMT claim the project will serve all of humanity, provide financial support for college students on Hawai‘i, and produce quality jobs for residents of Hawai‘i (Ciotti, 2010).

Rooted in Kapu Aloha [non-violence], the Kū [stand/rise up] Kia‘i Mauna movement has gained momentum, garnering worldwide support gone viral due in part to the participation of celebrities including Jason Momoa, Dwayne "The Rock" Johnson, Kelly Slater, and Damian "Jr. Gong" Marley. TMT supporters, though, boast of its status as an international project, whereby
Japan, India, China, Canada, and CalTech are all contributing to the telescope's construction (Ciotti, 2010). With a pricetag of $1.4 billion, State of Hawai‘i and University of Hawai‘i officials seem all too eager to prop open the gates for foreign, multinational corporations while literally locking Kānaka out from their constitutional access to ancestral lands atop the mountain (Casumbal-Salazar, 2017). The question of what will happen atop Maunakea remains, and the answer will likely determine whether NRM on the mountain will operate under a Kānaka Maoli, or an American worldview. Whether or not the TMT is built, it's clear that a new wave of ‘Ōiwi resistance to American notions – as well as staunch support for ‘IK – of and within NRM is rising.

He Kālaimanaʻo (Discussion)

Why fight over a piece
When you can have the whole Pae ʻĀina [Hawaiian Archipelago]
Proof is in the paʻi ʻai [hard, pounded but undiluted taro], no taro pie
Want a taro field, done
Taro-rise, the proof is in the paʻi ʻai
No taro pie
Want a taro field, done
Taro-rise, 200 years so we wave our hae [flag]

–Homework Simpson, "I live in the (Kingdom)", 2018

The work – and lives – of past aloha ʻāina continue to inspire, guide, and unite struggles for ‘IK in Hawaiʻi NRM. For instance, the aloha ʻāina movements of Kahoʻolawe and
Honokāhua have brought about some of the changes needed to reflect more sustainable NRM in Hawai‘i. In respect to Kaho‘olawe, an aloha ‘āina movement organized to halt bombing of, as well as repatriate, Kanaloa from the grips of the mighty U.S. Navy. While Kaho‘olawe has been returned to the people of Hawai‘i, its restoration will be much more difficult. NRM efforts to re-establish native vegetation are marred by UXO littered throughout the island, effectively limiting planting projects aimed at mitigated soil erosion currently at the rate of two tons per year. The Honokahua aloha ‘āina movement showed the fake state, as well as the visitor industry that it's not okay to disturb and unearth ‘Ōiwi remains. In addition to protecting the bones of ancestors, the Kānaka Maoli struggle at Honokahua has also protected Ritz-Carlton Kapalua from NRM concerns related to sea-level rise, a phenomena that has properties along the coast frantically considering various forms of managed retreat, as well as seawalls shown to be detrimental to shoreline retention. Struggles for aloha ‘āina on Maunakea are showing the world, as well as the astronomy industry, that construction on Hawai‘i sacred sites will be challenged at multiple levels and in a number of arenas. Each of the Kānaka Maoli movements for aloha ‘āina discussed – as well as the dozens not included in this paper – addresses shortfalls in the environmental, economical, and societal aspects of NRM in an occupied Hawai‘i.

\[14 \times 26\]


Whether it's a stretch of coastline, hectares of mountain summits, or entire islands, Kanaka Maoli have shown strength, unity, adaptive capacity, and resilience in fostering ‘IK and resisting American hegemony in NRM. Environmentally, aloha ‘āina struggles saved an island from bombing, a hotel from sea-level rise, and – in the case of TMT – a conservation district from development. Economically, aloha ‘āina movements have questioned linear economies
driven by U.S. military, visitor, and tech industries. Societally, aloha ‘āina struggles have been resilient in resisting settler-colonial claims of authority and dominion over the lands, skies, and waters of Hawai‘i. Though learning lessons from our past are deemed critical, the politics of NRM in an occupied Hawai‘i continues to fail the people of Hawai‘i. Therefore, Kānaka Maoli movements for aloha ‘āina will persist – namely in struggles for people and non-people communities to simply exist in the lands, skies and waters of Hawai‘i. If we are to learn from freedom fighters like Gandhi and Douglass, then we must refrain from committing the sin of science without humanity and must not patiently ask, but urgently demand change from those in power. In the case of Hawai‘i, a change from NRM to mālama ‘āina based-on and guided-by ‘IK. To be clear, some of these changes might include:

- **Eco-tourism** – As the main economic driver, second only to the military in terms of furthering environmental degradation, and as the biggest employer in an occupied Hawai‘i, tourism must be transformed to reflect more sustainable futures. For instance, instead of patronizing high-end, multi-national merchants, visitors should be made aware of locally-owned and operated businesses that support a circular economy. This would allow visitors to invest with their pocketbooks in addition to investing time and energy through volunteering projects like beach cleanups and planting projects.

