

I Pa‘a Hou i Kalou:

A Natural and Cultural Resource Assessment for Waiale‘e, O‘ahu, Hawai‘i



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Photo: A contemporary aerial view of Waiale‘e, showing Kalou fishpond in the foreground fronting former kalo lands (Kristian McDonald, 2019)

Abstract

This report examines the natural and cultural resources of Waiale‘e, O‘ahu, asking 1) How can the natural and cultural resources of this place be understood through a contemporary Kānaka ‘Ōiwi perspective? 2) What are the customary Kānaka ‘Ōiwi resource management systems? And 3) How might these customary resource management systems be restored? To address these questions, I utilized archival search, literature review, field methods, social approaches, and geospatial analysis. Key outputs include a comprehensive description of traditional place names and folklore of the district; a characterization of mid-19th century land use practices in the ahupua‘a, and a preliminary deliniation of Kalou Marsh. These findings stand to affect the future management of Waiale‘e, which is currently being negotiated. Further, they may inform future approaches to place-based and culturally-grounded research in Hawai‘i.

INTRODUCTION

Problem and Motivation

Kānaka 'Ōiwi, the indigenous people of Hawai'i, historically implemented diverse resource management systems which sustained a large human population for centuries while maintaining high biodiversity and ecosystem function (Kurashima et al., 2019; Winter et al., 2018; Kirch, 2007). By contrast, in the past two centuries, following increased global influence, Hawai'i's landscapes have been drastically altered by extractive land use regimes. These include the over-harvesting of 'iliahi (sandalwood, *Santalum paniculatum*), extensive cattle ranching, plantation agriculture, and urbanization (Kame'elēhiwa, 1992). At present, development pressure remains high, and invasive species continue to wreak havoc on intact native ecosystems (HISC, 2016). In addition, the effects of climate change are projected to further reduce productivity of Hawai'i's agricultural and ecological systems (Giardina *et al.*).

Given past, ongoing, and anticipated impacts, it is increasingly vital to protect *kīpuka*, or refugia, of natural and cultural resources which remain intact or possess high restoration potential (McGregor, 2007; Underwood, *et al.*, 2013). At any given time, there are far more worthwhile landscapes to protect and restore than can be accomplished with available resources. As such, prospective restoration sites are often prioritized when a compelling opportunity to influence their management arises; for example, when a property with high restoration potential is listed for sale.

The creation of this assessment was motivated by one such opportunity. In 2014, I first learned that the University of Hawai'i (UH), was looking to close its 130-acre Waiale'e Livestock Research Station and relinquish its management of the land to another State agency (Figure 1). As a lifelong resident of the immediate area, I intuitively understood the scenic, recreational, agricultural, and cultural values of Waiale'e, and became concerned for its future in light of this proposed land transfer. I conducted preliminary observations and literature review, which further suggested that Waiale'e is a *kīpuka* where diverse marine, aquatic, and terrestrial resource management systems were once implemented; and that these resources remain intact enough to allow for impactful restoration.

The impending change in land management and promising preliminary findings motivated me to pursue the creation of this Natural and Cultural Resource Assessment for Waiale'e, O'ahu. The fundamental objective of this assessment is to provide a foundation of environmental and cultural knowledge for Waiale'e so that it can be considered in planning the future stewardship of the place, regardless of the specific managing entity. As of this writing, UH has yet to finalize a land transfer or identify an alternative use for the property.

This assessment was conducted in partial fulfillment of the Masters' of Environmental Management program of the Natural Resources and Environmental Management (NREM) at the UH Mānoa. I chose to pursue this project via NREM not only because of the program's relevance but also because the department is nested within the College of Tropical Agriculture and Human Resources, the specific entity of UH which manages Waiale'e.

Background and Knowledge Gap

To date, assessments of environmental and cultural resources conducted for Waiale'e have remained brief and general. For the most part, Waiale'e's resources have only been mentioned in passing as part of broader anthropological (McAllister, 1933; Handy and Handy, 1972; Kikuchi, 1973) and biological (Elliot and Hall, 1977; Madden and Paulsen, 1977) studies, or described in documents required for regulatory compliance (H. Mogi, 1980; AECOS, 2000; Gerald Park Urban Planner, 2014).

Though also a brief mention, an interesting outlier to published works mentioning Waiale‘e comes from the renowned Hawaiian historian John Papa ‘Ī‘Ī. Originally published in 1869 as part of a serialized article in *Nūpepa Kū‘oko‘a*, a Hawaiian Language newspaper, the passage was also later included in the compiled English translation of this series, Fragments of Hawaiian History (‘Ī‘Ī, 1983). ‘Ī‘Ī describes Waiale‘e as: “He aina maikai keia a lako pono hoi,” a beautiful and well-supplied land, citing its *loko* (fishpond), *lo‘i* (taro patches), and abundant reef.

Focused research attention has been paid to the Waiale‘e Training School for Boys, which operated from 1903-1950. However, the theses, dissertations, and technical reports produced on this subject were primarily concerned with the history, social dynamics and efficacy of this institution rather than the place where it existed (Miller, 1938; Thompson, 1953; Porteus, 1949). In addition, the Waiale‘e Livestock Research Station has been the site of many published studies since its establishment in 1961. Like the studies relating of the boys’ school, those from the research station did not emphasize the place-specific attributes of Waiale‘e. Rather, literature published from the research station focused primarily on the commercial raising of cattle, sheep, poultry, and swine (As examples; Komkris et al., 1965; Yang and Chou, 1985; Weems et al., 1994).

In summary, academic and technical literature has yet to consider the natural and cultural resources Waiale‘e holistically or in terms of their intrinsic value. Also, with the exception of ‘Ī‘Ī (1869) and Kikuchi (1973), none have done so from an explicitly indigenous or local perspective. To be fair, this could be said of most places in Hawai‘i, and likely most places globally. Perhaps this is because historically, relatively few within academic arenas have viewed producing such publications as interesting, rigorous, or otherwise worthwhile; or that those interested in such knowledge have not historically chosen to, or had access to, the publication process. Regardless, this knowledge gap remains for Waiale‘e, as it does for many places, and I contend that its pursuit is justified by the foregoing motivation section.

This work is also unique for Waiale‘e in its completion by a kama‘āina, or long-term resident of the immediate vicinity, and one of Kānaka ‘Ōiwi ancestry. With respect to those who have closer connections to Waiale‘e, I do not claim lifelong ties specific to that ahupua‘a. However, having been raised and continuing to live in Paumalū, two miles from the border of Waiale‘e, I am pili (literally, stuck) to the region as a whole, and am personally familiar with the dynamic qualities of the place from the perspective only acquired via *noho a kupa*, or prolonged residence (Lopes, 2015). In addition, over the course of conceiving and pursuing this project during the past six years, I have developed a much closer understanding of and relationship to Waiale‘e specifically.

Objective and Questions

Stated again, the fundamental objective of this assessment is to provide a foundation of environmental and cultural knowledge pertaining to Waiale‘e so that it can be considered in planning the future stewardship of the place, regardless of the specific managing entity. To do so, I posed three guiding questions, each regarding the ahupua‘a of Waiale‘e:

- 1) How can the natural and cultural resources of this place be understood through a contemporary Kānaka ‘Ōiwi perspective?
- 2) What are the customary Kānaka ‘Ōiwi resource management systems?
- 3) How might these customary resource management systems be restored?

Approach and Methods

Approaching these questions, I employed diverse categories of methods, broadly grouped into four categories: archival search and literature review, field methods, social methods, and geospatial methods. In the following sections, I will elaborate on the general techniques used for each of these categories. Multiple methods categories were used to address each question. Each of the three forthcoming “parts” of this report deals with one of my posed research questions. At the beginning at each part, I further elaborate on the suite of methods used in answering that particular question.

Archival Search and Literature Review

These two methods sub-categories are distinguished in that literature review is applied to published academic papers and technical reports, while archival search generally refers to the acquisition of unpublished primary source documents. Nonetheless, both of these method sub-categories involve the same general process of accessing various online databases and physical archives, applying key search terms to acquire relevant documents, and excerpt the most relevant information from those documents.

Source Acquisition

Relevant repositories, virtual and physical, were identified through personal experience and expert consultation. I aimed to access the maximum number of repositories expected to contain information relevant to my questions. The primary repositories consulted include Papakilo Database, Kīpuka Database, UH Hamilton Library, Hawai'i State Archives, and Bishop Museum. Certain repositories, while they likely contain relevant information, were not considered within the scope of this study due to the high effort required to sift through their vast collections, and the uncertain relevance of their holdings, compared to other repositories which are both more easily accessible and more promising in terms of yield. Examples of potentially valuable repositories not accessed include the State of Hawai'i Bureau of Conveyances and the City and County of Honolulu Department of Planning and Permitting.

Across primary sources and secondary literature consulted, “Waialeale” and “Kalou” were the main search terms used to identify relevant documents. Throughout the review process, other search terms, such as the names of specific sites or influential people, were identified and applied iteratively depending on the nature of information available within a given repository.

Land tenure documents associated with the historic “Great Māhele” comprise a major category of sources consulted. In brief summary, the Māhele (literally meaning ‘to divide’) was a series of events, circa 1850 C.E., by which Kamehameha III, King Kamehameha III, divided his sole interest in all lands of Hawai'i between himself, the other high-ranking chiefs, and the Hawaiian Kingdom government, reserving the rights of *hoa'āina*, or native ahupua'a tenants, to their respective house sites and cultivated agricultural lands. In order to claim their *kuleana*, or land parcels, *hoa'āina* were required to complete an application process involving several types of legal documents. First, a document of register was required to initially assert the individuals' claimed property. Testimony from at least one other individual, verifying some or all of these claims was also required. Third, a boundary survey and physical description was needed. If all of these steps were completed correctly, barring objection from the government or local *konoiki* (ahupua'a land manager), the *hoa'āina* was awarded a Palapala Ho'okō, or Land Commission Award (LCA), providing provisional recognition of their claim. Upon further application and payment of a fee, the claimant was issued a Palapala Sila Nui, or Royal

Patent (RP), establishing allodial (approximately, “fee-simple”) title to the awarded portions of their claim (Preza, 2010; van Dyke, 2008).

The documents associated with the 14,195 claims made across Hawai‘i have since been recognized as an invaluable resource for studying mid-19th century land use and social structure in Hawai‘i, although this was not their originally-intended purpose, and despite critiques of the Māhele’s outcomes (Kame‘elēhiwa, 1992; McGregor, 2007). Increased recognition of these documents’ value is evinced, in part, by the Office of Hawaiian Affairs’ sponsorship of digitizing all Māhele documents and making them publicly available via the text-based Papakilo Database and geospatial Kīpuka Database. These services have substantially increased the accessibility these documents, which previously could only be found in the State Archives, often only on microfilm. This project benefitted from both Kīpuka and Papakilo databases as the primary means of accessing Māhele documents.

Historic local newspapers represent a second major category of sources consulted within the archival search. *Nūpepa* (Hawaiian language newspapers) comprise the largest repository of indigenous language publication in Native North America and the Polynesian Pacific (Nogelmeier, 2010). Digitization efforts have made these newspapers available, and to some extent searchable, though limited by the capacity of automated optical character recognition technology to recognize these irregular documents and the currently small extent of hand-transcribed documents.

Historic, Hawai‘i-based English-language newspapers also provide information pertinent to natural and cultural resource assessment. Like Hawaiian *nūpepa*, efforts to digitize English language newspapers have made the consideration of such sources much more feasible. For this study, English newspapers were accessed online via the Library of Congress’ Chronicling America program, as well as Newspapers.com.

Various other types of archival documents were acquired throughout the search process. These included both spatial sources, such as historic maps, aerial photos, and other photographs; textual sources such as personal communications, legal documents; and meeting minutes, and oral sources, such as interview transcripts and recordings.

The process of acquiring academic and technical publications as part of the literature review followed much the same process as the archival search for primary source documents. However, such publications were typically found in physical libraries by applying my search terms to their respective catalogs, as opposed to in archives or online databases.

Where allowed and practical, I attempted to actually acquire each relevant source for convenient access and reference throughout the project. I downloaded all digital files possible, and for physical sources which could not be checked out, I scanned or photographed relevant pages. I organized all of these sources by type into nested folders with Zotero, a free and open source reference management computer program.

Document Analysis

Once source documents were acquired and organized, but prior to analysis, hand-written documents required transcription to provide more efficient and consistent legibility. This included digitized Māhele documents as well as hand-written documents found from physical archives. Transcription also provided the added benefit of searchability. Newspaper articles were not transcribed, as they were searchable in their existing PDF format. The remaining sources were simply considered in their existing form as scanned images or physical documents.

I used a qualitative coding process to extract relevant information from literature and archival sources. In answering question one, I utilized a structured coding approach based on

the Papakū Makawalu framework, further discussed in Part 2. Whereas for questions two through four, I employed a more open approach to coding, allowing phrases directly found within the source texts to inform the categorization of codes and themes. In all both cases, certain findings prompted additional, targeted literature review to add clarity, or further define otherwise esoteric references found from the primary search.

Where document review revealed quantitative figures, such as the number of lo'i claimed by an individual, quantitative analyses were conducted, where deemed relevant. Where maps and/or textual descriptions of geographic information were provided, they were included in the geospatial analysis.

Field methods

Kilo is the customary Hawaiian practice of keen environmental observation, including that of the heavens, earth, and living beings. Increasingly, the practice of *kilo* is being re-adopted by Kānaka 'Ōiwi as a means of understanding the natural world from an indigenous perspective. Often, such observations are conducted periodically in relation to solar (annual) and lunar (monthly) calendars, so as to identify cyclical correlations among observed phenomena.

Though not formally trained in specific methods of *kilo*, I did conduct regular intentional, immersive qualitative observations of Waiale'e. These visits were not ultimately done with any prescribed regularity, though doing so would be a valuable future undertaking. Nonetheless, during my field visits to Waiale'e, I did carry the intention to *kilo* and conduct myself in a manner consistent with the cultural knowledge that has been shared with me over time. Generally, I would offer one or more oli, or chants throughout a days' field work, whether to greet the kūpuna (ancestors) of the place, ask for knowledge and understanding, and give thanks upon departure. Photographs and field notes further enhanced *kilo* observation.

In addition, I arranged one-day in-field water quality assessment, conducted by Graydon "Buddy" Keala, a *loko i'a* (Hawaiian fishpond) expert and practitioner. Ten samples measuring temperature, dissolved oxygen, and salinity were taken with a YSI, (tm), digital water quality meter. Keala offered these findings, along with qualitative observations from his expertise, in the form of a brief summary (Appendix B).

Social Approaches

Social approaches were also used to acquire information about Waiale'e. The most basic of these was informal conversations with long-time residents, influential stakeholders, and others involved with Waiale'e. Only one of these conversations was recorded and transcribed in a semi-formal manner. The remainder are only summarized in the form of field notes. I pursued repeated interactions with many of these individuals, some as short as a few minutes, others exceeding two hours. The intent of these interactions was less concerned with extracting interesting quotes, as it was with building relationships with these people via regular communication, reciprocal information sharing, and general camaraderie. Though not yet recorded in a formal manner, their valuable knowledge has colored the interpretation of my other results and the overall presentation of this report.

Workshops and group gatherings were also organized in tandem with this undertaking. Though I partook in the planning of many such events, none of them were explicitly organized as extensions of this research process. Most consisted of applied discussions related to the current situation at Waiale'e. Data from these events comes from my observations as a participant, and where applicable, the final reports or summaries produced for these gatherings.

Geospatial Methods

The final major category of methods utilized in this project was geospatial. First, I arranged for a colleague to conduct an Unmanned Aerial System (UAS), or “drone,” survey of the vicinity of Kalou Marsh, the present-day wetland in Waiale‘e. He subsequently produced a high-resolution orthomosaic, or spatially-referenced composite image, of this study area. Combining his orthomosaic was combined with publicly available data layers and novel layers digitized from spatially-explicit archival sources, I created visualizations and conducted analyses related to each of my questions. In particular, I emphasized a geospatial suitability analysis in addressing question three, relating to the restoration of customary resource management.

Papakū Makawalu

Papakū Makawalu is an analytical method developed by Dr. Pualani Kanaka‘ole-Kanahele, and is approximately translated as ‘analyzing a subject from multiple perspectives.’ This approach identifies three “houses” of knowledge derived from the Kumulipo, a well-known genealogical creation chant. The first house, Papahulihōnua, studies dimensions of the earth; namely, geological formation, fresh water, and the ocean. Papahulilani, the second house, includes elements of the atmosphere and celestial sphere. The third house, Papahānaumoku, embodies all living things (Nu‘uhiwa, 2019). I drew upon my working understanding of the Papakū Makawalu methodology as the primary framework for embodying “a Kānaka ‘Ōiwi perspective.” This approach was particularly applicable to part one, where it is further discussed.

Overview of Physical Location and Geography

This brief general description is provided so the reader may better understand the location and major geographic features of Waiale‘e, and thus better appreciate the following sections. Waiale‘e is an ahupua‘a (land division) within the moku (district) of Ko‘olaupoko on the north coast of O‘ahu (Figure 2). Waiale‘e includes approximately one mile of shoreline, spanning from Kūka‘imanini islet in the east, where it is bordered by the ahupua‘a of Pahipahi‘ālua, to Nanapohaku rock [*sic*] in the west, where it is bordered by the ahupua‘a of Kaunala (Wall, 1902). From their respective intersections with the coast, the palena, or boundaries, of Waiale‘e follow essentially straight lines ma uka (inland), and meet at elevation of approximately 650 feet, forming a wedge shape enclosing approximately 733 acres (Webster, 1851). Since traditional ahupua‘a boundaries also included the marine environment (Murakami and Tanaka, 2015), the palena of Waiale‘e also extend ma kai into the sea, at least to the edge of Waiale‘e’s fringing reef.

Throughout the remainder of the report, I generalize the geography of Waiale‘e in terms of four distinct zones, which listed beginning from the ocean and moving inland, are: *kai*, the nearshore marine environment; *kula*, a gently-sloping coastal plain; *pali*, a steep sea-cliff, and *uka*, an undulating upland plateau.¹ The wetlands of Kalou marsh and fishpond represent a key sub-zone of Waiale‘e’s *kula*. Kalou Marsh is a present-day palustrine² wetland, approximately 20 acres in size, historically utilized as lo‘i kalo (taro pondfields), and Kalou Fishpond is a semi-intact, historic freshwater fishpond situated within Kalou Marsh. Other key geographic features of Waiale‘e include the hills of Pu‘u Kainalapa [*sic*] and Pu‘u Kauweweole [*sic*], which are located in the *uka* zone and serve as physical markers for the eastern palena of Waiale‘e (Webster, 1851). Kūpahu Gulch marks the western boundary of

¹ The terms for these geographic zones are derived from those used by kama‘āina in Māhele land documents.

² A non-tidal, inland wetland with fresh salinity; that is, containing <0.5 parts per thousand ocean-derived salts.

Waiale'e, running seaward from uka to kai. Waiale'e gulch and stream run through the eastern portion of the ahupua'a through all geographic zones (Wall, 1902).

Figure 1. A Current View of Waiale'e Highlighting Key Features.

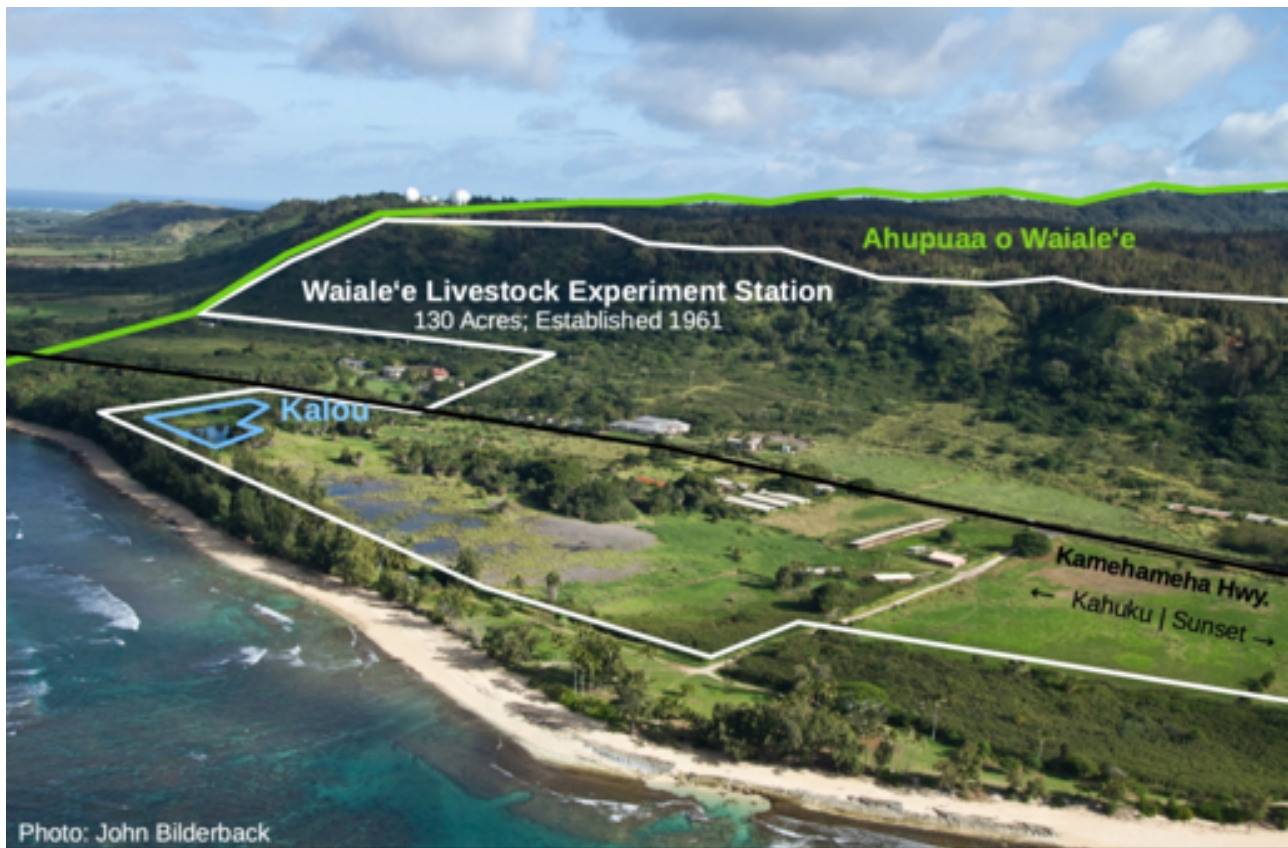


Figure 2. Waiale'e, O'ahu [left] in the Broader Region of Kahuku Lewa.



PART 1: NATURAL AND CULTURAL RESOURCE ASSESSMENT

This section presents results relating to question one: How can the natural and cultural resources of Waiale‘e be understood through a contemporary Kānaka ‘Ōiwi perspective? Papakū Makawalu served as the overarching framework for achieving a “contemporary Kānaka ‘Ōiwi perspective.” I applied a modified approach to the five steps of Papakū Makawalu outlined by Nu‘uhiwa (2019). “The natural and cultural resources of Waiale‘e” served as my papakū, or topic, of analysis. The diverse repository of documents derived from my archival search and literature review, including land records, newspapers, chants, and scientific studies, served as the “database” of sources informing this analysis. Using qualitative coding methods, I extracted information and categorized it according to the three domains of Papahūlihōnua, Papahūlilani, and Papahānaumoku, and appropriate sub-categories. I analyzed and interpreted this data primarily individually, instead of via intentional group discussion. However, as part of my social approaches, conversations and meetings with key stakeholders provided both raw data as well as and interpretive perspectives for this analysis. Kilo, or in-field observation, was also an important step of this iterative undertaking. All of this information was reconstructed and synthesized in the forthcoming written section, as well as in photographs, maps, and other visual aids.

PAPAHULIHONUA: That of the Earth

Nā Pōhaku: Geology

Kahuku Lewa: an Customary Geological Understanding

According to *ka‘ao*, or Kānaka ‘Ōiwi mythology, Waiale‘e is a part of Kahuku Lewa, a landmass once separate from, but ultimately attached to, north O‘ahu. Waiale‘e is particularly significant to Kahuku Lewa as it is the location of Kalou, one of two inland ponds marking the location where Kahuku Lewa was attached to O‘ahu. The second pond where Kahuku Lewa is attached, Polou, is located in the ahupua‘a of Keana.

One version of this *ka‘ao* credits the *kupua* (demigod) Māui with fastening Kahuku Lewa to O‘ahu. A reference to this version, told by J.A. Kahiona, originates from a 1919 issue of *Ka Nūpepa Kū‘oko‘a*. Unfortunately, the original issue is not currently available via online repositories and thus was not accessed at this study. Nonetheless, Sterling and Summers (1978) provide a translated excerpt from this clipping: “It [Kahuku] was a land that moved to and fro and it was Maui who pinned it down again. Polou and Kalou are deep water holes ... All of the islands know the tale that Kahuku was an unstable land.”

Kahiona also authored several other newspaper articles mentioning Kahuku Lewa, which were found on online repositories. Though valuable, the references to Kahuku Lewa are often brief, and nestled amid otherwise contemporary commentary (Kahiona, 1920; 1922; 1923). A more comprehensive reference to this *ka‘ao*, in the form of a *mele*, or poetic composition, is entitled, *E Kūiia ana a Lawa Pono Na Wahi Pana Lei Kau A-i no Kahuku Lewa*, which figuratively ‘strings’ a lei for Kahuku Lewa through reference to the region’s *wahi pana*, storied places. One excerpt reads,

A polou au, ua louia a paa,
I ole e oni o Kahuku Lewa,
O ka lua o ka lou hukaia a paa,
I ole e panee ka holo ohope

I reached Polou, hooked and fastened,
So that Kahuku Lewa would not stir,
The second of the hooks secured,
So that it would not slide back [to the sea].

Though this composition was only signed with a pseudonym, one might suspect that Kahiona is the composer of this mele, based on his numerous other references to Kahuku Lewa in the early 1920s, and the relative scarcity of other writers doing so at that time (Kahuku Plantation, 1922).

A second account of this ka'ao describes Kahuku (the addition of "Lewa" was excluded here) as an "islet that was floating in the sea near the mainland," which, during stormy weather, would "crash against" O'ahu and create "awful noises." The ka'ao credits "two old women guardians," Lā'ieikawai and Malaekahana, with setting out to stop this noise. These women fashioned two wooden fishhooks and attached them to olonā rope. Swimming out to Kahuku, they fastened these hooks to either end of the islet, reeled it back to shore, and attached those lines to two large boulders. Once the land settled and the noises ceased, the women removed the hooks, leaving depressions which became the ponds of Kalou-wai (Kalou) and Kalou-kai (Polou) (Taylor, 1935).

Both versions of the ka'ao of Kahuku Lewa can be interpreted to reflect an 'ōiwi understanding that the geological formation of the Kahuku plain was distinct from that of the the adjoining Ko'olau mountain range. Explained in Western scientific terms, Kahuku Lewa, like many coastal plains across the archipelago, was formed during the an epoch when the sea level was much higher than it is at present. This allowed for the formation of expansive reefs around the perimeters of islands, which upon lowering of the sea level became their characteristic coastal plains (Takasaki and Santos, 1969).

Ka Wai: Hydrology

Without offering further explanation, one Hawaiian dictionary translates Waiale'e as "bounding water" (Andrews-Parker, 1922). Although this translation is not intuitively derived,³ the definition does accurately characterize Waiale'e as the border of a hydrological region. To the east, throughout Kahuku Lewa, abundant groundwater once formed numerous ponds; to the west, outside of the region, such springs were never found.

The hydrological features of Kahuku Lewa are mentioned in multiple ka'ao of Kāne and Kanaloa, two primary *akua* (dieties) of Hawaiian thought. Among many other manifestations, Kāne is associated with fresh water and Kanaloa is associated with the salt water. Many ka'ao recount their travels as companions throughout Hawaii, often drinking 'awa and creating springs. A ka'ao typical to this genre was recounted in vicinity of Waiale'e, near Kawela bay, by early 20th century kama'āina Luika Kaio and Kahiona Apuakehau.⁴ In this account, Kāne created a spring, henceforth aptly named Waikāne, along the pali of Hanaka'oe so the people of that area would no longer need to go into the valley to fetch water (McAllister, 1933). Though no such story is recorded for Waiale'e, a "Kāne stone" is noted to have been in the vicinity of Kalou (*Ibid.*) Furthermore, as a recognized part of Kahuku Lewa, Waiale'e is nonetheless related to the broader associations of Kāne and Kanaloa in this region.

'Āina Wai: Wetlands

Waiale'e once contained significant freshwater wetlands, which included Kalou, a two-acre *loko wai*, or freshwater fishpond (Kikuchi, 1973), and approximately 30 acres of *lo'i kalo*, or taro pondfields (Wall, 1902)⁵. Because the wetland in Waiale'e, now called Kalou Marsh, was historically managed for agriculture, reconstructing what it may have looked like prior to human modification is a matter of conjecture. However, if the currently-unmanaged

3 i.e. arrived at by applying published definitions of constituent syllables of a word to deduce its meaning.

4 Perhaps a relative, if not alias, of the aforementioned J.A. Kahiona.

5 Wetland area calculated by digitizing a line demarcating "perimeter of kalo land" from Wall (1902).

at which purification from past misfortunes was sought. Kamakau distinguishes pōhaku o Kāne from *heiau* and other types of religious sites, such as the *ko'a*, or shrines, for the god Kāneko'a, which were “set up along the banks of rivers, streams, and shore and inland ponds for the increase of 'o'opu [goby] fishes” (*Ibid.*). Despite the distinction, it is plausible that given the association with a form of Kāne, the presence near an inland pond, and the particular association with 'o'opu,⁶ that the “Kāne stone” referenced in McAllister (1933) may have been a *ko'a* for Kāneko'a, as opposed to a pōhaku o Kāne. Alternatively, both types of shines may have been found in this area. Further discussion of the customary management of Kalou is found in Part 3.

Contrasting Kalou's Kāne stone, “a stone known as Kanaloa” is said to have existed near Polou fishpond in Keana (McAllister, 1933), suggesting a spiritual dichotomy between the extremities of Kahuku Lewa. The alternative names for Kalou and Polou, respectively Kalou-wai and Kalou-Kai, further correlate to the commonly-understood domains of Kāne and Kanaloa (Taylor, 1935).

Summarizing his narrators' accounts, McAllister (1933) shared a further description of Polou: “Formerly it was possible to dive into the pool and when a depth of 40 fathoms was reached, a shelf of rock was found upon which to rest. Forty fathoms deeper *punakea* (white line from coral) was reached and on looking toward Malaekahana, the hook by which Kahuku was made fast could be seen. This hook was intricately fashioned of Kawila [*sic*] (*Alphitonia excelsior*).” Though no such description of Kalou is found, this account may suggest that Kalou, like many of the ponds throughout Kahuku Lewa, is also connected to deep waterways passages.

Aquifers

Like the above description of Polou, other accounts of extensive subterranean waterways exist for Kahuku Lewa, suggesting an 'ōiwi understanding of groundwater storage and transport. Most notably, *ka'ao* tell of a Kahuku woman who once placed her kapa-making log into a pond, identified in variations as Punaho'olapa, Waiakaole, or Waiakalai, where it disappeared. Thinking her anvil was stolen, she traveled searched for it through many districts until finding it being used at Waipahū, Waikele, 'Ewa, by a woman who claimed she had found it in a spring there. Ultimately, the two discovered that the log had reached Waipahū via an underground waterway, which was later proven when a bundle of tī leaves placed in the Kahuku Pond was again found at the Waipahū spring. Thus, the Waipahū spring was named Ka-pukana-wai-o-Kahuku, “the water hole of Kahuku” (Na Wahi Pana o Ewa, 1899; Thrum, 1911; Sterling and Summers, 1978).

Again, though this story does not apply directly to Waiale'e, it does reflect how water sources in this region are customarily understood. From a Western scientific perspective, the aquifers of Kahuku Lewa comprise both basal and dike-impounded variants. Outside of the dike zone, which forms a buffer along the crest of the Ko'olau range, water sources are basal in origin. The dike zone intercepts Kahuku Lewa from Kawela to Waiale'e. A U.S. Geological Survey report states of this zone, “An undetermined quantity of dike water escapes to the surface at shoreline seeps. Some of this water has been ponded and is used for irrigation” (Takasaki and Valenciano, 1969). Thus, perhaps the water feeding Kalou and the lo'i of Waiale'e originates in part from dike zone.

Streams

6 A dictionary search of le'e redirects to 'o'opu le'e, or 'o'opu lehe, a large male of the 'o'opu nākea, “so called because its lip (lehe) is said to show when it hides in the mud” (Pūku'i and Elbert, 1986). Thus, one interpretation of Waiale'e could be “'o'opu le'e water.”

Though groundwater is the primary hydrological feature of Waiale'e, at least two intermittent streams are naturally associated with the ahupua'a: Waiale'e and Kūpahu. The coastal portion of Pahipahi'ālua stream also enters the sea at Waiale'e, though it is unclear whether this was the case prior to its channelization in the early 20th century.

Nonetheless, Pahipahi'ālua is relevant to the streams of Waiale'e. A *lele*, or discontinuous land division, of Pahipahi'ālua is located within Waiale'e and bounded by Waiale'e stream. The ma uka border of the lele is at Waihī, an intermittent waterfall of Waiale'e stream, and Waiale'e stream forms the eastern border of this lele. In its illustration, one historic map suggests that a secondary branch of Waiale'e stream once existed, forming the western boundary of the lele of Pahipahi'ālua. Examining the name of this ahupua'a and its lele suggests reference to *'ālua*, the number two, a concept further reinforced by the reduplication of "pahi." The most common definition of pahi is "knife." Though never used itself as a verb, pahi does suggest the act of cutting. The related word pa'ipa'i does so more directly, meaning "to trim, prune, cut, [or] clip." Aside from their similar meanings, these pahi and pa'ipa'i can be further related, perhaps even viewed as cognates, via other variants pahipahi, a children's hand-slapping game, and pa'i, to slap (Pūku'i and Elbert, 1986). Several Māhele claims included alternative spellings for this place name, including Paipaialua, and Paipaialua, further supporting an interpretation of this place name as "cut in two." This definition would pay homage to the division of the main ahupua'a and lele, the two stream branches designating the bounds of that lele, and perhaps even the mythical separation of Kahuku Lewa. This interpretation also questions the only previously-published translation Pahipahi'ālua, "double-edged cutting instrument," for which no customary basis is provided or found through this study (Andrews-Parker, 1922).

PAPAHULILANI: That of above; the celestial sphere and atmosphere

Kilo Lani: Celestial Observaiton

Globally, celestial bodies are used as important natural indicators of seasonality and direction, bearing applications for subsistence, navigation, and religion. For Kānaka 'Ōiwi, celestial observation often occurs at designated sites possessing favorable view planes. Heiau and other spiritual structures were often constructed around such sites. Alignments of stationary features were identified naturally or constructed across the landscape to help measure mark significant celestial events.

There are no heiau identified within the ahupua'a of Waiale'e, and no alignments marking celestial events are known, to date. A small heiau is located in the adjacent ahupua'a of Pahipahi'ālua, but the originally-intended purpose of the heiau is not known (Williams and Patolo, 1998). Further study is needed to determine if celestial observation was, or could effectively be conducted at this heiau, or anywhere in the vicinity of Waiale'e.

Ka Lā – the Sun

Throughout the year, the sunrise can only be observed from over the land in Waiale'e. The places where sunrise can be viewed earliest and most completely likely occur at points along the eastern edge of Waiale'e, such as Kūka'imanini islet, Pu'u Ka'āinalapa, or Pu'u Kauwewe'ole. Given Waiale'e's western face, sunset is visible from Waiale'e for the entire year, except for a couple of weeks surrounding the winter solstice, when the sun sets behind Ka'ena point.

Ka Mahina – the Moon

Though few references to the moon specific to Waiale'e were found, a 1905 letter of I.L. Pahukula, Waiale'e resident, to *Nupepa Kuokoa* indicates that the traditional moon calendar was still considered at this time. The author recounts a disagreement among neighbors regarding whether the current moon phase was "Hua" or "Mohalu." Pahukula further relays that he facetiously suggested his neighbors consult an issue of *Nupepa Kuokoa* as a "solution" to this dispute, knowing that it would be of little use. In conclusion, the author criticized *Nupepa Kuokoa* for following only the Gregorian calendar and not publishing the traditional moon phases, tides, and times of sunrise and sunset (Pahukula, 1905).

Nā hōkū – the Stars and Planets

The northwestern aspect of elevation contours in Waiale'e allows for favorable viewing of hōkū setting in *Ho'olua*, the northwestern quadrant of the horizon, throughout the ahupua'a. However, the viewing of rising stars (in the quadrants of *Ko'olau*, northeast, and *Malanai*, southeast), or stars setting in *Kona*, the southwestern horizon, is impractical in this ahupua'a (PVS, 2020). No archival references for Waiale'e were found to be particularly significant to stars or planets.

Ka Makani: Wind

The only wind name found which is noted specifically for Waiale'e is Kumuma'oma'o (He Moolelo no Kamapuaa, 1891). One plausible interpretation of Kumuma'oma'o is "source of greenery." Kumuma'oma'o winds are also found in Kaluako'i, Moloka'i, and Ka'ena, O'ahu, and in both cases are noted as easterlies. Kaluako'i and Ka'ena are similar to one another, but different than Waiale'e, in their location on the western extremities of their respective islands. For these leeward locations, the greening effect of a moisture-laden east wind on local vegetation is easily visualized. A similar, albeit more subtle, effect may also be observed at Waiale'e, leading to the adoption of this name. Additionally, 'kumu' may refer to kumu pali, or the 'base of a cliff, a definition that correlates with Waiale'e's physical geography. If the Kumuma'oma'o of Waiale'e is in fact an easterly, it would reach Waiale'e from over the northern Ko'olau mountains, perhaps delivering moisture from higher elevations, down over the green cliff face of Waiale'e.

The next-closest place-based wind name is Pe'apueo for Kaunala, the ahupua'a located just west of Waiale'e (*Ibid.*; Nakuina 2005). 'Pueo' may refer to the short-eared owl, or the adjective 'short.' The most likely wind-related definitions of pe'a include a contraction of 'ōpe'ape'a, the Hawaiian Hoary Bat; sail, as of a canoe; or 'kite' (Pūku'i and Elbert, 1986). Without more context, it is difficult to ascertain which of these meanings may apply to the wind at Kaunala.

Manu (winged-creature) references also apply another wind in the region, the 'Ahamanu wind of the ahupua'a of Kahuku (Nakuina, 2005), which is most likely translated as "gathering of birds." This translation may refer to the various different types of birds that once existed in the Kahuku region, some of which are still seen today; the honeycreepers of the forest, such as the 'ō'ū (Dominis, 1993); to the 'alae 'ula, of Kahuku's extensive wetlands; to seabirds, such as mōlī, or Laysan albatross, which currently frequent Kahuku's coastal areas.

Malulua is noted by a kama'āina of this region as being a steady west wind described as being hard on plants. (Clark, 2014). In other locales, Mālualua is also noted as a strong wind, but from the North (Pūku'i and Elbert, 1986). The aforementioned kama'āina also describe Kipu as a "very strong, stormy, gusty wind that continually changes directions" which

“knocks down plants and trees.” Lastly, they mention kona and moa’e as two other winds (Clark, 2014).

Ka Ua: Precipitation

No known traditional rain names are noted as to Waiale’e or the immediately surrounding areas. That said, the aforementioned wind name of Waiale’e, Kumuma’oma’o, may bear connotations of moisture, perhaps orographic precipitation. The nearest geographically-associated rain names are for relatively distant portions of Ko’olauloa. The Ma’akua rain is seen at Hau’ula and Makao. Kīkēhala is noted for Punalu’u. Nāulu is found from Kualoa to Kahana. A Nāulu rain is also found at Ka’ena, and throughout Waialua. In general, nāulu can also refer to a sudden shower in any location. Ki’owao refers to cool wind accompanied by moisture or fog common in high elevations on all the Hawaiian islands. It is specifically attributed to clouds settled high on hills of O’ahu (Akana and Gonzalez, 2015).

PAPAHĀNAUMOKU: Living beings

Nā Mea Lā’au: Vegetation

The kula of Kahuku Lewa is lauded in many references as a place of extensive *hala* (*Pandanus tectorius*) groves, which beautified the landscape and scented the air with the fragrance of their *hīnano* blossoms (Sterling and Summers, 1978). However, the connection between hala and Waiale’e need not only be made transitively. A paukū (section) of a mele for Mō’ī W.C Lunalilo begins with the phrase, “Lei Waiale’e i nā hala Kahuku;” Waiale’e is adorned, as a lei, with the hala of Kahuku (He Lei no W.C. Lunalilo, 1873). Though this line, needless to say, bears primary significance to the mele’s recipient, it nonetheless corroborates the notion that the kula of Waiale’e was also formerly decorated with hala trees. In addition, a relatively large area of kula near the eastern border of Waiale’e is referred to in at least two Māhele documents as Mokuhala, hala grove or forest (Native Register of Kauku, Testimony for Kanealii; Appendix A). Various claims for *kumu hala*, *pūhala* and *ōpūhala*, all referring to hala trees, were made by hoā’āina in the ahupua’a of Waiale’e (Part 2). Further, the adjoining ahupua’a of Kaunala could be interpreted as “the plaiting,” a task most commonly associated with *lauhala*, the leaves of the hala tree.

’Ilima (*Sida fallax*) is another plant customarily associated with the coastal plain of Kahuku Lewa, and that of Waiale’e specifically. A version of the *mo’olelo ka’ao* of Hi’iakaikapoliopole includes reference to “ka waiho kahelahela o ke kula o Kuilima, ua hele a memele pu i ka pua o ka ilima’ (the broad expanse of the plain of Kuilima⁷ that had become entirely yellow-gold with ‘ilima blossoms)” (de Silva, 2014, referencing Ka Moolelo Kaao o Hiiakaikapoliopole, 1909). In addition, Kualii, a kama’āina of Hau’ula, mentions ‘ilima specifically in relation to Waiale’e in a *kanikau*, or lamentation, for her husband, Joseph Ka’ahu. She fondly remembers, or perhaps imagines, her husband ‘as a companion in stringing lei of ‘ilima at, and for, Waiale’e: “I hoa kui lei ilima no Waiale’e (Kualii, 1862). Such references suggest that ‘ilima may have been prevalent in Waiale’e.