- **Environmental Justice** – Legal battles related to the protection of natural resources wage on in an occupied Hawai‘i, whereby private corporations attempt to gain control of public utilities. Whether fighting for the restoration of streamflow from the mountain to the ocean in de-watered communities; halting the use of harmful pesticides, herbicides, and other chemicals in seed corn industries run by multi-national corporations like Bayer Monsanto, Dow Chemical, and DuPont Pioneer; or stopping waste water treatment facilities from pumping partially treated sewage into the ocean – struggles within the realm of U.S. law must be fought in order to keep offenders in check.

- **Circular Economies** – Transitioning away from vulnerable, fragile, and linear economies like tourism is critical if Hawai‘i communities are to live more sustainably in an occupied Hawai‘i. The current COVID-19 pandemic has laid bare the constraints of an economy dependent on visitors and a society beholden to imported goods. Many families around the world find themselves furloughed, laid-off, and waiting in long lines at food banks in the midst of this pandemic. Instead of engaging in efforts toward finding solutions for transitioning to a circular economy free from the chains of multi-national corporations, many are insisting on returning to business as usual. The need to feed their families is often cited, though circular economies that support, promote, and prioritize locally owned and operated businesses are more equipped to effectively do so.

- **Community-Driven NRM** – As NRM decision-making processes exist today, community input, suggestions, and meetings are deemed sufficient for issuing permits, codifying rules, and enacting laws impacting the environment, economy, and society of an occupied Hawai‘i. It's abundantly clear, though, that community input and suggestions either fall on deaf ears, or worse yet, are completely ignored. Merely listening to and considering the voicing of community concerns, and then proceeding with projects the people are in opposition of may further linear economies, but does little to build upon moral ethics and social capital central to bringing about more sustainable futures. Queen Lili‘uokalani (1898) made the position of
Hawai‘i clear during the attempted – and twice defeated – annexation of Hawai‘i to the U.S. at the turn of the 20th century when she insisted that the voice of the people is the voice of God. Here, it becomes clear that NRM must not simply weigh public testimony in decision-making processes, but that NRM must be community-driven.

- ‘IK – ‘Ike kūpuna (*ancestral knowledge*) must be central to NRM initiatives in Hawai‘i. Whereas the popularized use of TEK, traditional ecological knowledge, often refers to lifeways once practiced by indigenous communities before coming to a crashing halt under colonization. ‘IK recognizes distant, as well as contemporary ancestors whose knowledge is ever-evolving into progressing epochs. Here, a call for ancestral knowledge to transition from the museum to modernity is crucial. While many would relegate Kānaka knowledges and lifeways to a faraway past, it is critical to acknowledge the continuance, survivance, and evolution of ‘IK in an occupied Hawai‘i, whereby ‘Ōiwi persist in producing multi-pronged solutions for some of the 21st century’s most pressing NRM problems. Hawaiian-language preschools like ‘Aha Pūnana Leo (*Language Nest*), Hawaiian-immersion public K-12 schools like Kula Kaiapuni Hawai‘i (*Hawaiian Surrounding School*), and numerous ‘Ōiwi-centered charter schools like Ke Kula ‘O Nāwahīokalani‘ōpu‘u (*Nāwahīokalani‘ōpu‘u is the name of a Hawaiian Kingdom patriot who lived during – and vehemently struggled to resist – the annexation of Hawai‘i to the U.S.*) has had to struggle for opportunities to actively perpetuate ‘IK in an occupied Hawai‘i.

**He ʻŌlelo Hoʻoholo (Conclusion)**

_E iho ana o luna, E pi‘i ana o lalo_
[What is above will be brought down, what is below will be lifted up]

_To my Kānaka, hui pū and hume your malo_
[To my aboriginal peoples of Hawai‘i, organize and bind your loincloth]

_Huli ka lima i lalo_
[Turn your palms down]

_Mākaukau ke kipi kalo_
[Prepare the taro mound]

_Paepae hou nā pā pohaku_
[Re-stack the stone walls]

_Inu i ka wai ‘awa ‘awa straight out your ‘apu_
[Drink the bitter waters straight out your coconut shell cup]

_And don’t forget to keep your aloha kapu_
[And don’t forget to keep your love consecrated]

_Nā kāne, nā wahine, a me nā mahū_
[Men, women, and gender non-conforming communities]