The wetlands of Waiale’e were long managed to emphasize the prized staple crop, kalo (taro, *Colocasia esculenta*). In addition, Māhele records refer to vacant lo’i as having gone to “nahelehele,” or weeds. These weeds are not specified, but may have included aka’akai (a Hawaiian bulrush, *Schoenoplectella tabernae-montani*) in addition to other native

⁷ The plain of Kuilima is located near Kawela, around one mile east of Waiale’e.

wetland species. At least one unidentified species of bulrush is observed in Kalou marsh today.

As a mesic forest ecosystem, the uka of Waiale'e likely once hosted 'iliahi (sandalwood, *Santalum freycinetianum*). 'Iliahi was also known as lā'au 'ala the prized "fragrant wood" which prompted the environmentally-destructive sandalwood trade. References in Māhele records (Testimony for Kanealii, Appendix A), as well as scientific studies estimating the suitable range of sandalwood support this notion (Harold, 1947; McCain, 2013). In addition, at least one large specimen of 'iliahi is found in the Pūpūkea-Paumalū Forest Reserve. The cultural and environmental keystone species of 'ōhi'a (*Metrosideros polymorpha*) and koa (*Acacia koa*) were also mentioned for this area, and in fact claimed by kama'āina at the Māhele. 32 claims made for "koa wa'a," or koa intended for canoe-making, suggests that of trees of such size were abundant in the mid 19th century.

Nā Holoholona: Wildlife

Relatively few references to animal life were found in relation to Waiale'e, but some assumptions about it can be made. The 'āina wai, or wetlands, of Waiale'e likely once supported several fish species. Dissecting the place name Waiale'e itself, a dictionary search of le'e, redirects to 'o'opu le'e, which is the same as o'opu lehe, "a large male of the nākea variety of 'o'opu, so called because its lip is said to show when it hides in the mud (Pūku'i and Elbert, 1986). This may suggest that 'o'opu nākea (*Awaous guamensis*), and perhaps other goby species, were once found in Kalou. Based on the practices of other loko i'a, and conversations with local residents, 'ama'ama (striped mullet, *Mugil cephalus*) may also have been present in this wetland. Further, a report entitled titled *The Potential for Mullet and Milkfish Culture in the Hawaiian Islands* included Kalou fishpond, suggesting that in addition to mullet, there was "good potential for production" of awa (milkfish, *Chanos chanos*) (Madden and Paulsen, 1977).

No references to waterbirds were historically made for the wetlands of Waiale'e. However, the now endangered, endemic 'alae 'ula (Hawaiian gallinule, *Gallinula chloropus sandwichensis*) and 'alae kea (Hawaiian coot, *Fulica alai*) are seen today in addition to the indigenous auku'u (black-crowned night heron, *Nycticorax nycticorax*). Ducks, which may have genetics of koloa (Hawaiian duck, *Anas wyvilliana*), though are likely hybridized with feral mallards (*Anas platyrhynchos*), are also currently observed in Kalou.

Regarding the uplands, as recently as the 1920s, John Dominis Holt recalls seeing the 'ō'ū (*Psittirostra psittacea*), a honeycreeper bird, in the hills above Waiale'e. Today, 'ō'ū is extremely rare across the archipelago and may be extinct. In an excerpt of another version the mo'olelo of Kamapua'a, a *kūpua-kāne* (male demigod) who assumes both pig and human forms, Olopana grants the lands of O'ahu beginning with the prefix "wai," to Kamapua'a. This reference specifically lists Waiale'e, perhaps figuratively suggesting that feral pigs have long been present in its uka region (He Moolelo no Kamapuaa, 1861).

PART 2: CUSTOMARY RESOURCE MANAGEMENT

This part addresses research question two: What customary Kānaka 'Ōiwi resource management systems have been implemented at Waiale'e? To address this question, this part focuses on wā Aupuni, the Hawaiian Kingdom era, roughly approximating the 19th century. A brief introductory paragraph is included on wā kahiko, the "times of old," prior to the wā Aupuni. Two dimensions of resource management are considered: kālai 'āina (resource governance), and mālama 'āina (resource stewardship). Variations in mālama 'āina strategies between resource zones (i.e. kai, kula, pali, and uka) are further distinguished.

Wā Kahiko: “Times of Old” (pre-1810 C.E.)

Little published or archival information was found regarding the place-specific governance of Waiale‘e prior to Western arrival. More broadly, as it is generally understood today, the traditional Hawaiian system of governance was headed by an ali‘i nui, the highest-ranking chief of a territory, which may have ranged in size from a single district to multiple islands. Tiers of lower-ranking ali‘i managed subdivisions of this territory. Use of these lands by *maka‘āinana*, the common people, was allocated via a feudal-like system of governance in which *maka‘āinana* exchanged labor and taxes for the use of personal agricultural parcels (Kamakau, 1964).

Governance of O‘ahu in the wā kahiko is highlighted by the prosperous reigns of chiefs such as Mā‘ilikūkahi, who is credited with establishing the “ahupua‘a system”, and Kākūhihewa, a later regent often associated with the island in song. Over time, these political territories became increasingly consolidated. In the time of Kahahana, Kahekili successfully captured O‘ahu for the Kingdom of Maui. In 1895, Kamehameha I defeated Kalanikūpule, son of Kahikili, at the battle of Nu‘uanu, thereby gaining control of O‘ahu. Upon peaceful secession of Kaua‘i in 1810, Kamehameha I successfully consolidated all major islands under the Kingdom of Hawai‘i (Kamakau, 1961).

Pre-western Kānaka ‘Ōiwi governance was also inexplicable from traditional religion (Kamakau, 1964). The only such religious site documented to date within the ahupua‘a of Waiale‘e is a Kāne stone in the vicinity of Kalou fishpond (McAllister, 1933), the purpose of which is theorized in Part 1. A small heiau site is located just outside of Waiale‘e in the ahupua‘a of Pahipahi‘ālua, although the name and original intent of this heiau are not known (Williams and Patolo, 1998). In the broader region, the nearby lands of Pūpūkea and Waimea were designated for the kahunas, or priestly class. These lands include several heiau, most notably Pu‘u o Mahuka, the largest heiau by area on the island (Sterling and Summers, 1978). Due to their proximity, religious activities in Pūpūkea and Waimea may have influenced resource management at Waiale‘e.

Despite the lack of evidence for pre-Western religious sites or activities located in Waiale‘e, the place bears a connection three heiau in Hālawa, Moloka‘i. The construction of these heiau is credited to Kaneaokilolani a “prophet from Waiale‘e, O‘ahu.” The first of them, sharing the name of its kahuna, is classified as a *heiau kāula*, or prophecizing temple. Its purpose is said to be for prayer. Kaneaokilolani adjoins the second heiau, Pu‘u O‘ahu, perhaps named for the architect’s island of origin. The third heiau, Hiwa, is also in the vicinity but not noted as adjacent to the other two. All three of these heiau are located portion of Hālawa known as Mo‘oiki, “at the base of the northern slope of the valley” (Summers, 1971). As a further connection, Mo‘oiki and the variant Kamo‘oiki are names of mo‘o‘āina land divisions claimed by ho‘āina of Waiale‘e at the time of the Māhele.

Due to a lack of information found specific to Waiale‘e for wā kahiko, a discussion specific mālama ‘āina practices is excluded for this time period. That said, it can be inferred that resource management practices documented for the wā Aupuni, the next discussed time period, evolved from institutions of the wā kahiko and thus share some similarities.

Wā Aupuni: Kingdom Era (1810-1893)

The 19th century is a particularly potent era for Hawaiian historical research, as it is a time at which the written word was broadly understood and utilized by a native-dominant

populous still largely aware of and practicing pre-Western customs, including those associated with resource governance.

Kālai 'Āina: Resource Governance

Ke Konohiki: The Local Resource Manager

As it was for virtually all ahupua'a, the central feature of resource governance at Waiale'e was the *konohiki*, the local land manager. However, 19th-century Konohiki governance was not always easily defined in Waiale'e, as suggested by an exchange of letters published in *Ka Elele*. The instigating letter, originally unsigned, but later identified as from Waiialua-based minister J.S. Emerson, compares the governance of Waiale'e to "ehiku hoaholo no ka lio ho'okahi," seven riders on one horse, and asks, "Wouldn't you think that horse would quickly break?" Emerson lists these seven "haku," or overseers, of Waiale'e, as, King Kauikeaouli, Queen Kalama, the wife of Iona Pi'ikoi, Kalua, Kuluiki, Maui, and Kuheleloa. Emerson blames this "lehulehu," or multitude, of leaders with consuming everything, and leaving nothing for the common people, allowing the land to go to weeds, and neglecting infrastructure, causing residents to depart the area. He concludes by saying that there are many other lands burdened like Waiale'e, and that the people seek relief (Ehiku Hoaholo, 1847).

Kahue, likely an agent of Iona Pi'ikoi, responds to Emerson in another letter with "harsh words." Kahue calls Emerson a "big dragonfly mistakenly hitting the window and busting its head" for succumbing to the "apu uhi," or deceitful potion, of Naloloa, a resident of Waiale'e. Kahue seems particularly bothered by Emerson's statement that it was Queen Kalama, wife of King Kauikeaouli, who gave Waiale'e to the wife of Pi'ikoi. Kahue shares the alternative narrative: During festivities in Lāhaina in December 1842 that King Kauikeaouli gave Pi'ikoi one tenth of his lands to manage. Following death of Timoteo Ha'alilio [in December 1844], who bequeathed his lands to the King, Kauikeaouli granted administration of Waiale'e to Pi'ikoi, who "gave Kuheleloa the position of Konohiki." Kahue further criticizes Emerson's reference to Kalua, Kuluiki, and Maui as konohiki, sharing the correction that these individuals were involved in the fetching of Kuheleloa as konoiki, so perhaps that was the reason for the mistake (Kahue, 1847).

Finally, a group of kama'āina, including the aforementioned Naloloa, along with Hawaii, Keliikui, Kawau, Kaumailiula, and Maii, has the final recorded word on this matter. They share an account that on December 30, 1846, Mataio Kekuanaoa, Governor of O'ahu, addressed several kama'āina of Waiale'e at the house of Naloloa, asking whether they had heard the news that "Kalama gave this land of Waiale'e to the wife of Pi'ikoi." The writers cite this as the origin of the first statement which so angered Pi'ikoi. The authors also explained that the notion of Kalua, Kuluiki, and Maui as konohiki was not Naloloa's mistake, but first stated by Kuluiki, a brother of Kuheleloa's wife. The authors later shared this misinformation with Emerson as they were believed to be true. Following their explanation, Naloloa folks discuss the meaning of the term konohiki, as opposed to "haku" or "luna." In order of increasing rank and power, they appear to place haku lowest, followed by luna, and finally konohiki. However, they acknowledge the ambiguity, even interchangability of the terms by sharing that they are "familiar with the reference of several luna as haku, even konohiki, sometimes, because they have some authority, and they receive some of the produce of the pa'ahao work days (Hawaii et al., 1847)."

Further supporting the notion of bureaucracy, the mo'o'āina land division claimed by Kalua, one of the intermediaries implicated in this controversy, was named Konohikilau, or

“numerous konohiki.” Perhaps this mo’o’āina was named (or renamed) due to this controversy, or similar difficulties in the past (see Kalua in Appendix A).

Ka Lele a me nā Mo’o’āina: Subdivisions of Waiale’e

Two types of land subdivisions were noted within the ahupua’a of Waiale’e. The first of these is a 14-acre *lele*, or discontinuous piece, of the adjacent ahupua’a of Pahipahi’ālua, located within the borders of Waiale’e. This lele intersects some of the valuable kalo lands of Waiale’e, which may have been granted to Pahipahi’ālua since the main portion the ahupua’a has none (Webster, 1851; Wall, 1902). The existence of this lele may also suggest that Pahipahi’ālua is translated as “split in two,” a previously unrecorded interpretation of the name, which is justified in under “Nā Kahawai: Streams” in Part 1.

During the Māhele, most *hoa’āina* identified their claimed lo’i as part of a *mo’o’āina*, a small land division or “strip” of land (Pūku’i and Elbert, 1986) (See also Part 1, ‘Āina Wai: Wetlands”). However, mapping the mo’o’āina of Waiale’e revealed two inconsistencies: mo’o’āina which share names but are physically separated, and mo’o’āina called different names by different people (Figure 2). A title abstract for the conveyance of several kuleana parcels provided some clarity by confirming family relations between several claimants of adjacent lo’i, all within the mo’o’āina of Kilowai (Emerson, 1903). This suggests that mo’o’āina divisions may be associated with, or conveyed via, *mo’okū’auhau*, genealogy. This theory might explain the first inconsistencies; perhaps mo’o’āina were not conceived only as established name for a contiguous geographic location, but as a name carried by an extended family unit and applied to the various places they tended. Regarding the second issue, perhaps there was more than one accepted name for each place, or perhaps that different names were applied to that place at different times. At least in Waiale’e, the term *mo’o’āina* was only applied to claims for lo’i, or land divisions including lo’i; never to claims for kula or house sites alone. In one instance, a parcel referred to as a mo’o’āina elsewhere was called a “mo’okalo,” further supporting the term’s specificity to lo’i. An apparent association of mo’o’āina with aquatic environments might suggest a relationship to mo’o, or “water spirits” (Pūku’i and Elbert, 1986).

Nā Kuleana o nā Hoa’āina: The Responsibilities of Native Tenants

According to primary documents, at least three types of taxation were required of the *hoa’āina* of Waiale’e during the mid-19th Century. The first requirement was to attend the work days for the konohiki called *pō’ālima*, or Friday, the day of the week on which this work occurred in the 19th century. These lands worked for the konohiki were referred to in Waiale’e both as *kō’ele* and *pa’ahao*. There does not appear to be any differentiation in their usage. *Kō’ele* is recognized as a term dating to the wā kahiko, though at that time it was used to refer to the lands worked for higher-ranking chiefs, whereas *hakuone* were lands worked for the konohiki (McGregor, 2007). The term *pa’ahao* is likely of later introduction,⁸ and connotes imprisonment, the alleged punishment for failing to attend these work days (Pūku’i and Elbert, 1986). No cases of imprisonment were found for Waiale’e, though Māhele testimonies to refer to *hoa’āina* losing land for failing to attend the *pō’ālima*. Some testimonies also share that claimants were excused from attending the *pō’ālima* due to their age. Spatial references to both *kō’ele* and *pa’ahao* primarily place these lands as lo’i, as opposed to dryland sites.

A second type of work day, *pō’alua*, or tuesday, was also named also named for the day of the week on which it occurred. Pūku’i and Elbert (1986) define ‘auhau *Pō’alua* as “Tuesday tax, a term used in 1852, probably an educational tax.” What is suggested from

8 Pa’ahao literally translates to “stuck within iron,” referring to the bars of a prison cell, indicating that this term— and its derivatives— was coined following the European introduction of iron.

records relating Waiale'e is that pō'aluā was the day to work the *lo'i Aupuni*, or government taro patches. The proximity of noted lo'i Aupuni to the circa 1850 site of the school house in Waiale'e supports that the pō'aluā may have been used to benefit education (Kalama, 1851). It is not clear how the hoa'āina's labor ultimately supported government programs, education or otherwise; whether the produce was sold for profit or simply used in commodity form to feed students, employees, prisoners, or other groups.

A third requirement is distinguished from the aforementioned two in the testimony of Kalalawaia for Muli: "...ua hele mau oia i ka hana a ke Konohiki, a me ka poalua o ke Aupuni, a ua hookupu no oia i ka Auhau o ka aina." translated as, "...he always attended the work days of the Konohiki, and the Tuesdays of the government, and he indeed paid the tax of the land." It is not clear whether this 'auhau was monetary or one of produce. Other testimonies introduce the additional administrative role of "tax officer," which during at the time in Waiale'e was ironically filled by a man named Keli'iwawai'ole (literally, the chief without wealth) (see testimonies for Kalalawaia and Kaneiahuea in Appendix A).

Because testimonies from the Māhele comment on what happened prior to their writing, it is yet unclear to this author whether or not these requirements continued after the hoa'āina gained fee simple title to their respective *kuleana*.

Mālama 'Āina: Resource Stewardship

Overview

Māhele records provide a valuable, yet relatively little-considered, source for understanding the nature and spatial distribution of customary Kānaka 'Ōiwi resource management practices. I identified a total of 51 hoa'āina who made some claim in Waiale'e or the lele of Pahipahi'ālua, though many also made claims in other ahupua'a. 40 of 51 (78.4%) received some Land Commission Award in the area, though two of these did not receive any award in Waiale'e or the lele of Pahipahi'ālua. This statistic is qualified by the fact that several hoa'āina were not awarded claims because they passed away after filing their register but before receiving third-party testimony for their parcels. That said, the claims of some hoa'āina who passed away prematurely were pursued by their heirs and still awarded under the name of the original, deceased claimant. This was the case for Kaauwaepaa, a claimant in his own right, who inherited the LCA of his deceased father, Kahuku. A visual representation of the claims awarded, and thus mapped, is illustrated in Figure 4.

Considering only awarded claims provides an incomplete picture of what can be gleaned of wā Aupuni resource management in Waiale'e. Additionally, considering unawarded claims provides a much more diverse picture of the system and crops utilized in Waiale'e and the vicinity. Perhaps such claims for scattered trees, gardens, and upland forest sites were considered too insignificant, or remote, to justify mapping. Perhaps also, given the origins of "native gathering rights," hoa'āina were still allowed access to such sites post-Māhele, and awarding these claims via fee-simple title was deemed unnecessary. Among awarded and unawarded claims, a coincidentally round total of 300 stewardship sites were associated with Waiale'e's 51 original claimants. Of these, between 167 and 192, or 56-64%, of claims were located within the borders of Waiale'e, including the lele of Pahipahi'ālua. The uncertainty stems from unmapped claims made for Pahipahi'ālua, which may have been located either in the main portion of the ahupua'a or its lele. The remaining third, or more, of claims were for nearby ahupua'a within a roughly three-mile radius, ranging from 'Ō'io in the east to Paumalū in the west.

These 300 claims comprised 53 unique specific resource system *terms*. I sorted these terms into nine general resource system *categories* based shared root words or similar

practices. I further grouped the resource systems categories into three broad *types*: ‘āina kai, salt water systems; ‘āina wai, freshwater systems; and ‘āina malo’o, dry-land systems (Figure 5). The following sections characterize these cropping systems based on the references to them found in Māhele claims. Further potential explanations are posed based on additional literature review. These results are organized based on the aforementioned framework. Though it does not directly affect the order of presentation, these cropping systems also correlate to wao, or geographic sub zones, of the ahupua’a (Figure 6).

Figure 4. Land Use Types of Land Commission Awards in Waiale’e, O’ahu.



Figure 5. Typology of Resource Systems in Waiale’e; from Māhele Registers.

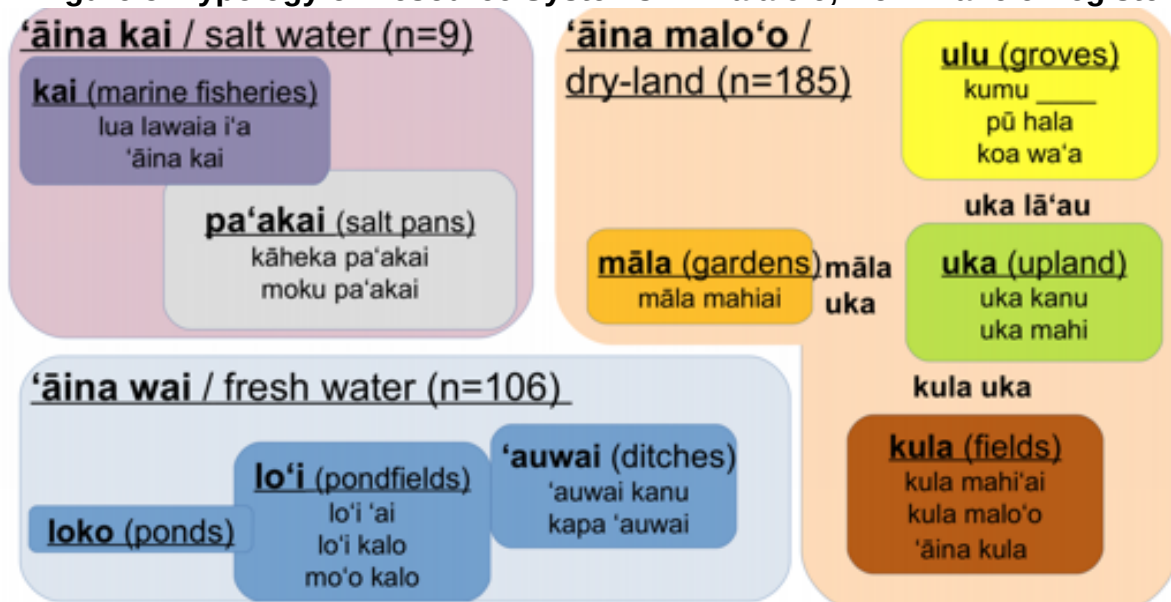
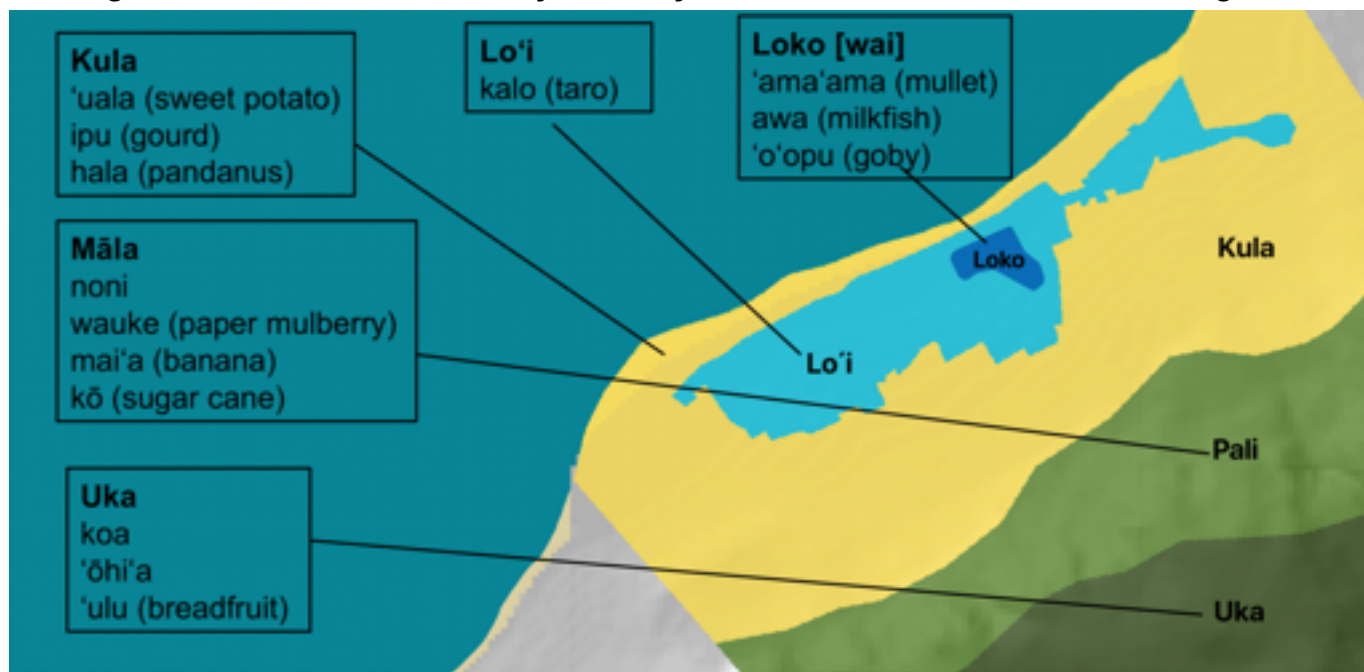


Figure 6. Selected Resource Systems by Wao for Waiale'e; from Māhele Registers.



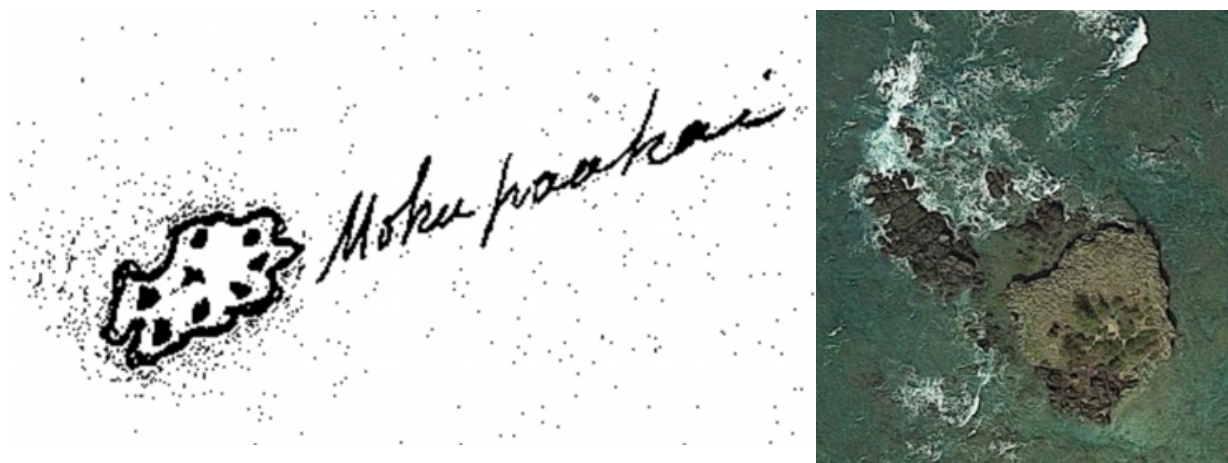
'Āina Kai

Two primary resource management categories were identified within the 'āina kai type: simply *kai*, or marine fisheries, and those relating to the production of *pa'akai*, or sea salt.

Seven kai were claimed by the people of Waiale'e. One of these was described as a lua lawa'ia i'a, or fishing hole, named Hao. Other named kai include: Kaiki, Kamanawa, and Kailoa. A marine management system named "aina kai" was also identified. Though referred to as salt making sites by Maly and Maly (2003), here aina kai are thought instead to connote a claim for marine "land;" perhaps a tended patch of submerged reef.

Variations of pa'akai sites included *kāheka pa'akai*, a general term for a stone depression used as a "salt pan," and a *moku pa'akai*, or "salt island," claimed by Kaneali'i. Though at first the latter did not seem to make sense, further interpretation of this claim suggests that Kanealii's moku pa'akai may have been what is now known as Kūka'imanini islet, though the earliest reference to that name is found on Wall (1902). Evidence for this is relayed in J.S. Emerson's survey of Kaneali'i, which was later rejected, in part due to the large size of Kanealii's 'āina also mapped by Emerson. Emerson states of that Kanealii's moku paakai is "puni ia i ke kai, he 1/8 paha o ka eka," surrounded by the sea, perhaps 1/8 acre in size. Though digitally estimating the area of Kūka'imanini today yields a figure around twice the size of that stated by Emerson, there are no nearby "moku" "surrounded by the sea" to be confused with. Further, Emerson's phrasing suggests that he did not carefully survey the island but simply made a rough estimate of its area. His rough sketch (Figure 7) also resembles a contemporary aerial photo of Kūka'imanini. Alternatively, perhaps the entirety of the islet was not considered part of Kanealii's claim.

Figure 7. Sketch of Kaneali'i's Moku Pa'akai (left) and Kūka'imanini Islet (right)



Sketch from (Emerson, 1851); satellite photo from Google Maps.

'Āina Wai

The lo'i resource system assumes the dichotomy of being the most prevalent by number of claims, yet least diverse in terms of number of species cultivated. No crop other than kalo was explicitly mentioned for lo'i. That said, sub-systems of lo'i were noted. Claims for *kapa 'auwai*, or waterway banks, and *'auwai kanu*, planted waterways, suggest that in Waiale'e, 'auwai not only served as means of irrigation but also production systems unto themselves. One claim for an unnamed loko suggests that fish cultivation also occurred outside of Kalou fishpond, within the lo'i complex. If this was the case, claims simply noted as lo'i, may have in fact represented loko i'a kalo, a hybrid lo'i-fishpond recognized by Kikuchi (1973). A single, humble claim for "he mau pu'epu'e 'elima," suggests that the pu'upu'e, or mounded style of kalo planting (Handy and Handy, 1972) may have been used, at least by some, at Waiale'e. Present-day mahi'ai, or farmers, of marshy or slow-flowing lo'i, as those of Waiale'e may have once been, find success with this style. Pu'epu'e planting may also have been compatible with raising fish in lo'i, so as to prevent the fish from potentially damaging the kalo.

Despite being a significant landmark, little is mentioned regarding the stewardship of Kalou fishpond. Perhaps this is because it Kalou was retained by konohiki, and thus a claim describing the pond itself was recorded. Māhele records do however corroborate the general "L," or fishhook shape later mapped. Otherwise, the pond is only mentioned by name or simply as a "loko" The name Kalou is also shared with a mo'o'āina, though none of the claims mentioning that land division were awarded and thus could be spatially located. Given large "empty spaces" without mapped claims near Kalou fishpond, it is likely that the mo'o'āina of Kalou is also in that vicinity. Perhaps, like the fishpond the lo'i of the mo'o'āina of Kalou were largely reserved for konohiki. Though fish species were not mentioned in the Māhele records, the Kalou fishpond may have been suitable for 'o'opu, 'ama'ama, and awa, as explained in Part 1.

'Āina Malo'o

In the sources considered for Waiale'e, 'Āina Malo'o included four constituent resource system categories. *Kula*, which shares a name with the wao, or broader geographic zone, is the most general, and a less-diverse cropping system. In Waiale'e, kula were found most

often to emphasize 'uala (sweet potato, *Ipomoea batatas*). Ipu (calabash gourd, *Lagenaria spp.*) was of secondary prevalence and a few references to hala were also made. Thinking of kula as an open plain, one can imagine a large field intensively planted with just these few types of crops.

Māla seemed to represent more diverse assemblages than kula. Combinations of three or more species were often seen at the same site, most commonly including noni (*Morinda citrifolia*), wauke (paper mulberry, *Broussonetia papyrifera*), mai'a (banana, *Musa spp.*), and kō (sugar cane, *Saccharum officinarum*). One mapped instance of a māla coincides with an intermittent gulch along a lower cliff face, suggesting that māla may be akin to the "colluvial agriculture" described by Kurashima et al. (2019).

Ulu, or grove, refers to various systems of arboriculture. Some of these these referred to systems consisting of a single species of tree, such as *pūhala*, a hala tree or cluster; *koa wa'a*, or *Acacia koa* trees saved with the intent of becoming a canoe; and 'ōhi'a the keystone species valued for its timber and in lei making, in addition to other uses and great cultural significance. One unique species mentioned is *alani*, which may have refer either to the introduced orange fruit (*Citrus sinensis*) or *Melicope anisata*, an endemic plant used for its fragrance, such as for the scenting of kapa. Trees such as hala and noni were also found in relation to annuals such as kalo and 'uala, suggesting intercropping in arboriculture. Overlapping with the next category to be explained, *uka lā'au*, could refer to a managed upland forest site.

The last, cropping system category is uka, or upland. In addition to modifying both kula (*kula uka*) and māla (*māla uka*), the terms uka kanu, planted upland, and uka mahi, farmed upland, suggest that uka sites may have been approached with unique management strategies. That said, the crops found for uka systems overlap largely with those discussed māla and ulu systems, with the addition of some outliers such as 'ulu (breadfruit, *Artocarpus altilis*) and uhi (yam, *Dioscorea alata*). In addition achieving yield improvements due to higher rainfall, uka sites may have served as consistent provisional food sources when lowland crops failed.

PART 3: RESTORING CUSTOMARY RESOURCE MANAGEMENT

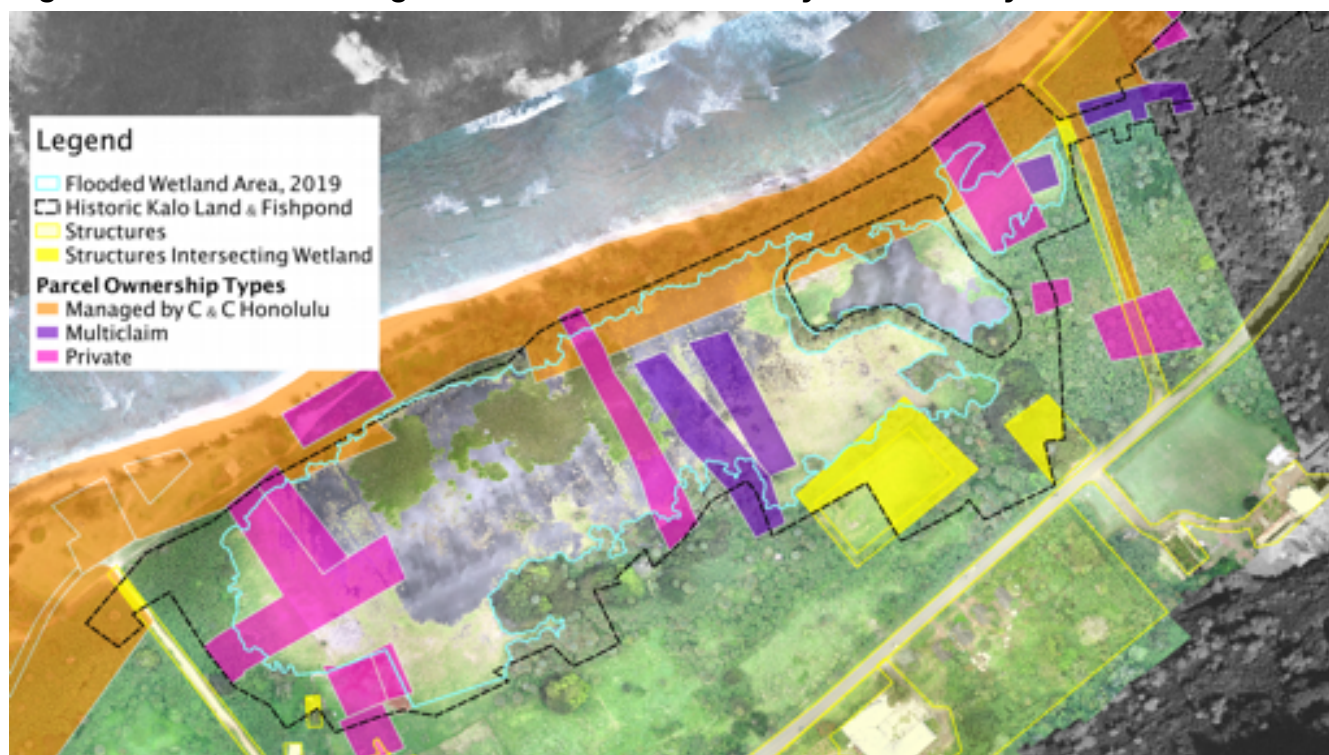
This part relates to research question three: How might these customary resource management systems be restored? To address this question, I undertook a case study for Kalou marsh, arguably the most ecologically and culturally significant feature of Waiale'e. A remote sensing approach was first applied, which entailed conducting an unmanned aerial system (UAS), or "drone," survey, and producing an orthomosaic. This work was completed by my colleague, Kristian McDonald. Combining this orthomosaic with publicly available geospatial layers, and layers digitized from historic maps and other spatially-explicit archival sources, I subsequently conducted a suitability analysis for the restoration of customary lo'i and fishpond systems at Kalou Marsh considering historic and present extent wetland extent, impermeable structures that would inhibit restoration, and property ownership.

The resulting map (Figure 8) illustrates that while these factors do impact difficulty of restoring customary food systems at Kalou marsh, significant portions are not affected. The first finding of note is that the present flooded extent of Kalou Marsh (teal outline), digitized from the orthomosaic and based on field observations, is approaching the historic extent of lo'i kalo (dashed black outline) in terms of area. Few impervious structures intersect the wetland (yellow), and those which do can easily be avoided in restoration. The presence of privately owned (pink) and disputed or jointly-owned parcels (purple) may complicate restoration by the State, depending on the objectives of private property owners. Lastly,

because a portion along the ma kai edge the marsh is located on a separate TMK administered by the City and County of Honolulu (orange), an agreement for managing this portion of the wetland will need to be made with the City.

Aside from potentially requiring collaboration with the City, Kalou fishpond unencumbered by the challenges considered by this suitability analysis, and presents the most compelling “first step” toward restoring customary resource management systems at Waiale‘e. Furthermore, since Kalou has always been “konohiki” land, there is no chance that a formerly-quieted kuleana interest will be raised in regard to its tenure. In addition, Much of Kalou’s original wall remains intact which compares favorably to lo‘i banks, which will require significant reconstruction. One challenge to the restoration of Kalou may be obtaining the appropriate permits for fishpond restoration (Appendix B). Lo‘i restoration is also promising for Waiale‘e, particularly in the areas near Kalou fishpond, as well as in another large patch near the western extremity of Kalou Marsh. Restoring this latter, western portion may necessitate collaboration with the private property owners which divide this portion from the remainder of the wetland, as the historic ‘auwai which may have controlled water flow in this area passes through these private parcels.

Figure 8. Factors affecting Restoration of Customary Resource Systems at Waiale‘e.



OUTPUTS, OUTCOMES, AND REFLECTIONS

In summary, this project led to three key outputs for Waiale'e, O'ahu: a description of natural and cultural resources from an indigenous perspective; a characterization of the customary resource management systems; and a discussion of the future applicability of this cultural knowledge.

By compiling disparate archival sources and synthesizing them with field, social, and geospatial methods, this report has substantially contributes to knowledge of customary resource management at Waiale'e. In so doing, this work bears implications for the adjoining region of Kahuku Lewa, and comparable regions throughout the *pae 'āina* (archipelago). Even more could be gained, and more confident claims made, by applying this approach on a broader geographic scale than a single ahupua'a.

As a relative newcomer to many of the methods employed here, the "common-sense" ethic apparent in portions of this study may demonstrate to a broader audience that conducting these types of analyses is achievable. As such, this work may encourage readers of many backgrounds to pursue formal or informal research for the places they care deeply about, or apply place-based concepts to their existing work. As many of the archival sources consulted here are available only in 'ōlelo Hawai'i, it may also contribute to individuals' desire to become more fluent in the language. Given the multidisciplinary approach, similar undertakings in the future would benefit greatly if pursued by a team, rather than an individual.

Practically, this work is correlated with the mobilization of community members and the instigation of change. Since this project began, a grassroots community group and an informal campus committee have formed; and an existing non-profit organization has become more invested in Waiale'e. Due in part to these groups' advocacy, a controversial proposed outcome for the land of the former UH Waiale'e Livestock Research Station was averted, and the future of this place, once again, remains to be determined. Given this potential, the findings of this report may be positioned to inform the future management of Waiale'e, as originally hoped.

Personally, this work became a six year route along an ongoing journey of self-discovery. I've learned things about my *one hānau*, birth sands, I once thought I could never know; I've "met" kūpuna of mine for the first time through archives I newly learned to access; I've made connections with friends and neighbors that will propel me into the next chapter and endure through the last. For me, this starting upon route can be traced back to a single conversation, and I am glad I answered the call.

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Appendix A: Transcriptions of Native Registers and Testimonies for Waiale'e

Downloaded from Kīpuka Database (KP) and Papakilo Database (PK), Originally scanned from Hawai'i State Archives.

Organized alphabetically by claimant name. Place names are **highlighted**.

Aie

Register

Waielee Oahu Dek. 31 1847

E na Luna hoona Kuleana aina Aloha oukou Owau o Aie ke hai aku nei a'u i ko'u Kuleana aina, a me ke kula ma **Kuapa** ekolu loi he wahi kakapa auwai kekahi. Eia na aoao A. **Keokea** Hi. ko Mahoe Ko. ko Keliwaiwaiole. Hm. ke koele.

2. Eia no keia loi ou ma **Kapunaiki** hookahi.

3. Eia keia loi o'u i **Kapunaiki** hookahi no

4. He loi no aia ma **Kalou** he mahele loi ai nae.

5. O keia loi no o'u aia ma **Kauakahiloko**. O keia mau loi o'u 4 ua kauliili, nolaila maopopo ole na aoao.

O ke kula kekahi, aia ma **Paipaialua**, he pili, he koa. na mea kupu O ko'u noho ana ma keia mau kuleana mai a Haalilio mai a hiki i keia wa.

Na Aie Kona X hoailona

O ko'u Pahale kekahi kulana o'u, aia ma **Waielee**.

Testimony

Claim 2672. Aie.

Mahoe, sworn, says he knows the kalo land of Aie in **Waiale'e**. It consists of 4 patches bounded on Hauula side by Mahoe's land, on all the other sides by the Konohiki.

Claimant has no kula land in cultivation. His house site is distinct from his kalo patches and is enclosed with a stone wall.

Claimant has held his land for 16 years.

The Konohiki consented to this claim.

Hauleiaole

Register

Na Hauleiaole

Waiale'e Oahu Jan. 18. 1848

I na Luna Hoona kuleana. Aina e, Aloha oukou me ka mahaloia, Owau nei o Hauleiaole, ke hai aku nei au i ko'u kuleana Aina ma **Waiale'e**. o **Kalawa** ka inoa o ka moo Aina. eha loi, eia na aoao, A. ko Kahaleipu, Hik. he kula Hem. Ko Naloloa Kom. ko Kawi. Mai a Kamehameha I ma

ko'u noho kuleana ana mai.

Na Hauleiaole

Testimony

Claim 3991. Hauleiaole. (Deceased)

Mamala, sworn, says Hauleiaole died in 1848. At her death the land held by her came back to the Konohiki who has since placed some one else upon it. (This was confirmed by others present).

Hawaii

Register

2707 Hawaii Waialee Jan. 1. 1847

E na Luna Hoona Kuleana e

Aloha oukou me ka Mahaloia. O wau nei o Hawaii, ke hai aku nei au i ko'u kuleana aina ma **Waialee**, o **Mooiki**, ekolu loi a he auwai. eia na aoao. A. Ko Kalua loi. Hi. Ko Kimo. He. Ko Kahuku. Ko. He aina Kula, He aina kula uwala, he uka mahiai uwala, ko, ipu. A he loi hookahi ma kahi e ae, e pili ana me ka mooaina o Naloloa.