–Pumehana Howard, "Aloha ʻĀina ʻOia‘i‘o" [genuine/authentic patritotism/love for the land], from Pau Hana Sessions (2019)
Aloha ʻāina struggles across Ko Hawaiʻi Pae ʻĀina continue the fight for ‘IK (ʻike kupuna, ancestral knowledge)-based NRM strategies more aligned with the values of the people of this place. Due to the centrality of an American worldview in an occupied Hawaiʻi, the power of language is critical in pivoting toward more sustainable mālama ʻāina – NRM – strategies. The reestablishment of ʻŌlelo Hawaiʻi as the dominant language in the islands will be central to shifting away from an Americanized worldview toward mālama ʻāina [environmental stewardship] – a type of land, sky, and water stewardship rooted in ‘IK. Modalities of learning, teaching, and expressing knowledge must also undergo a makeover, whereby various forms of ‘IK are weighed as – if not more – heavily than Euro-centric notions of science, scholarship, and academia. ʻŌiwi sciences embedded in the songs, stories, chants, and dance of Kānaka Maoli inform the stewardship strategies from which ‘IK-based mālama ʻāina is implemented. Just as Kānaka lifeways are nurtured, lāʻau kamaʻāina [native trees, shrubs, and groundcovers] – must also be given preference in planting projects in Hawaiʻi. Their superior abilities to store carbon, enhance returns on investment, and foster culturally significant cultivars make them prime candidates for re-vegetating landscapes negatively impacted by NRM in an occupied Hawaiʻi dominated by alien species. In addition, culturally-significant vegetation provides much of the habitat crucial to the survival of endangered and endemic wildlife in the islands. ʻŌiwi environmental engineering is some of the world's most sustainable, whereby ahupuaʻa [land division usually extending from the uplands to the sea] models of stewardship adhere to the discipline of ridge to reef management while simultaneously propelling a circular economy and nurturing cultural resiliency.

This paper – through the examination of three Kānaka Maoli movements for aloha ‘āina – has attempted to shift the popular focus of NRM from flora and fauna, soil and water, and other non-people communities to the actual managers managing so-called natural resources. Here, politics governing NRM in Hawai‘i must not be overlooked, nor relegated as inconsequential, irrelevant, and inapplicable to achieving mālama ‘āina initiatives. Ultimately, Hawai‘i must be deoccupied in order to fully decolonize NRM in the islands. Agency and autonomy must be restored to Lāhui Hawai‘i in a monumental shift toward more sustainable futures realized by an ‘Iki-based mālama ‘āina ethic founded on an ‘Ōiwi worldview. In the meantime, NRM in Hawai‘i must initiate native ecosystem restoration projects in efforts to rejuvenate the environment. Enhance circular economies by re-directing funding for violent and vulnerable industries including tourism, tech, and military-, law enforcement-, and prison-industrial-complexes toward investments in decolonized education, sustainability, equality, and diversity. Societal ills brought on by the politics of NRM in an occupied Hawai‘i must be confronted by ensuring proposed projects on – or in – the lands, skies, and waters of Ko Hawai‘i Pae ‘Āina are community-, as opposed to corporately-driven. With no end in sight to the American Empire's illegal occupation of Hawai‘i, it’s clear to Kānaka that pīpī holo paio – the struggle continues.
Pakuhi Paʻa ‘Aukā 1 (Bar Graph 1)

Pakuhi Paʻa ‘Aukā 1: Lifetime carbon dioxide (CO2) equivalent Lifetime CO2 Equivalent of Carbon Stored in Alien and Native Trees of Hawaiʻi of carbon stored in pounds. Superiority of ecosystem services provided by native trees in respect to storing carbon over their lifetime is shown. Tree diameter at breast height was submitted as twelve inches. Each tree variety will likely exceed twelve inches over their lifespan. Data gathered from i-tree at https://mytree.treetools.org/
Pakuhi Paʻa ʻAukā 2 (Bar Graph 2)

Pakuhi Paʻa ʻAukā 2 illustrates a correlation between CO2 stored and its estimated monetary value. It is important to keep in mind that the i-tree tool prompt asking to enter tree diameter at breast height was submitted as twelve inches. Tree dbh for each variety will likely exceed twelve inches over their lifespan. Data gathered from i-tree at https://mytree.itreetools.org/
### He Papa Helu (Table)