Aia ma **Kaunala** kekahi kuleana o'u, he mala wauke, ipu, maia, ko.

O ko'u Kuleana hale, eia na palena. A. Ko Kaumailiula. Hi. Ko Pahua. He. Alanui Aupuni. Ko. Ko Waihinalo. O ko'u noho kuleana ana maluna o keia wahi, oia ka makahiki o ka haku 1832.

Na Hawaii

kona

X

hoailona

Testimony

Claim 2707. Hawaii.

Kalua, sworn, says he knows the land claimed by Hawaii. It belonged to Kawau, deceased, whose widow gave up the land to the Konohiki last April. Hawaii is no relation to the deceased Kawau, and Kawau did not leave his land to Hawaii.

The konohiki claims this land for the King.

Holi

Register

Waiale'e, Oahu Dek. 31. 1847

E na Lunahoonakuleana e.

Aloha oukou me ka mahaloia. Owau nei o Holi, ke hai aku nei au i ko'u kuleana Aina ame ka Pahale.

Hookahi loi, a he kapa Auwai a he hapalua loi [section crossed out] a he mahele loi, a he pili auwai ma kahi e ae. eia na aoao. Ma ka Ak. Pa hale, ma ka Hik. ko Kaio, ma ka Hema ko Kalua, ma ke Ko- he aina- kula. he aina- kula no hoi kekahi a'u. Oia ko'u kuleana ma **Waialee**.

2. Aia ma **Pahipahialu-a** kekahi kuleana o'u, he mala- wauke a me ka noni.

3. Aia ma **Kaunala** kekahi kuleana o'u, he mala wauke a me ka noni.

Eia na aoao o ka Pahale ma ka A. ke alanui Aupuni, ma ka Hi. ko Kekua pa. ma ka He. Na loi ai o'u ma ke Ko. Ko Waihinalo.

Na Holi

kona

X

hoailona

Testimony

Claim 2703. Holi.

Kalua, sworn, says he knows the kalo land of claimant in **Waialee**. It consists of 3 kalo patches, forming 2 pieces.

The first piece, of 2 patches, is bounded on Hauula side by Kaio's land, Mauka by Kalua's land, Waialua side by the Konohiki, Makai by claimant's House Site.

The second piece is bounded on Hauula side by the Konohiki, Mauka by the kula land, on Waialua side by Huaka's land, Makai by a stone wall.

Claimant has no kula land cultivated. (Claimant says he has no land in either **Pahipahialua** or **Kaunala**).

His house site is in **Waialee** and is not enclosed. He has held the kalo patches for 16 years.

Kaaina

Register

Waialee Jan 1. 1847

E na Lunahoonakuleana e.

Aloha oukou me ka mahaloia. O wau nei o Kaaina, ke hai aku nei au i ko'u kuleana aina ma **Waialee**, o **Punaluu**, ka inoa o ka mooaina, hookahi loi, eia na aoao A. ko Manoha Hi. He. ko Manoha Ko. Laiehau me ko Namohala, me ko Nahuaka me ko Manoha, he aina kula.

Aia ma **Kaunala**, he mala noni wauke, ko, maia, uwala, ipu

O ko'u pa hale, aia ma **Waialee** eia na aoao. A. Hi. He. He kula. Ko. awawa one

Mai a Kamehameha III mai ko'u noho kuleana ana.

Na Kaaina

Kona

X

hoailona

Testimony

Claim 2842. Kaaina.

Kuheleloa, sworn, says he knows the kalo land of Kaaina in **Waialele**. It consists of one patch bounded on Hauula side by Kaio's land, Mauka by the konohiki, Waialua side by the kula land, makai by Kahuku's land.

Claimant has no kula land in cultivation, nor has he any land in **Kaunala**.

His house site is in **Waialele**, adjoining his kalo patch. It is not enclosed. He derived his kalo patch from his parents and has held it many years.

The Konohiki consented to this claim.

Kaauwaepaa

Register

2894 Kaauwaepaa Waialele Oahu Dek. 31. 1847

E na Luna hoona kuleana aina e

Aloha oukou me ka Mahaloia. Owau nei o Kaauwaepaa, ke hai aku nei au i ko'u wahi kuleana aina, ma **kamooiki**, hookahi loi, a he auwai, a he wahi kula uwala.

Na Kaauwaepaa

kona

x

hoailona

Testimony

Claim 2894. Kaauwaepaa.

Kimo, sworn, says he knows the land claimed by Kaauwaepaa in **Waialele**. It belongs to Pooluku, in whose claim it is included. (This was confirmed by others present, and no person appeared to represent the claim).

Kaenaokane

Register

Waialele, Jan. 1 1847

E na Lunahoonakuleana e,

Aloha oukou me ka mahaloia. O wau nei o Kaenaokane, ke hai aku nei au i ko'u kuleana aina ma **Waialele**, o **Kilawai**, hookahi loi, eia na aoao A. he loi koele. Hi. ko Waihinalo. He. ko Laiehau. Ko. ko Laiehau

He loi e ae o **Kalawa**, e pili ana me ko Naloloa, a me Kuheleloa

He mala noni, aia iuka.

Na Kaenaokane

kona

X

hoailona

Testimony

Claim 2895. Kaenaokane.

Kaumailiula, sworn, says he knows the 2 kalo patches claimed by Kaenaokane in **Waialeale**.

The first patch is bounded on Hauula side by Naloloawahine's land, Mauka by Kauaia's land, - Waialua side by Kuheleloa's land, Makai by the Konohiki.

The second patch is bounded on Hauula side by Kuheleloa's land, Mauka by Laieha's land, Waialua side by Wahinalo's [sic] land, Makai by Nua's land.

Claimant has no kula land. He has held the 2 patches for over five years.

The Konohiki consented to this claim.

Kahaleipu

Register

Waialeale, Oahu, Dek. 31. 1847

E na Lunahoonakuleana e.

Aloha oukou me ka mahaloia. O wau nei o – Kahaleipu, ke hai aku nei au ia oukou i ko'u kuleana aina ma **Piei**, elua loi, a he mahele loi e a e kekahi ma kahi e. he aina – kula – he aina – kai, o **Kailoa** ka inoa he uka mahiai, eia na aoao o kuu mau loi elua, ma ka A. alanui Aupuni, ma ka Hi. ko Kuheleloa ma ka He. **[crossed out: Kalou]** ko Hauleiaole ma ke Ko. **Kalou**.

O ko'u kuleana hale ma **Waialeale** kekahi hale ma **Pahipahialua** kekahi mau hale elua eia na aoao ma ka A. he alanui Aupuni, ma ka Hi. ko Kauaia pa hale ma ka He. loi paahao ma ke Ko. ko Kuheleloa pa.

Na Kahaleipu

kona

X

hoailona

Mai a Kamehameha I ko'u noho ana maluna o keia mau kuleana.

Aia ma **Pahipahialua** kekahi kuleana o'u, he uka mahiai, he wauke, he maia, he ko, uwala

Aia ma **Kaunala**, he maia, uwala, ulu, he puhala, ekolu koa waa

Testimony

Claim 2816. Kahaleipu.

Kalua, sworn, says he knows the kalo land of claimant in **Waialeale**. It consists of 3 kalo patches in two pieces. The first piece of 2 patches is bounded on Hauula side and Mauka by the Konohiki, Waialua side by a fish pond, Makai by a stone wall.

The other patch is bounded on Hauula side by the kula land, Mauka and makai by the konohiki, Waialua side by Opae's land.

Claimant has also a small piece of kula land. It is bounded on Hauula side by

the line of Pahipahialua, on the other sides by the Konohiki.

He has also 2 kalo patches and a house site in Pahipahialua. The 2 patches are bounded on Hauula side and Mauka by the Konohiki, Waialua side by Kauku's land, Makai by claimant's house site.

His house site is not fenced in. He has held his land for over 16 years.

The Konohikis of Waiale'e and Pahipahialua consented to this claim.

Kahuewaa (2 LCAs)

Register (1)

2858 Kahuewaa Kaunala Oahu Dek. 31. 1847

E na Lunahoonakuleana e

Aloha oukou a pau me ka Mahaloia. Owau nei o Kahuewaa, ke hai aku nei au i ko'u kuleana aina ia oukou i Waiale'e. Hookahi loi ai, kona aoao ma ka Ak. ko Kaumailiula. Hik. ko Aie. Hema. paahao. Ko. ko Puhiele, he auwai e pili ana i ko Kaaua [sic; incorrect transcription?], ma ka Hikina, a he wahi mahele kekahi e pili ana i ko Keliwaiwaiole ma ka Hema, a he loko ma Kiao, na aoao ma ka A. ka auwai, ma ka Hik. ko Kalalawaia. Hem ko Mai I. Komohana ko Mai I. no. He kula kanu uwala, aia ma Kaunala a hala iuka.

O ko'u noho kuleana ana ma keia wahi mai a Liholiho mai a hiki mai i keia wa.

Na Kahuewaa

kona

X

hoailona

Register (2)

Paumalu Dek 29 1847

E na Luna hoona Kuleana aina aloha oukou, O wau o Kahuewaa ka mea kuleana ma Haliiloulou 5 ili uala, he uka laau kekahi, he ko, he ulu, he ohia, a me na mea like, he kai kekahi aia no ma Haliiloulou. Oko'u hale kekahi o'u. O ko'u noho ana mai a Auhea mai.

Na Kahuewaa

Kona

X

hoailona

Testimony (1 & 2)

Claims 2858, 4387. Kahuewaa.

Keliwaiwaiole, sworn, says he knows the two kalo patches claimed by Kahuewaa in Waiale'e. They are bounded on Hauula side by Waiee's [sic: Aie's?] land, Mauka by the Konohiki, Waialua side by Puhiele's land, Makai by Muli's land.

Claimant has also a piece of cultivated kula land, planted with potatoes. It is

bounded on Hauula side and Mauka by a path, Waialua side by Puhiele's land, Makai by the Konohiki.

He has no fish pond, as stated in his claim.

Kalaipoo, sworn, says he knows the old House site of claimant in Paumalu. Claimant does not reside there now, he lives in **Kaunala**. He has held his land in **Waialeale** for over five years.

The Konohiki had no objections to the claim for land in Waialeale.

Kahuku

Register

Waialeale, Oahu, Dek 31, 1847

E na Lunahoonakuleana e

Aloha oukou me ka mahaloia. O wau nei o Kahuku, ke hai aku nei ia oukou i ko'u kuleana aina ma **Kumupali**, ekolu loi, eia na aoao, ma ka A. ko Hawaii, ma ka Hi. ko Kimo ma ka Hem. ko Nahuaka he aina kula ma ke Komohana.

A he wahi Auwai – kanu no'u e pili ana me ko Kimo, a he wahi kula. Oia ko'u kuleana ma **Waiale'e**.

Aia ma **Kaunala** ia wahi kulana o'u, he kula uwala, he mala wauke. ekolu koa – waa.

Aia ma **Paumalu** kekahi kuleana o'u he mala – maia – awa -

O ko'u Pa - hale. Aia ma **Waialeale** eia kona mau aoao, ma ka A. ko Pooluku Pa hale – ma ke Ko- o ko Waihinalo.

Na Kahuku

kona

X

hoailona

Testimony

Claim 2831. Kahuku. (Deceased)

Kimo, sworn, says he knows the 3 kalo patches claimed by Kahuku in **Waialeale**. They are bounded on Hauula side by Kimo's land, Mauka by Kaaina's land, Waialua side by the kula land, makai by the Konohiki.

Claimant has no kula land cultivated. He has no claim in either **Kaunala** or **Paumalu**. His house site is in **Waialeale**. It is enclosed with a stone fence. He held the land for 15 years. Kahuku died about 2 years ago, leaving his land to Auwaipaa his child.

The Konohiki consented to his claim.

Kaina

Register

2532 Kaina Paipaiialua, Oahu Dek. 31. 1847

E na Lunahoona kuleana e

Aloha oukou. Owau o Kaina, ka mea kuleana ma Kaiki, elua loi ai, hookahi auwai, he kai kekahi o Kaiki. Eia na aoao. A. ka loi o Naloloa. Hi. ke kula. Ko. Ka auwai. He. ka auwai, Eia no keia loi o'u ma Poepoe 1. ma ke Komahana o ka auwai, he kula, a he uka laau, he wauke, he paka, he ipu haole, he koa, he ohia. Eia keia he pahale aia no ma Pahipahialua, eia na aoao. ua puni i ke kula. O ko'u noho ana mai a Kamehameha I mai a hiki i keia wa.

Na Kaina kona x hoailona

Testimony

No. 2832. Kaina.

Kauku, sworn says, he knows the kalo land of claimant in Pahipahialua. It consists of 4 patches, planted. They are bounded Makai by Kauaia's House site, on all the other sides by the Konohiki. The kula land claimed is not cultivated.

Claimant's house site is distinct from his land, not enclosed. He has held the kalo land for 16 years.

The Konohiki's agent consented to this claim.

Kaio

Register

Waialea, Oahu Dek. 31 1847

E na Lunahoonakuleana e.

Aloha oukou a pau me ka mahaloia. O wau nei o Kaio ke hai aku nei au i ko'u kuleana aina [crossed out: me Pa hale.]

Elua loi ma Kalalahili na aoao ma ka Ak. Pa hale o Holi, Hiki. ko Pahua. Hem. ko Nahuaka Kom. Ko Holi. A ma kahi e ae hookahi loi ma Punaluu na aoao ona. Ak. ko Kahuku Hi. ko Nahuaka. Hem. he kula Kom. ko Kaaina he kula uwala kekahi e pili ana i ka paahao.

Aia ma Pahipahialua he loi hookahi e pili ana i ko Kahaleipu ma ka Hikina a ma kahi e ae he mahele loi ma Kalou a he opu hala hookahi ma Kahaunakawi he moku weuweu kanu wauke ma Kakai ma uka e pili ana i ko Leimakani [reads closer to Leimakani, but also possibly Lumakani]

A ma kahi e ae he wahi kula uwala. ipu a hala i uka ma uka nae he noni. wauke he maia me koa waa ko Kaunala

Ma Paumalu he wahi uka kanu maia wauke uwala

O ko'u noho kuleana ana ma keia wahi mai a Kamehameha I mai a hiki mai i keia wa.

Na Kaio

kona

X hoailona

Testimony

Claim 2891. Kaio.

Holi, sworn, says he knows the kalo land of Kaio in **Waialee**. It consists of 4 patches, in 2 pieces. The first piece, of 3 patches, is bounded on Hauula side by Pahua's land, Mauka by Kalua's land, Waialua side by Holi's land, Makai by the same.

The second piece, of one patch, is bounded on Hauula side by Nahuaka's land, Mauka by the kula land, Waialua side by Kaaina's land, Makai by Kaauwaepaa's land.

He has no kula land in cultivation.

(Claimant says he has no land now in **Pahipahialua**).

His house lot is in **Kaunala**. It is enclosed with a stone fence. Claimant owns one part of this lot and Nahuaka owns the other part. He has held the land for 16 years.

The Konohiki of Waialee consented to this claim.

Kalalawaia

Register

Waialee, Oahu, Jan. 18. 1848

E na Lunahoonakuleana e.

Aloha oukou a me ka mahaloia. Owau nei o Kalalawaia. ke hai aku nei au i ko'u kuleana Aina ma **Waialee**, o **Kuahineole** ka inoa o ka mooaina, elua loi, eia na palena. A. ko Kauaua I, Hi. ko Keliikui, He. he aina – kula, Ko. ko Kaumailiula. He aina – kula kahi o'u.

He mau puhala kekahi o'u eha puhala, ma ka aina kula o Nahuaka kahi i ku ai. He lua lawaia **ia**, o **Hao** ka inoa o ua lua lawaia **ia la**.

Aia ma **Kaunala** ia wahi kuleana o'u, he mau mala, noni, maia, wauke, ko, uwala, ipu, ekolu – koa –waa.

Aia ma **Pahipahialua** ia wahi kuleana o'u, hookahi – loi, eia na aoaoa. A. ko Kuheleloa. Hi. ko Nahuaka He. ko Kaio. Ko. ko Kahaleipu, eono mau mala – mahiai – eono – puhala.

O ko'u kuleana Hale, aia no ma **Waialee**, eia na aoao. A. ke kai, Hi. he kula. He. ko Nua. Ko. ko Aie.

Mai a Kamehameha I mai ko'u noho kuleana ana maluna o keia mau wahi.

Na Kalalawaia

kona

X

hoailona

Testimony

Claim 4266. Kalalawaia.

Kaumailiula, sworn, says he knows the 2 kalo patches of claimant in **Waiale**. One of them was taken away from him by the Konohiki last year because he did not go to the poalima labor.

The other patch is bounded on Hauula side by Mahoe's land, Mauka by Mamala's land, on Waialua side by Witness' land, Makai by Kauaua's land. (Claimant says he has no land in **Kaunala**, and the kalo patch claimed by him in **Pahipahialua** belongs to Niheu No 2763).

Claimant's house lot is in **Waiale**. It is enclosed with a stone wall. He has held the land for 16 years.

The Konohiki consened to this claim.

(see page 201.)

[page 201]

Claim 4266. Kalalawaia. (from page 200.)

Kaneiahuea, sworn, says he knows the 2 kalo patches of claimant in **Waiale**. They are bounded on Hauula side by Keliikui's land, Mauka by the road, Waialua side by Kaumailiula's land, Makai by Kauaua's land & others.

Claimant has occupied the land for a long time, since before the death of Kinau. The Konohiki took away one patch from him because he did not go to the Poalima.

Aie, sworn, says the tax officer excused claimant from going to the labor days of the Konohiki because of his age. Keliawaiwaiole was the tax officer who excused him, in 1846.

Kalauokekapu

Register

2841 Kalauokekapu Kaunala Jan. 1 1847

E na Luna hoona Kuleana e

Aloha oukou me ka mahaloia. O wau nei o Kalauokekapu, ke hai aku nei au i ko'u kuleana aina, ma **Kaunala**, he mala uwala, ipu, he uka mahiai, ulu, ko, wauke, maia, noni. Aia ma **Waiale**, elima loi, he kau liilii ma kela wahi, keia wahi, aole akaka na aoao. O ko'u pahale, aia ma **Kaunala**, eia na aoao, A. Alanui Aupuni, Hi. Ko Kuheleloa, He. he kula, Ko. ko Poonui.

Mai a Kamehameha III mai ko'u noho kuleana ana mai.

Na Kalauokekapu

kona

x

hoailona

Testimony

No. 2841. Kalauokekapu . (Deceased)

Wailua, sworn, says he knows the land claimed by Kalauokekapu in **Kaunala**. It has not been cultivated since the death of Clt About 2 years ago. His widow, Kanaue, has removed to Hauula and the land of Clt Has fallen into the hands of the Konohiki, (whose agent now claims it for Kaapuiki).

Kalua

Register

2825 Kalua Kaunala Oahu Jan. 4. 1848

E na Luna hoona kuleana e

Aloha oukou me ka mahaloia. O wau nei o Kalua. Ke hai aku nei au i ko'u kuleana aina ma **Waialeale**, o **Konohikilau** ka inoa o ka mooaina, elima loi a me ka auwai, eia na aoao. A. ko Kawi a me Poonui, a me Pahua a me Kaio Holi loi koele Hi. ko Pahua aina. He. ko Hawaii mooaina. Ko. he aina kula no'u no ia, aia ia uka, he mau mala uwala. Aia ma **Kaunala**, he mala uwala, ipu, aia i uka, mala noni, wauke, maia, ko. Aia ma **Pahipahialua**, hookahi koa waa. O ko'u pahale, aia no ma **Kaunala**, eia na aoao. A. he kai Hi. ko Poonui pa He. pa aina Ko. he kula.

Mai a Kamehameha I mai ko'u noho kuleana ana mai.

Na Kalua

kona

x

hoailona

Testimony

No. 2825 Kalua

Wailua, sworn says, he knows the 6 kalo patches of Kalua in **Waialeale**. They are bounded on Hauula side by Pahua's land, Mauka by the Konohiki, Waialua side by kula land, Makai by the Konohiki and Holi's. Claimant has also a small piece of kula land adjoining the kalo patches.

His house site is distinct from his land. It is enclosed with a wall. He derived the land from his ancestors.

(Kalua says he has no claim in any other land than **Waialeale**).

The Konohiki consented to this claim.

Kamahalo

Register

Waialeale, Oahu, Jan. 4. 1847

E na Lunahoonakuleana e.

Aloha oukou me ka mahaloia. Owau nei o Kamahalo. ke hai aku nei au i ko'u kuleana aina ma **Waialea**, o **Keokea** ka iona o ka mooaina, ekolu loi, eia na aoao A. ko Muli Hi. ko Puhiele. He. he kula. Ko. ko Kaneiahuea. he kula – mahiai.

Maia ka makahiki o ka Haku 1845 ko'u noho kuleana ana mai.

Na Kamahalo

kona

X

hoailona

Testimony

Claim 2823. Kamahalo.

Puhiele, sworn, says he knows the 3 kalo patches claimed by Kamahalo in **Waialea**. They are bounded on Hauula side by Puhiele's land, Mauka by the kula land, Waiialua side by Kaneahuea's [sic] land, Makai by the Konohiki.

Claimant has no kula land in cultivation. He has held the above kalo land for 4 years.

The Konohiki consented to this claim.

Kanealii

Register

2812 Kanealii Waialea Oahu Dek. 31. 1847

E na Luna hoona kuleana

Aloha oukou me ka mahaloia Owau nei o Kanealii ke hai aku nei au ia oukou i ko'u kuleana aina ma **Kapunaiki**, ewalu loi, a he mahele loi ma kahi e ae e pili ana me ko Kahaleipu, he aina kula, he kai, he moku paakai, he uka, he koa waa, aia ma **Pahipahialua**, eia na aoao o kuu mau loi ma ka A. he kula, ma ka Hi. he kula, ma ka He. he uka, ma ke Ko. he kula.

Ke pili nei no kuu pahale i kuu mau loi.

Na Kanealii

kona

X

hoailona

Testimony

[pg] 447 [Unknown series]

2812 Kanealii

Kaikai (W) Hoohikiia Ua ike au i kona aina kalo ewalu loi me ke kula ma ka moo o **Kapunaiki** ma Waialea.

Mauka. Pali o Waialele. W. Moo Kanikikala. M. Paaina. K. kula Mokuhala.
He aina hooilina mai kona mau Makua mai i ka wa o Kamehameha I aole mea keakea.

Nua Hoohikiia. Ua like pu ko'u ike me ko Kaikai.

2812 Kanealii Januari 15. 1852.

kue C.G. Hopkins

Kahaleipu – Hoohikiia. Olelo mai la, Ua ike au i kona aina ma ka ili o Kapunaiki, Waialele, Koolauloa, pela ua like ko'u ike i na palena o kona aina me ka Kaikai W. i hai ai.

Ua ike au i kona aina Kalo, 18 [sic] loi a me kona aina Kula, ua mahiia e Kauwahi i ka wa o Lord George Paulet, oia ka M.H. 1843, a o Kauwahi, aole i mahiia, no ka pono ole o kahi i mahiia e Mamala ma ke kula no e hiki aku ai i na loi o ke kula maluna ae o na loi a hiki i ka pali, aole i mahiia o ka mahi kahiko ana no i kela wa.

Ua ike no au i ke ana ana o kona aina, ua anana no mai kahi i mahiia a hiki i kahi i mahi oleia, kahi oleia o ka mauu, aole au i lohe ua keakeaia oia ma na loi, o ke kula wale no kau i lohe i ke keakea e ka Haole [illegible] Mr. Moffitts i keia wa.

Hopkins: Ninau. Nawai na holoholona? Na makou no na holoholona e hele ana maluna oia wahi, aole o makou kanu iki a mahope iho hiki ae kau mau holoholona ua pau kahiko aku ka mahina ana oia ka wa o Lord George Paulet.

Kuheleloa. Hoohikiia. Ua ike no au i kona aina kalo ma Waialele, Koolauloa, he 18 [sic] loi a me ka aina kula: ua mahiia ma ka aoao e pili ana ma ka pa aina mai kona mau makua mai i ka wa o Kamehameha I mai, a i ka wa o Kamehameha III lilo ka aina ia Kanealii, a malaila no oia i mahi ahiki i keia wa, a o ka apana kula maluna o ke poo o na loi, ua mahi oia eha ana ai i kanu ai mai ka wa ka holo ana i Liholiho i Beritania, oia ka MH 1823 a hiki i keia wa. I ko'u manao ua kupono no o Kanealii ma kona wahi i mahi ai, a o kahi aole i mahiia no ke Konohiki no ia.

Kanoma Hoohikiia (no C.G. Hopkins) Ua ike au i keia wahi i hoopaapaia nei mawaena o ke konohiki a me Kanealii ma ka M.H. 1850, noho au ma Pahipahialua, mailaila ko'u ike ana i ke kanu ole ia ana o keia aina kula ona a hiki i keia wa, aole au i ike ua kanu iki o Kanealii ma keia wahi a keia wa aka, ua ike no au i kona mahi mau ana ma kona aina kalo a keia wa.

Kahaleipu, Olelo hou, aole au i lohe i ke keakea ana o J Piikoi, o Mamala, aole oia i hele pu me Kanealii i ke ana ana o ka aina o Kanealii no kona huhu paha, no kona kokoke e hemo, nolaila haalele wale oia i ka hana Konohiki, ina paha i hele pu ke Konohiki me ka mea Kuleana e ana i kona aina, ina na holo pono kona kuleana me ke keakea oleia a no kona hana pono ole ana kii ole i ke Konohiki nolaila, ka nui o kona aina.

Iona Piikoi Hoohikiia. Ua ike au ia Waialele i ka wa e kua laau ala ma Waoala, eiwa malama, a ua hele mau no hoi au ilaila i kekahi makahiki, aole hele malaila i kahi manawa, aka, na'u no kela aina maia ka holo ana o Haalilio i Beritania, oia ka MH 1842, aole au i ike ua mahiia Kauwahi o ka aina mawaho o ka pa aina mauka, aka, o loko wale no o ka pa aina. Ua ike au mahope iho nei, hahele ka holoholona a

kanaka malaila, aole maopopo ia'u ka nui o kona mau loi kalo, A ke waiho nahelehele wale la au ka apana aina Kula a hiki i keia wa, mai ka wa o ka loaa mai ia'u o keia aina, oia ko'u ike.

A.F. Turner. Hoohikiia, He ana aina au, ua ana wau i na kuleana ma **Waialee**, aole au i ike he wahi i mahiia ma ke kula mawaena o na loi a me ka pali, aole no hoi i loaa ia'u kekahi hoailona e maopopo ai ua mahiia mamua, o ka nui o ka aina i loaa i na kanaka, ma kanaka ma ka lakou wahi i mahi pono i he Eka hookahi, a ua oi aku ka nui a ka Eka hookahi mamua o kona wahi i mahi pono ai ke huipua ka aina o na kanaka a pau a maheleia. Ia'u i hele ai ua kuhikuhi wale mai kanaka i ko lakou aina a nui A o ka Moku paakai ana, ua keakea no ke Konohiki, no ka mea, aole olelo hoike e maopopo ai kela wahi nona.

Kaneiahuea

Register

Waialee, Oahu, Dek. 31. 1847

E na Lunahoonakuleana e.

Aloha oukou me ka mahaloia, Owau nei o Kaneiahuea ke hai aku nei au i ko'u kuleana aina ma **Keokea** eono loi, eia na aoao, ma ka A. ko [crossed out] he loi – koele, ma ka Hi. ko Kamahalo, ma ka He. he aina kula, ma ke Ko. ko Kuheleloa.

Aia ma **Pahipahialua**, he mala wauke, uwala, maia, ko,

O ko'u Pa-hale aia ma **Waiale'e** eia na aoao, ma ka A. he kai, ma ka Hi. ko Kauku pa ma ka He. ala Aupuni, ma ke Ko. he wahi awawa one.

Na Kaneiahuea

kona

X

hoailona.

Testimony

Claim 2821. Kaneiahuea.

Kaumailiula, sworn, says he knows the kalo land of claimant in **Waiale'e**. It consists of 3 patches bounded on Hauula side by Keaka's land, Mauka by the kula land, Waialua side and Makai by the Konohiki.

(Claimant says he has no land in Pahipahialua)

His house site is in **Waialee**. It is enclosed with a stone wall. He has held the kalo land for 16 years. He had formerly six patches, but he gave up 3 of them to the Konohiki some time ago.

The Konohiki consented to this claim.

(Testimony taken in Honolulu)

Kalalawaia, sworn, says he knows the land of Claimant in **Waialee**. He was excused from going to the Poalima by Keliwaiwaiole. The land consists of 6 kalo patches. They were not divided by the tax officer at the time clt was excused from the Poalima. Mamala the Konohiki, took away 3 of the patches because Claimant did not go to the Poalima.

(The Board will write to Keliwawaiwole and Koekoe to enquire about them excusing the Claimant from the Poalima.

Kauaua 1

Register

Waialeale, Dek. 31. 1847

E na Lunahoonakuleana e.

Aloha oukou a pau me ka mahaloia. Owau nei o Kauaua ke hai aku nei au i ko'u kuleana-aina, a me ka Pa-hale.

Elima o'u mau loi - ai a ma kahi e ae, he hapalua o ka loi - eia na palena o na loi elima, ma ka Ak. ko Laiehu, Kalauokekapu ma ka Hi – a me ka He – a me ke Ko – he aina – kula. O ka hapalua loi e pili ana me ka pa-hale o Naloloa. Oia ko'u kuleana ma **Waialeale**.

2. Aia ma **Pahipahialua** kekahi kuleana o'u elua loi ai, he kula, a he wahi uka mahiai a me kuu Pa-hale, eia na aoao o kuu pa-hale he kai ma ka A. ma ka Hi– ko Mano, ma ka Hema na loi o Kaina ma ke Kom., ka Pa-hale o Kahaleipu

Mai a Kinau mai ko'u noho kuleana mai a hiki i keia manawa.

Testimony

Claim 2814. Kauaua 1st.

Kauaua 2nd, sworn, says he knows the kalo land of claimant in **Waialeale**. It consists of 4 patches, bounded on Hauula side and Mauka by the kula land, Waialua side by witness' land, Makai by Kuheleloa's land.

Witness knows the 2 kalo patches of Claimant in **Pahipahialua**. They are bounded on Hauula side by the Konohiki, Mauka by Kaina's land, Waialua side by Kahaleipu's House Site, Makai by Claimant's House site.

His House Site adjoins the last piece, there is an adobie [sic] house (of his) on it ,and it is enclosed by and adobie [sic] wall.

Claimant has held the kalo land for 14 years.

The Konohiki of **Waiale'e** consented to this claim

Kauaua 2

Register

Waialeale, Jan. 1. 1847

E na Lunahoonakuleana e.

Aloha oukou me ka mahaloia. O wau nei o Kauaua 2 ke hai aku nei au i ko'u kuleana aina ma **Waialeale**, o **Kilawai**, ka inoa o ka mooaina, elua – loi. A. ko Laiehu. Hi. He. he aina kula. Ko. ko Kauaua 1 loi. He oki loi e ae e pili ana me ko Kahaleipu, he kula – uwala.

Aia ma **Pahipahialua**, he mala ipu, uwala

Aia ma Kaunala, he kula ipu, uwala.

Na Kauaua 2
kona
X
hoailona

Testimony

Claim 2815. Kauaua 2nd.

Kaumailiula, sworn, says he knows the 2 kalo patches claimed by Kauaua 2nd in **Waialeale**. They are bounded on Hauula side by Laiehau's land, Mauka by the kula land, Waialua side by Aie's land, Makai by the Konohiki.

(Claimant says he has no other kuleana)

He has held this land for nine years.

The Konohiki consented to this claim.

Kauku

Register

2844 Kauku **Pahipahialua** Oahu. Dek. 31. 1847

E na Luna hoona kuleana e

Aloha oukou me ka mahaloia. Owau nei o Kauku ke hai aku nei au i ko'u kuleana aina ma **Mokuhala**, eha loi, he aina kai, he kaheka paakai, he aina kula, he uka mahiai, eia na aoao o ko'u mau loi A. he loi paahao Hi. he loi paahao He. aina kula Ko. ko Kuheleloa. O ko'u kuleana hale, aia ma **Waiale'e**, he kai ma ka Akau ma ka He. alanui Aupuni, ma ke Komohana ko Kaneiahuea.

Na Kauku kona x hoailona

Testimony

No. 2844. Kauku.

Keone, sworn, says he knows the kalo land of Kauku in **Pahipahialua**. It consists of five patches bounded on Hauula side by Keone's Kaina's land, Mauka by the Konohiki, Waialua side by Keone's land, Makai by Kahaleipu's. Clt has no kula land in cultivation. His house site is in **Waialeale** – not enclosed. He has held the kalo land for 18 years.

Kanoma, agent of the Konohiki, consented to the claim for kalo land.

Kaumailiula

Register

2921 Kaumailiula Waialeale Dek. 31 1847

E na Luna hoona kuleana e

Aloha oukou me ka mahaloia. Owau nei o Kaumailiula ke hoike aku nei au ia oukou i

ko'u kuleana Aina, a me ka pahale. Eono o'u mau loi, a ma kahi e ae elua. He kuleana kahiko mai no keia mai a Kamehameha I mai no, a hiki mai no i keia manawa.

O na palena o ko'u mau loi eono, Akau, ko Kauaua Hikina, ko Kalalawaia, he aina kula ma ka Hema, ko Namohala ma ke Komohana.

Ko na loi elua e pili ana me ke koele kekahi, e pili ana me ko Kahuwaa kekahi loi. Ko ka Pahale, he kai ma ka Akau, ma ka Hi, e pili ana i ko Pahua He. ko Hawaii, Ko. ko Waihinalo.

He aina kai o **Kamanawa** ka inoa, he aina kula. Aia ma **Kaunala** ia kuleana o'u he mau mala wauke, he mau mala uwala. Aia ma **Paumalu** kekahi kuleana o'u, he mau mala uwala, he mau mala ipu.

Na Kaumailiula kona x hoailona

Testimony

2921. Kaumailiula.

Kaikai (W) Hoochikii. Ua ike au i kona aina ma ka Mooaina o **Kaloaloo** ma **Waialeale**. Eha mau loi me ke kula.

Mauka. Pali o Waialeale W. Moo o **Kaohe**. M. Loi o Puunoni. K Moo o **Kapaakea**,

No Awili mai kona aina he aina kauoha no kana moopuna ka wahine a Kaumailiula. Ua haawi mai o Awili ia ia i ka M.H. 1844. Aole mea keakea ia Kaumailiula mai kona noho ana i hiki i keia manawa. Kanealii Hoochikii Ua like pu ko'u ike me ko Kaiakai.

Kaunahi

Register

Pahipahialua, Jan. 1. 1847

E na Lunahoonakuleana e

Aloha oukou me ka mahaloia. Owau nei o Kaunahi, ke hai aku nei au i kou kuleana aina ma **Pahipahialua**, hookahi loi, ua puni i ke kula, he mala – uwala, ipu, he mala – wauke, maia, Aia ma **Waialeale**, hookahi loi, e pili ana me ko Nua, a me Aie. Aia ma **Kawela** hookahi loi, eia na aoao A. ko kane. Hi. loi - koele He. loi Aupuni Ko. ko

He mala noni, he kula mahiai.

O ko'u pa hale, ia na aoao

A. he kai He. he kula He.

Ko. pa - aina

Mai a Kamehameha I mai ko'u noho kuleana ana mai.

Na Kaunahi kona X hoailona

Testimony

Claim 2873. Kaunahi

Kalakoa, sworn, says he knows the kalo patch claimed by Kaunahi in **Kawela**. It is bounded on Hauula side by the kula land. Mauka by Paku's land. Waialua side by Paukoa's land, Makai by Kane's land. Claimant has no Kula land in **Kawela**.

He has a House site in **Kawela**. It is not enclosed.

Witness knows the kalo patch of claimant in **Pahipahialua**. It is bounded on all sides by the kula land. Claimant has held these lands about ten years.

The Konohiki of **Kawela** consented to the first part of the claim.

Kawau

Register

7640 Kawau

Kuleana aina o Kawau ma **Waialele** i **Koolauloa**.

I na Luna Hoona kuleana aina. Aloha oukou ke hai aku nei au i ko'u kuleana aina i mua o oukou 1 Moo aina o'u ma ke Ahupuaa o **Waialele, i Koolauloa Moku** **puni Oahu**, 4 loi i loko o ua moo aina nei 1 Auwai, 1 kula maloo. Ua like no ka waiho ana o ko'u poe loi i kahi hookahi aole he lele aku.

Eia na palena ma na aoao like, ma ka Akau ka mooaina o Kimo, ma ka Hikina ka loi o Kahuku, ma ka Hema he kula maloo o **Punaluu** ia Nahuaka, ma ke Komohana ka mooaina o **Kauhiokalani**. Oia no ko'u kuleana aina ma **Waialele**.

Apana 3 Waialele Koolauloa

Januari 1. 1848. Na Kawau

Testimony

Claim 7640. Kawau.

Mamala, sworn, says Kawau died about two years ago. His land fell to his widow who gave it up to the Konohiki. Witness produced a writing signed by her, dated April 25, 1850, in which she gives up her claim, to the Konohiki's agent.

(Mr. Hopkins, as Land Agent for the King, claimed this land).

Kawi

Register

2854 Kawi Waialele Oahu Dek 31 1847

E na Luna hoona kuleana e

Aloha oukou me ka mahaloia. Owau nei o Kawi, ke hai aku nei au ia oukou i kou kuleana aina ma **Kalou**, he mahele loi, a he mau puepue elima ma kahi e ae, e pili me ko Keliikui, a he loko e pili ana me ko Poonui, a he kapa Auwai e pili ana me ko Kimo, he kula uwala. Oia ko'u mau kuleana ma **Waialele**. Aia ma **Kaunala**, he mala maia, wauke, noni, ipu, alani. Aia ma **Paumalu**, he awawa ulu, he noni, he mala uwala, ipu.

Aia ma **Waialee** kuu kuleana pahale. ma ka A. pa Aupuni, ma ka Hi. ko Keliikui, ma ka He. na loi o Kaio ma ke Ko. ko holi pa.

Mai a Haalilio i noho konohiki ai maluna o **Waialee**.

Na Kawi kona x hoailona

Testimony

Claim 2854. Kawi. (Deceased)

Mamala, sworn, says he knows the kalo land claimed by Kawi in **Waialee**. It belongs to the Konohiki. Kawi died in 1848 leaving his land to his wife, who about a year ago gave up her rights in the land to the Konohiki. No one has worked on the labor days of the Konohiki for this land since the death of Kawi.

Mr. Hopkins, as Land Agent for the King claimed this land.

Kelemana

Register

2836 Kelemana Kawela Jan. 1. 1847

E na Luna hoona kuleana e

Aloha oukou me ka mahaloia. Owau nei o Kelemana, ke hai aku nei au i ko'u kuleana aina ma **Kawela**, o **Mahealani**, hookahi loi, eia na aoao, ma ka Akau ko Kekua, Hi. Mahoe, He. he koele. Ko. ko Kaopuu. he mala uwala, ipu, he uka mahiai. Aia ma **Kahuku** ekolu loi, e pili ana me ko Puahiki, a me Kaika, he kula ko ma ke Komohana. Aia ma **Pahipahialua**, he mala uwala, noni, wauke, ipu.

Aia ma **Waialee**, hookahi loi e pili ana me ko Mahoe, me ko Nua, me ko Aie, me ko Kauaua. Aia i **Pahipahialua**, elua kumu hala.

Mai a Kamehameha III ko'u noho kuleana ana mai.

Na Kelemana kona x hoailona

Testimony

Claim 2836. Kelemana.

Kalakou, sworn, says he knows the kalo patch claimed by Kelemana in **Kawela**. It is bounded on Hauula side by Kauaula's land, Mauka by Paku's land, Waialua sidy by the Konohili, Makai by Paukoa's land.

Claimant has no kula land in **Kawela**.

Claimant gave up his lands in **Kahuku** and **Pahipahialua** to the Konohiki some time ago.

Claimant's House site is in **Kawela**, and is not enclosed. He has held the patch in **Kawela** for about ten years.

The Konohiki consented to this claim.

Keliikui

Register

Waialeale, Oahu. Dek. 31. 1847

E na Lunahoonakuleana e.

Aloha oukou me ka mahaloia. Owau nei o Keliikui. ke hai aku nei au ia oukou i ko'u kuleana aina ma **Palakai**, elima loi, eia na aoao, ma ka A. ko Kauaia, ma ka Hi. ko Pooluku, ma ka He. he aina – kula, ma ke Ko. ko Kalalawaia, he aina – kula uwala.

Aia ma **Paumalu** he mala noni, wauke, maia, he mau kumu ulu, elua koa – waa

O ko'u kuleana hale aia no ma **Waialeale**, eia na aoao ma ka A. alanui Aupuni ma ka Hi. ko Naloloa pa hale ma ka He. ko Poonui loi, ma ke Ko. ko Kawi pa-hale.

Na Keliikui

kona X hoailona

Testimony

Claim 2819. Keliikui.

Keoni [sic], sworn, says he knows the kalo land of Claimant in **Waialeale**. It consists of 3 patches, bounded on the Hauula side by Pooluku's land, Mauka by the kula land, Waialua side by Kalalawaia's land, Makai by the Konohiki.

(Claimant says he has no claim in **Paumalu**).

His house Lot is in **Waialeale** and is not enclosed. He has held the kalo land for about 16 years.

The Konohiki consented to this claim.

Keliwaiwaiole

Register

2853 Keliwaiwaiole Kaunala Jan. 1. 1847

E na Luna hoona kuleana e

Aloha oukou me ka mahaloia. Owau nei o Keliwaiwaiole ke hai aku nei au i ko'u kuleana aina ma **Kaunala**, ekolu mala uwala. Aia ma **Waialeale**, elua loi e pili ana me ko Aie, a me ko Puhiele, he aina kula uwala, ipu,. Mai ka malama o Aug. Makahiki o ka Haku 1847.

Na Keliwaiwaiole kona x hoailona

Testimony

[NA]

Keoho (W)

Register

2829 KeohoWaialele Oahu Dek. 31. 1847

E na Luna hoona kuleana e

Aloha oukou a pau me ka mahaloia Owau nei o Keoho. Ke hai aku nei au ia oukou i ko'u kuleana aina ma **Kahenawai**, he hala, a ma Kahi e ae ma **Paumalu** he uka kanu maia, a ma kahi e ae ma **Kaunala** he koa. O ko'u noho kuleana ana ma keia wahi mai a Kamehameha I mai a hiki mai i keia wa.