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Latin Name</th>
<th>Inoa Hawai‘i</th>
<th>Alien/Endemic (Lilleeng-Rosenberger)</th>
<th>Lifespan (yrs.)</th>
<th>Growth Rate (ht./ft./yr.), (dbh/ in./yr.)</th>
<th>Mature DBH (in.)</th>
<th>Mature Canopy (ft.)</th>
<th>Mature Height (ft.)</th>
<th>Kānaka Cultural Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norfolk Pine</td>
<td>Araucaria heterophylla</td>
<td>Pine</td>
<td>A</td>
<td>&gt;150</td>
<td>24&quot;</td>
<td>60</td>
<td>100</td>
<td>‘A‘ohe (None)</td>
<td></td>
</tr>
<tr>
<td>Koa</td>
<td>Acacia koa</td>
<td>Koa</td>
<td>E</td>
<td>100+*</td>
<td>5' first 5yrs*</td>
<td>39+*</td>
<td>20-40+ **</td>
<td>15-115 **</td>
<td>‘Oia (True)</td>
</tr>
<tr>
<td>Silky-Oak</td>
<td>Grevillea robusta</td>
<td>‘Oka-kilika</td>
<td>A</td>
<td>50-150</td>
<td>36&quot;+</td>
<td>45</td>
<td>150</td>
<td>‘A‘ohe</td>
<td></td>
</tr>
<tr>
<td>‘Ōhi‘a</td>
<td>Metro-sideros polymorpha</td>
<td>‘Ōhi‘a</td>
<td>E</td>
<td>LL</td>
<td>0.10&quot;</td>
<td>48</td>
<td>10-40</td>
<td>50+</td>
<td>‘Oia</td>
</tr>
<tr>
<td>Jacaranda</td>
<td>Jacaranda mimosifolia</td>
<td>N/A</td>
<td>A</td>
<td>40-150</td>
<td>36&quot;</td>
<td>15-30+</td>
<td>10-50</td>
<td>‘A‘ohe</td>
<td></td>
</tr>
<tr>
<td>Wili-wili</td>
<td>Erythrina sandwicensis</td>
<td>Wiliwili</td>
<td>E</td>
<td>LL</td>
<td>50-60</td>
<td>50+</td>
<td>‘Oia</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**He Papa Helu.** This table helps describe six trees commonly found in Hawai‘i. Data gathered from the following:

* [https://www.fws.gov/refuge/hakalau_forest/wildlife_and_habitat/koa.html](https://www.fws.gov/refuge/hakalau_forest/wildlife_and_habitat/koa.html)
* [http://nativeplants.hawaii.edu/plant/view/Acacia_koa](http://nativeplants.hawaii.edu/plant/view/Acacia_koa)
* [Jacaranda; https://selectree.calpoly.edu/tree-detail/jacaranda-mimosifolia](https://selectree.calpoly.edu/tree-detail/jacaranda-mimosifolia)
* [Silky-oak; https://selectree.calpoly.edu/tree-detail/grevillea-robusta](https://selectree.calpoly.edu/tree-detail/grevillea-robusta)
* [Norfolk pine; https://selectree.calpoly.edu/tree-detail/araucaria-heterophylla](https://selectree.calpoly.edu/tree-detail/araucaria-heterophylla)
He Kiʻikuhi Wene *(Diagram)*

Above is a diagram constructed using Vensim software. The diagram depicts an original conception of Hawaiʻi's circular economy (HCE) under and over U.S. occupation. To read the diagram, start at the HCE box and follow the arrows downward, then upward, and finally back through the HCE box. The two arrows from the HCE box have a negative and positive sign, respectively. The positive sign represents continued U.S. occupation, while the negative sign portrays a de-occupied Hawaiʻi. Subsequent positive signs depict movement in the same direction as the last, while subsequent negative signs illustrate a shift of movement toward the opposite direction. For instance, "Hawaiʻi’s circular economy under occupation empowers the fake State of Hawaiʻi, who empower multinational industries, who desire development, which perpetuates illegal occupation, which fails to recognize an absence of treaty, which fails to recognize the Kingdom of Hawaiʻi, fails to recognize the subjects of the Hawaiian Kingdom, fails to recognize Crown and Government Lands, fails to properly care for Hawaiʻi's lands and waters, and fails to propel Hawaiʻi's circular economy". Conversely, "Hawaiʻi's circular economy de-occupied does not recognize the fake State of Hawaiʻi, does not prioritize multi-national industries, does not empower development, does not perpetuate illegal occupation, does recognize the absence of treaty, recognizes the constitutional Kingdom of Hawaiʻi, does empower Kanaka agency, recognizes Hawaiʻi's crown and government lands, properly cares for Hawaiʻi's lands and waters, and propels Hawaiʻi's circular economy". Both Hawaiʻi under and over occupation are color-coded for ease of use.
He mau Kūmole (References)