Na Keoho kona X hoailona

Testimony

Claim 2829. Keoho. (Deceased)

Puhiele, sworn, says he knows the kula land claimed by Keoho in **Paumalu**. It has not been cultivated for some time. Keoho died in 1849. She was the wife of Kuheleloa No. 2824.

Kihewa (W)

Register

2898 Kihewa Pahipahialua Dek. 31. 1847

E na Luna hoona Kuleana e

Aloha oukou a pau me ka mahaloia. Owau nei o Kihewa. Ke hai aku nei au i ko'u kuleana aina ma **Pahipahialua**, he uka kanu noni, uwala, wauke, a me na mea e, he kula uwala, wauke, ipu awaawa, ma **Puupilau** e pili ana i ke Alanui Aupuni ma ka Hema, hookahi loi ai ma **Ka Palakai** e pili ana i ko Kuheleloa, a me ko Nahuaka, me ko Kalalawaia, me ke kula. O ko'u noho kuleana ana mai a Kamehameha I mai a hiki mai i keia wa.

Na Kihewa kona X hoailona

Testimony

No. 2828. Kihewa. (Deceased)

Wailua, sworn says, he knows the kalo patch claimed by Kihewa in **Pahipahialua**. It is bounded on Hauula side and Mauka by the Konohiki. Waialua side by Kahaleipu's land, Makai by Kuheleloa's land. Claimant has no kula land in cultivation. He [sic] held the kalo patch about 18 years.

Kihewa died about 2 years ago, leaving her kalo patch to Puupuu her son, by whom it is now claimed.

The agent of the Konohiki consented to the claim for the Kalo patch.

Kimo

Register

Waialeale, Oahu, Dek. 31. 1847

E na Lunahoonakuleana e.

Aloha oukou me ka mahaloia. Owau nei o Kimo, ke hai aku nei au ia oukou, i ko'u kuleana aina ma **Keokea** a me **Hekuna**, 2 loi o Keokea, he mahele loi ko Hekuna, eia na aoao o na loi elua ma **Keokea**, ma ka A. he loi paahao, ma ka Hi. ko Kauaia, ma ka He. ko Namohala, ma ke Ko. ko Kawi. eia na aoao o ka mahele loi ma Hekuna, ma ka A. ko Kawi, ma ka Hi. ko Namohala, ma ka He. ko Kaaina ma ke Ko. ko Kawi, Kaauwaepaa, Kahuku) he kula uwala.

Aia ma **Kaunala** ia kuleana o'u, he mala uwala, wauke, ipu

Na Kimo

kona hoailona

X

Testimony

Claim 2817. Kimo.

Kaumailiula, sworn, says he knows the two kalo patches of Kimo in **Waialeale**. They are bounded on Hauula side by Namohala's land, Mauka and Makai by the Konohiki, Waialua side by Kahuku's land.

Claimant has no kula land in **Waialeale**. He has held the kalo land for four years.

The Konohiki consented to this claim.

Kuaehu

Register

2857 Kuaehu Kaunala Oahu Dek. 31. 1847

E na Luna hoona kuleana e

Aloha oukou a pau. Owau nei o Kuaehu, ke hai aku nei au ia oukou i ko'u kuleana aina ma **Waialua** [sic: Waialeale] hookahi o'u loi ai, aia ma **Kiao**, na aoao ona ma ka A. ko Kauaia, Hi. ko Kalalawaia. He. ko Kahuewaa. Ko. ko Kahuewaa no. O ko'u noho kuleana ana ma keia wahi mai a Kamehameha III mai no a hiki mai i keia wa.

Na Kuaehu Kona X Hoailona

Testimony

2857. Kuaehu.

No information.

Kuaua

Register

2820 KuauaWaialele Oahu Jan. 4. 1847

E na Luna hoona kuleana e

Aloha oukou me ka mahaloia. Owau nei o **Kuaua** ke hai aku nei au i ko'u kuleana aina ma **Waialele**, o **Kaohe** ka inoa o ka moo aina, he mahele loi, eia na aoao A. ko Kimo. Hi. ko Kaumailiula. He. ko Namohala. Ko. ko Kimo aina, he mahele loi ma kahi e aku, e pili ana me ko Mano, a me Puhiele, a me Muli.

Aia ma **Kaunala** ia wahi o'u, mala uwala, ipu, wauke, maia, ko. Aia ma Paumalu he kula uwala, ipu, aia iuka, mala maia, wauke, he ulu ko.

Mai a Kamehameha II mai ko'u noho kuleana ana mai.

Na Kuaua kona x hoailona

Testimony

Claim 2820. Kuaua. (Deceased)

Kamauiliula [sic], sworn, says he knows the half kalo patch claimed by Kuaua in **Waialele**.

It belongs to Namohala, in whose claim it is included.

Kuaua had no other claim. He died the present year.

(this was confirmed by others and no person disputed it.)

Kuheleloa 1

Register

Waialele, Oahu, Dek. 31. 1847

E na Lunahoonakuleana e.

Aloha oukou me ka mahaloia. Owau nei o Kuheleleloa 1, ke hai aku nei au ia oukou i ko'u kuleana aina ma **Kapalakai**, elima loi ai, a he kapa Auwai - he aina kula a he uka, eia na aoao o ko'u mau loi ma ka A. he kai, ma ka Hi. he mooaina o **Kaukahaia**, ma ke He. he aina— kula, ma ke Ko. ko Pooluku. oia ko'u mau kuleana ma **Waialele**.

Aia ma **Kaunala** kekahi kuleana o'u he mala uwala he mala wauke, he mala noni he mala maia. Aia no hoi ma **Kaunala** ko'u Pa-hale. Ma ka A. he kai ma ka Hi. he awawa ma ka He. ka pa Aupuni ma ke K. ko Kalauokekapu.

Na Kuheleloa

kona

X

hoailona

Testimony

Claim 2824. Kuheleloa.

Puhiele, sworn, says he knows the kalo land of claimant in **Waialeale**. It consists of 4 patches planted. They are bounded on Hauula side and Mauka by the Konohiki. Waialua side by Pooluku's land, Makai by the stone wall.

Claimant has also a piece of kula land in **Kaunala** planted with wauke, bananas, &c Bounded on all sides by the Konohiki.

His House site is also in **Kaunala**, and is distinct from his land. It was formerly enclosed with a stone wall. Claimant has held the above land for over 15 years.

The Konohiki of **Waialeale** consented to this claim.

Kuheleloa 2

Register

Waialeale, Oahu, Dek. 31. 1847

E na Lunahoonakuleana e

Aloha oukou me ka mahaloia, Owau nei o Kuheleloa ke hai aku nei au ia oukou i ko'u kuleana aina ma Kalou, he mahele loi, a he loi ma kahi e ae, no ke kauliilii ma kela wahi keia wahi, aohe hiki pono ke hai aku i na aoao. Oia ko'u mau kuleana ma Waialeale.

Aia ma Pahipahialua kekahi kuleana o'u, hookahi loi, a he uka – mahiai, mala wauke, noni, maia.

O ko'u Pa - hale kekahi aia ma Pahipahialua
ma ka A. he kai
ma ka Hi. ko Kahaleipu pa
ma ka He. he loi – ai
ma ke Ko he loi

Na Kuheleloa
kona X hoailona

Laiehau

Register

Waialeale, Jan. 1 1847

E na Lunahoonakuleana e.

Aloha oukou me ka mahaloia. Owau nei o Laiehau, ke hai aku nei au ia oukou i ko'u kuleana aina ma **Waialeale**, o **Kilawai** ka inoa o ka mooaina, elima loi. eia na aoao A. ko Hauleiaole. Hi. ko Kupau. He. Ko Kauaua loi. Ko. ko Kauaua no. He mahele loi ma kahi e ae, e pili ana me ko Kekua, a me Kahaleipu. He mahele oki loi e pili ana me ko Namohala, he oki loi a me ka Auwai e pili ana me ko Kimo a me

Nahuaka he kula uwala.

Aia ma **Kaunala**, he uka – mahiai – wauke, noni, maia, alani, ko, he hala, uwala he kula uwala.

Mai a Kamehameha I mai ko'u noho kuleana ana mai

Na Laiehau

kona

X

hoailona

Testimony

Claim 2688. Laiehau.

Kainoakane, [sic] sworn, says he knows the kalo land of claimant in **Waialeale**. It consists of 4 patches in 3 pieces. The first piece of 2 patches is bounded on Hauula side by the kula land, on all the other sides by Kauaua's land.

The second piece of 1 patch is bounded Makai by Kuheleloa's land, on all the other sides by Kauaua's land.

The third piece, of 1 patch, is bounded makai by Kainoakane's [sic] land, on all the other sides by the kuleana of Kauaua 2nd.

Laiehau has no claim now in **Kaunala**. He has no House site. He has held the land for 16 years.

The Konohiki consented to this claim.

Mahoe

Register

Waialeale, Oahu, Dek. 31. 1847

E na Lunahoonakuleana e.

Aloha oukou me ka mahaloia. Owau nei o Mahoe, ke hai aku nei au i ko'u wahi kuleana aina ma **Kuaimalalo**, ekolu loi, eia na aoao, ma ka A. O **Kalou**, ma ka Hi. Ko Nua, ma ka He. he loi koele, ma ke Ko. ko Aie.

Aia ma **Kawela** kekahi Kuleana o'u hookahi loi, eia na aoao, ma A. ko Kaunahi, ma ka Hi. Ko Mumuku ma ka He. ko Kaopuu[?] Ma ke Ko. ko Muli. Aia ma Kahuku ia wahi o'u hookahi loi, eia na aoao. ma ka A. a me Hi. o Kekua, ma He. Puahiki ma Ko. ko Kawaaloa. Aia ma **Pahipahialua** he mala, maia, wauke, ko, 3 koa – waa. 3 koa waa i **Kaunala**, he mala – noni.

O kuu Kuleana hale, aia ma **Pahipahialua**.

Na Mahoe

kona

X

hoailona

Testimony

Claim 2776. Mahoe.

Aie, sworn, says he knows the 3 kalo patches claimed by Mahoe in **Waialeale**. They are bounded on Hauula side by Nuaa's [sic] land, Mauka and Makai by the Konohiki, Waialua side by Aie's land

(Claimant says he has no claim in **Kawela** or any other land except **Waialeale**).

His house site is in **Pahipahialua**, and is not enclosed. He has held the kalo land for 16 years.

The Konohiki consented to this claim.

Mano

Register

2769 Mano Pahipahialua Oahu Jan 4 1848

E na Luna hoona kuleana e

Aloha oukou me ka mahaloia. O wau nei o Mano. ke hai aku nei au i ko'u kuleana aina ma **Pahipahialua**, hookahi loi, eia na aoao. A. ka pahale o Kauaua, Hi. loi koele He. ko Kaina aina Ko. ko Naauhau aina, he aina kula, uwala, ipu, wauke, maia, ko, laki, he mala ma uka, noni, wauke, maia, ko, eha koa waa. Aia ma **Waialeale** ekolu e pili ana me **Kalou**, hookahi loi i ko Nua, hookahi loi e pili ana me ko Naloloa. O ko'u pahale aia ma **Pahipahialua**, eia na aoao. A. Alanui Aupuni Hi. awawa one. He. he loi paahao. Ko. ko Kauaua pa.

Mai a Kamehameha I mai ko'u noho kuleana ana mai

Na Mano kona x hoailona

Testimony

No. 2769. Mano. (Deceased).

Kauku, sworn says, he knows the kalo patch claimed by Mano in **Pahipahialua**. It is bounded on Hauula side by the Konohiki, Mauka by Kaina's land, on Waialua side by Naauhau's land, Makai by Kauaua's land.

Cldt has no kula land in **Pahipahialua**, nor has he any claim watever in **Waialeale**.

His house site is in **Pahipahialua**, near the kalo patch, not enclosed. Mano died about 2 years ago, leaving his land to Puamana his Grandson. Mano held the land for 16 years.

The agent of the Konohiki consented to this Claim.

Manoha

Register

2774 Manoha Kaunala Oahu Jan. [illegible] 1847

E na Luna hoona kuleana e –

Aloha oukou me ka mahaloia. Owau nei o Manoha, ke konohiki o **Kaunala**, ke hai aku nei au i ko'u kuleana aina ma **Kaunala**, he uka uwala, wauke, noni, ko, maia, he ulu. He kula uwala, ipu, mala niu, he aina kai. Aia ma **Paumalu**, mala uwala, wauke, maia. Aia ma **Waialea** kekahi kuleana o'u ua kau li'ili'i ia wahi aku, ia wahi aku, ekolu kapakahi loi. Aia ma **Paumalu**, hookahi koa waa. O ko'u kuleana hale, aia ma **Kaunala**, eia na aoao A. mala niu. Hi. He. he kula Ko. he kula. Mai a Kamehameha II mai ko'u noho kuleana ana mai.

Na Manoha kona x hoailona

Testimony

[NA]

Muli

Register

Kawela Oahu Dek. 31 1847

E na Luna hoona kuleana

Aloha oukou. Owau o Muli ke hai aku nei au i [crossed out] a oukou i ko'u kuleana aina ma **Kamooiki** elua o'u mau loi ai. eia na aoao, ma ka aoao hikina o ko Kekua loi malaila kekahi loi o'u ma ka aoao. K. o ko Kekua loi malaila kekahi loi o'u.

2. Aia ma **Pahipahialua** kekahi, he kula, a he loi ai hookahi, eia na mea kanu, he uala, he ipuhaole, he noni, he wauke, he ipu awaawa, he paka, eia na aoao, A. ko Kauaua loi Hi. ko Kaina loi. Ko. ko Kauaua no. Hm. ko Kaina.

3. Ko **Waialea** mau kuleana o'u 1 loi ai, eia na aoao A. **o Kalou** Hi. Ka Auwai Hm ka auwai.

O ko'u Pahale kekahi aia ma **Pahipahialua**. M.H. 1843 ko'u noho ana maluna o keia mau Kuleana

Na Muli

Kona

X

hoailona

Testimony

Claim 2780. Muli.

Kaaiaweuweu, sworn, says he knows the 2 kalo patches claimed by Muli in **Kawela**. They belong to Paukoa (No. 2734) whose brother gave permission to Muli to plant in

them 2 years ago. They have since been restored to Paukoa who now claims them. Paukoa planted the present crop. Muli has a house site in **Pahipahialua** which is not enclosed. He has no other claim there.

Kalakoa sworn says he knows the kalo patch claimed by Muli in **Waialeale**. It belonged to Naauhau under whom claimant planted. The patch is now nahelehele.

The Konohiki of **Pahipahialua** consented to the claim for a House site.
(Evidence taken at Honolulu)

Kaneiahuea, sworn, says he knows the land claimed by Muli in **Waialeale**. It consists of one kalo patch, bounded on Hauula and Waialua sides by the Konohiki, Mauka by Aie's land, Makai by the stone wall. Claimant got this patch from Kuheleloa in 1846. The sister of Naauhau had the right to this patch but she has not put in any claim for it. The Konohiki objects to this claim because he gave the land to Naauhau and not to Muli.

Kalalawaia, sworn, says the testimony of last witness is correct. Kuheleloa gave the land to Kauaikaua the sister of Naauhau. She gave the land to Muli who has always gone to the poalima of the Konohiki.

(G.M. Robertson is instructed to write to Mamala the Konohiki to return the patch to Muli.

[separate document]

HALE HOONA HONOLULU
Okatoba 22, 1850

2797 Kamuli

Kaneiahuea Hoohikiia Ua ike au i keia kuleana ma **Waialeale Koolauloa** he kuleana loi, 1 loi aole kahuahale.

Penei na palena. Hauula, o ka aina o **Kalou**. Mauka, aina o **Kuapa**, Waialua aina o ke konohiki, Makai, pa aina

No Kuheleloa mai keia aina mamua aku o ka M.H. 1846 a ua noho oia malaila a hiki i ka lawe ana o ke konohiki i ua loila [sic] aka; o keia loi ua lilo no ia Nahikaua ke kaikuahine o Naauhau no ka mea nona no ia mai ke konohiki o Kuheleloa mai, mamua aku o ka M.H. 1846, a nana no i haawi ia Muli, aka; aole he keakea mai o Naniukaua [sic], a o Mamala ka mea keakea, o ke kumu o ke keakea ana o Mamala, o ka manao ana o Muli e haawi ia na loi nei no Naauhau, a oia ke kumu o kona lawe ana i ko'u lohe a me ko'u ike.

Kalalawaia Hoohikiia. Ua like no ko maua ike, No Kuheleloa mai ka haawi keia loi a haawi ia Kanaiakaua, a haawi o Kanaiakaua ia Muli, no ka mea, he wahine o Kanaiakaua nana, oia ke kaikaina o ka Muli wahine.

O ka manawa o ka lawe ana i ka poalua i hala ae nei, oia ka la 15, o Oct nei 1850, a ua hele mau oia i ka hana a ke Konohiki, a me ka poalua o ke Aupuni, a ua hookupu no oia i ka Auhau o ka aina.

Hooholoia, e lilo keia loi ia ia, aole o ke Konohiki, a na J. Kekaula-[partially illegible] i palapala aku ia Mamala ke Konohiki. Ua hiki mai o Mamala ke Konohiki, a ua ae mai oia, no Muli no ia loi, a e komo no ia kona kuleana.

Naauhau

Register

2764 Naauhau Pahipahialua Oahu Jan. 4. 1848

E na Luna hoona kuleana e
Aloha oukou me ka Mahaloia. Owau nei o Naauhau, ke hai aku nei au i ko'u kuleana aina ma **Pahipahialua**, hookahi loi, eia na aoao, ua puni i ke kula, he loi ma kahi e ae, aia mauka ae o **Puupilau**, aia iuka, he mala maia, kalo, he mala wauke, noni, uwala, he loko ia no'u, he puhala. Aia ma **Oio** he mala wauke, he mala ape, aia ma **Kaunala** elua kumu niu o'u.

Na Naauhau kona x hoailona

Testimony

Kahuku, 1st October 1850

No. 2767. Naauhau.

Kauku, sworn says, he knows the land claimed by Naauhau in **Pahipahialua**. There is none of it cultivated. (This was confirmed by the claimant himself). Claimant has a fish pond which he has held for 16 years. It is surrounded by the kula land of the Konohiki.

(Naauhau says he has no claim in either **Oio** or **Kaunala**).

The Agent of the Konohiki objected to the claim for the fish pond by order of C. Kanaina, but he could assign no intelligible reason for so doing.

Nahuaka

Register

Waialeale, Oahu, Dek. 31. 1847

E na Lunahoonakuleana e.

Aloha oukou me ka mahaloia. O wau nei o Nahuaka ke hai aku nei au oukou i ko'u wahi kuleana aina ma **Punaluu**, hookahi loi, eia na aoao, ma ka A. ko Kahuku, ma ka Hi. ko Kaaina, ma ka He. he aina kula ma ke Ko. ko Kaio, he loi e ae no hoi e pili ana me ko Holi, he loi e ae no hoi e pili hou ana i ko Holi he aina kula uwala.

Aia ma **Pahipahialua** ia kuleana o'u, hookahi loi, e pili ana me ko Kaio ma ka Akau, ma ka Hi. o ko Kihewa.

Aia ma **Kaunala**, he mala wauke, noni, ko – maia. Aia ma **Paumalu**, he uka mahiai

O ko'u pa – hale aia ma **Kaunala**, ma ka A. alanui Aupuni ma ka Hi. a me ka He. a me ke Ko. he aina kula.

Na Nahuaka

kona

X hoailona

Testimony

Claim 2756. Nahuaka.

Wailua, sworn, says he knows the kalo land of Claimant in **Waialele**. It consists of 2 kalo patches. The first patch is bounded on Hauula side by Kaaina's land. Mauka by kula land, Waialua side by Kaio's land, Makai by Kahuku's land.

The second patch is bounded on Hauula side by Holi's land. Mauka and Waialua side by the kula land, Makai by a stone wall.

(Claimant says he has no land now in either Pahipahialua or Kaunala).

His house site is in Kaunala. It is enclosed with a stone wall. Claimant has held the kalo land for about 16 years.

The Konohiki consented to this claim.

Naloloa

Register

2766 Naloloa Waialele Oahu Dek. 31. 1847

E na Luna hoona kuleana aina e

Aloha oukou me ka mahaloia. O wau nei o Naloloa, ke hai aku nei au i ko'u kuleana aina ma **Waialele**, o **Kanikikala** ka inoa o ka Mooaina, eha loi ai, he mau auwai elua, a hookahi loi ma kahi e ae, eia na aoao o na loi eha, a me na auwai elua, ma ka A. he kai, ma ka Hi. na loi Aupuni, ma ka He. aina kula, ma ke Ko. o **Pahipahialua**, he mau mala uwala ekolu, he pali uwala, a ko. Aia ma Kaunala kekahi kuleana o'u ekolu kumu alani, o kahi i ku ai o **Palikeaiki**. Aia ma **Paumalu** ia wahi kuleana o'u, ekolu koa waa, he kula mahiai. O ko'u kuleana Pahale, aia ma **Waialele** eia na aoao, ma ka Akau, Alanui Aupuni, ma ka Hi. he wahi kula, ma ka He. ka mooaina o Kauaua, ma ke Ko. ko Keliikui pa.

O ko'u noho kuleana maluna o keia wahi mai ka noho konohiki ana o Haalilio maluna o **Waialele**, oia ka Makahiki 1832.

Na Naloloa kona x hoailona

Testimony

Helu 2766. Naloloa. Waialua Januari 16. 1850.

Kanealii Hoohikiia Ua ike au i kona mau aina ma **Waialele**, no ka mea, ua hanau au malaila. He mooaina o **Kanikikala** ua huipu me kahi kula na loi 4 o ua moo la. He Pahale kekahi ma ka ili o **Punoni** a me **Keokea**. Ua paa keia pa i ka papohaku.

Apana 1. 4 loi Mookalo

Apana 2. Pahale

- Apana 1. Mauka, Pali **Waihi**.
 Waianae, Moo o **Kaiki**.
 Makai, Pa Aina
 Koolaupoko, Moo **Kapunaiki**
- Apana 2. Mauka, Na Loi o **Punoni & Keokea**
 Waianae, Pahale o Mahoe.
 Makai, Alanui Aupuni
 Koolaupoko, kula o **Puunoni**

No kona Makuahonowai mai ka Pahale, a ua loa keia Pahale i kona Makuahonowai i ka wa o Kamehameha I.

Ua loa ka mookalo ia ia mai a T. Haalilio mai i ka wa o Kinau, Aole mea keakea i ka Pahale. Ua make o Naloloa M.H. 1849 Ianuari. Aole mea keakea i ka mooaina a hiki i ka M.H. 1847.

Namohala

Register

Waialee, Oahu Dek. 31. 1847
 E na Lunahoonakuleana e.

Aloha oukou me ka mahaloia. Owau nei o Namohala ke hai aku nei au i ko'u kuleana aina ma **Waialee**, o **Kaohe** ka inoa o kuu mooaina, elua loi, eia na aoao. A. ko Kauaua Hi. ko Kaumailiula mooaina. He. he aina kula. Ko. ko Kimo mooaina. He aina – kula – uwala, he kuahiwi.

Mai ka malama o Augate. makahiki o ka Haku 1847
 Na Namohala.

kona

X

hoailona

Testimony

Claim 2755. Namohala.

Kimo, sworn, says he knows the 2 kalo patches of Claimant in **Waialee**. They are bounded on Hauula side by Kaumailiula's land, Mauka by the kula land, Waialua side by Kimo's land, Makai by Waihinalo's land. Claimant has no kula land in cultivation. He has held the kalo land for 4 years.

The Konohiki consented to this claim.

Niheu

Register

2763 Niheu Pahipahialua Oahu Dek. 31. 1847

E na luna hoona kuleana e
Aloha oukou me ka mahaloia. Owau nei o Niheu ke hoike aku nei au i ko'u kuleana
aina, 2 loi ma Pahipahialua, a he mahele loi ma Waialee, no ke kau liili ma o
maanei, no laila, aole pono ke hoike aku i na aoao, he aina kula, he uka mahi.

O ko'u kuleana hale aia ma Pahipahialua, ma ka A. ko Kalalawaia, ma ka Hi.
a me ka He. a me ke Komohana, he kula.

Na Niheu kona x hoailona

Testimony

No. 2763. Niheu.

Kauku, sworn says, he knows the kalo land of Clt in Pahipahialua. It consists of 4
patches, bounded on Hauula side by Kauku's land, Mauka by the kula land.

Clt has also a piece of kula land enclosed with a stone fence, planted with
potatoes &c.

Claimant's House site is in this kula land. The kula land is bounded on all
sides by the land of the Konohiki.

He has held the land for 16 years.

Kanoma, Agent of the Konohiki, consented to this claim.

Nua

Register

2760 Nua Waialee Oahu Dek. 31. 1847

E na luna hoona kuleana aina

Aloha oukou. Owau o Nua ka mea kuleana aina ma Kauakahiloko, ehiku loi
ai, he kula kekahi, eia na aoao. A. o Kalou. Hi. o Kalou no. He. ko Waihinalo. Ko. ko
Mahoe.

2. Eia no keia he mahele loi aia ma Kalou, eia na aoao. A. ke kai, Hi. ko Niheu, He.
ko Kuheleloa. Ko. ko Kuheleloa.

3. Eia hou no keia he hapalua loi, aia ma Paipaialua eia na aoao, A. ko Kauaua. Hi.
ko Kaina He. ko Kauku, Ko. ke Koele

4. He kula kekahi o'u aia ma Paipaialua, he pili he laki, he wauke, o Waihi kona inoa.
O kuu hale kekahi aia ma Waialee, mai ka wa o Haalilio kou noho ana maluna o ka
aina.

Na Nua kona x hoailona

Testimony

2760 Nua

Kanealii Hoohikiia Ua ike au i kona mau Aina Elua mau Apana ma ke ahupua'a o
Waialee.

Apana 1.7 loi ma **Kauakahiloko**.

Apana 2. Aina kula

Apana 1. Mauka, **Kilowai** Mo'o. W. **Kuaimalalo** moo. Makai **Kalou**. K. **Kalou**.

Apana 2. Mauka, Kula o **Leimakani**. W. Kahawai o **Paipailua** [sic]. Makai Kula o **Leimakani**. K. kula o **Waihi**.

No kona mau makua mai no keia mau aina i ka wa o Kamehameha I, Aole mea keakea.

Kaikai Hoohikiia. Ua like pu ko'u ike me ko Kanealii.

Pahua

Register

Waialee, Oahu, Dek 31, 1847

E na Lunahoonakuleana e

Aloha oukou me ka mahaloia. Owau nei o Pahua, ke hai aku nei au i ko'u kuleana aina ma **Kamooiki**, hookahi loi, eia na aoao ma ka A. ko [crossed out: Poonui] Kawi pa ma ka hikina, ko [crossed out: Holi mahele] Poonui mooaina, ma ka He. ko [crossed out: Kaio] Holi mahele loi ma ke Ko. ko Kaio, he auwai e pili ana me ko Kalua, ma ke Ko. o ko Kawi, ma ka Hi. o ko Kalua, a he mahele loi e ae e pili ana me ko Holi. ma ke Ko. o ko Kaio ma ka A. o ko Kalua ma ke Ko. o ka loi koele, he kula uwala,

O ko'u kuleana pa hale. ma ke A. he kai, he alanui Aupuni ma ka hema, ko Kaumailiula ma, ma ke komohana.

Na Pahua

kona

X

hoailona

Testimony

Claim 2721 Pahua

Kalua, sworn, says he knows the kalo land of claimant in **Waialee**. It consists of 2 patches.

The first patch is bounded on Hauula side by Keliwaiwaiole's land, Mauka by Kalua's land, Waialua side by Kaio's land, Makai by the House site of Opae.

The other patch is bounded on Hauula side by Opae's land, Mauka by Hawaii's land, Waialua side by Kalua's land, Makai by Keliwaiwaiole's land.

Claimant has no House Lot of his own. He lives with a man called Holi. He has held the kalo patches for about 16 years.

The Konohiki consented to this claim.

Poonui

Register

Waialee, Oahu, Dek. 31. 1847

E na Lunahoonakuleana e.

Aloha oukou me ka mahaloia. O wau nei o Poonui ke hai aku nei au ia oukou i ko'u kuleana aina ma **Keokea**, elua loi, a he auwai eia na aoao, ma ka A. ka hale o Naloloa Hi. loi koele ma ka He. ko Kekua loi, ma ke Ko. ko Pahua.

Aia ma **Kaunala** kekahi kuleana o'u, he kula – mahiai ipu, uwala, a he uka – mahiai.

Aia no hoi ko'u pa hale ma **Kaunala**

Aia ma **Paumalu** kekahi kuleana o'u he mala uwala a ipu

Na Poonui

kona

X

hoailona

Testimony

Claim 2728. Poonui. (Deceased)

Kamauiiula [sic], sworn, says he knows the 3 kalo patches claimed by Poonui in **Waialee**. They are bounded on Hauula side by the Konohiki, Mauka by Kimo's land, Waialua side by Pahua's land, Makai by Naloloa's House Site.

Claimant's house site is in **Kaunala**, and is not enclosed. He held the land 15 years. Poonui died about 2 years ago, leaving a widow whose name is Kauaiwahine, who now claims the land.

The Konohiki Consented to this claim.

Pooluku

Register

Waialee, Oahu Jan 1. 1847

E na Lunahoonakuleana e.

Aloha oukou me ka mahaloia. O wau nei o Pooluku, ke hai aku nei au ia oukou [crossed out: me ka mahaloia] i ko'u kuleana Aina ma **Waialee** o **Kamooiki** ka inoa o ka mooaina. Ekolu loi a me ka hapalua loi eia na aoao A. he kai Hi. Kuheleloa aina He. he aina kula Ko. ko Keliikui

Aia ma **Kaunala** ia wahi o'u he mala – wauke, noni, alani, ko, maia

Aia ma **Pahipahialua** he uka mahiai

O ko'u pahale, aia ma Waialee eia na aoao. A. he kai Hi. ko [crossed out: illegible] Waihinalo – pa – He. ko Kahuku. Ko. he aina kula.

Mai a Kamehameha I mai ko'u noho kuleana ana.

Na Pooluku

kona X hoailona

Testimony

Claim 2720. Pooluku.

Kalua, sworn, says he knows the kalo land of Claimant in **Waialeale**. It consists of 3 patches bounded on Hauula side by Kuheleloa's land, Mauka by the kula land, Waialua side by Mahoe's land, Makai by the Konohiki.

(Claimant says he has no claim in either **Kaunala** or **Pahipahialua**.)

His house lot is in **Waialeale**. It is enclosed by a stone wall. Claimant has held the land for at least 30 years.

The Konohiki consented to this claim.

Puhiele

Register

Waialeale, Oahu, Jan. 4. 1848

E na Lunahoonakuleana e.

Aloha oukou me ka mahaloia. Owau nei o Puhiele, ke hai aku nei au i ko'u kuleana aina ma Waialeale o **Makaulu**, ka inoa o ka moo-aina, eha loi. A. ko Muli aina Hi. ko Keliwawaiwole. He. he kula, Ko. ka Mahalo. He aina – kula – mahiai

Aia ma **Pahipahialua** he mala mahiai wauke, uwala, ipu, laki, ko. Aia i – uka, wauke, kalo, maia, ko, he uhi. Elua koa waa

Aia ma **Kaunala**, hookahi koa – waa.

O ko'u kuleana hale, aia ma **Waialeale**, eia na aoao. A. ko **Kanealii**.

Hi. He. Ko. he kula.

Maia a Kamehameha I mai ko'u noho kuleana ana mai.

Na Puhiele

kona

+

hoailona

Testimony

Claim 2722 Puhiele

Mahoe, sworn, says he knows the 4 kalo patches claimed by Puhiele in **Waialeale**. They are bounded on Hauula side by Kuaehu's land, Mauka and Makai by the Konohiki, Waialua side by Kamahalo's land.

(Claimant says he has no kula land in cultivation, and no claim in either **Pahipahialua** or **Kaunala**.)

His House lot is near the kalo land, and is not enclosed. He has held the kalo land for many years.

The Konohiki consented to this claim.

Waihinalo

Register

Waialee Jan. 1. 1847

E na Lunahoonakuleana e.

Aloha oukou me ka mahaloia. O wau nei o Waihinalo ke hai aku nei au i ko'u kuleana aina ma **Waialee**, o **Kilawai**, hookahi loi, eia na aoao A. ko Laiehou. Hi. ko Kauaia He. ke kula Ko. ko Laiehou, a he mahele loi ma kahi e ae e pili ana me ko Kauaia, he aina kula makai.

Aia ma **Pahipahialua** he mala wauke, maia, ko, noni, uwala, ipu,

Aia ma **Kaunala** he uka noni, ko, maia, uwala, wauke

Aia ma **Paumalu** elua koa – waa

O ko'u pa hale, aia no ma **Waialee**, eia na aoao A. he kai Hi. ko Hawaii'i ma ka He. alanui Aupuni Ko. ko Kahuku pa

Na Waihinalo

kona

x

hoailona

Testimony

Claim 2695 Waihinalo

Kauaia 2nd, sworn, says he knows the kalo patch of Claimant in **Waialee**. It is bounded on Hauula and Waialua sides by the Konohiki, Mauka by a watercourse, Makai by claimant's house site.

His house site adjoins this patch and is not enclosed. (Claimant says he has no claim in any other land than Waialee.)

He has held the kalo patch and house site for 16 years.

The Konohiki consented to this claim.

Appendix B: Assessment of Loko Kalou, Waiale'e, Prepared By Graydon "Buddy" Keala



Google Earth - aerial views at various times.

Original Profile:

Loko Kalou is seen in the tree line and bush growth identify fishpond banks. The invasive grasses started at the banks and grew inward towards the center and open surface water. Roughly a third to a half of this ponds' potential area is overgrown with grasses and trees that if eradicated will open more pond area and improve water quality for better fishpond management. Reducing or eliminating trees or grasses that shade and create organic leaf litter will increase pond sunlight and reduce leaf debris which creates a huge oxygen demand in the decomposition process.

Fishpond Assessment:

This document provides a one-day snapshot of Loko Kalou on June 4th of 2019. This one-day assessment provides a technical eye towards restoration as its outcome, provides basic concern and provides conservative steps to move forward in planning the bigger effort of the restoration. This is not a full assessment, that would include more time and resources and would include biological, chemical and environmental information gathering. Below are focus points;

1) Plant intrusion-The pond has been neglected for several decades which has allowed major overgrowth of plants-trees, shrubs and grasses. This growth (eutrophication) is trying to evolve this pond into a wetland/marsh, causing detrimental aquaculture water quality as indicated by the WQ sampling data.

Also, trees overcrowding from the banks causes leaf litter problems but it also causes shading issues. Fishponds need sunlight for photosynthesis to happen and provided phytoplankton growth. Phytoplankton provide food for mullet and milkfish, and more crucial, it provides oxygen. O₂ is key to pond health and the main pond has adequate oxygen for fish.

2) Water Management-Freshwater input into the pond is primarily spring fed. I assume the pump house area may be its source. Saltwater exchange seems to be intermittent and mostly during winter/spring wave events. WQ sampling shows very little saltwater, around 0.04 ppt. salinity (FW=0 ppt. and SW=32.0 ppt). More saltwater exchange would offer a better range for culturable pond species.

Opening up tree canopy and cleaning larger fallen tree branches and debris from your waterways will provide better water exchange/movement and prevent decomposition and stagnation. The SP-5 & SP-6 show low dissolved oxygen, while SP-7, SP-8, SP-10 & SP-11 measure good oxygen. A D.O. less than -3.0 mg/L is detrimental to culture fish in.

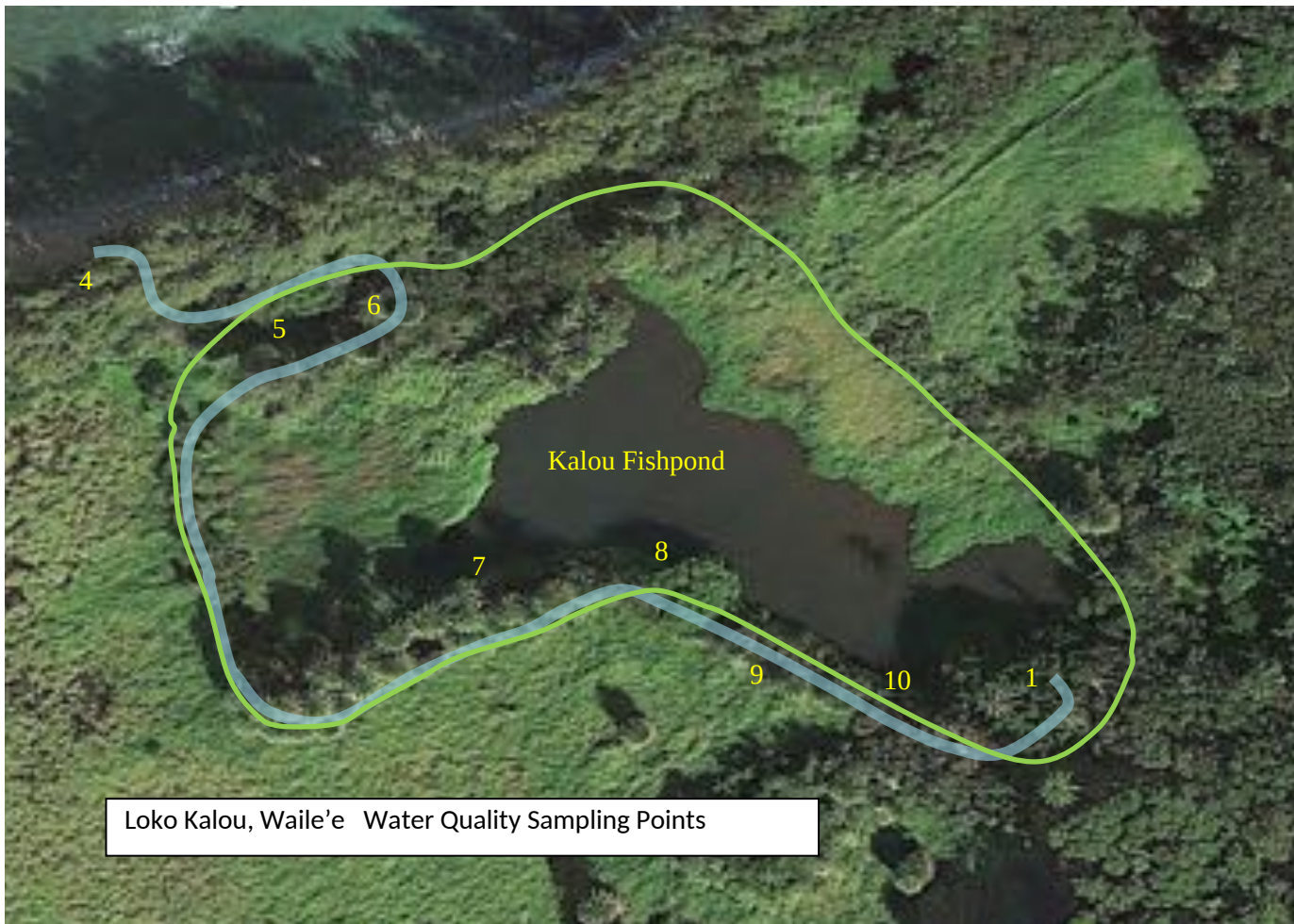
3) Water Quality - WQ Sampling results are quite typical for this type of fishpond that lacked years of maintenance and operations. The WQ shows a pretty healthy amount of water moves through this system and in the main pond phytoplankton may be evident. Poorer WQ is found in tight areas (SP-5 & SP-6) where water is shallow and with less water exchange. SP-3 and SP-9 are measurements done in Waihinalo pond and the small marsh opening outside Kalou.

4) Summary - Loko Kalou is a fishpond that can be restored to a working fishpond again. Based on its smaller size this effort should be fairly straightforward and could be completed in 5 years or less, depending on the volunteers. The salt water input should be revamped to allow as much salt water into the pond as possible during those intermittent times. Cutting back the tree canopy over the pond and cutting back invasive grasses is key to your work to expose the pond.

This last part concerns the fishpond in terms of regulations and permits to be allowed to engage in the pond work. Unfortunately, this fishpond falls under AGRICULTURE Land use zoning. This designation misses the Office of Conservation and Coastal Lands - Loko I'a Streamline permit process. This pond will have to go through the longer traditional Loko I'a permitting process-Federal, State and County. This may take longer than the restoration. Pae Pae O He'eia and Loko Ea went through permits the old way and it took years.

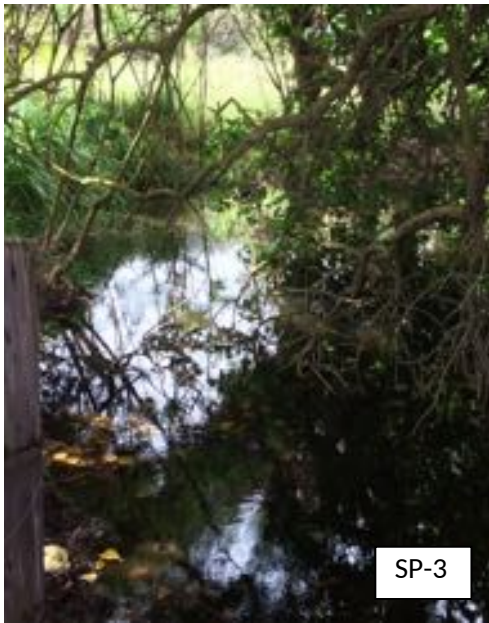
My recommendation would be to start with a Working Plan document. Seek landowners permission for access and to provide 'limited clearing' to understand the pond. Identify pond features, i.e.; 1) where banks are, 2) 50 years or older historic features (SHPD inventory), 3) removal of human rubbish-where does it go, 4) staging areas-parking, green waste stockpile, toilet, etc., 5) build people capacity through community work days. The idea is to push through as much work as possible under 'limited clearing for fact finding', before you have to seek official permits.

An organization, especially any non-profit, is very helpful to this endeavor. You can start applying for small or big funding. This also helps in the lease of the site and using an educational purpose is highly supported by agencies and funders.



Sampling points follow old bank (see outline of trees in green). Monitoring started at Wahinalo wetland (SP-3) then on to shoreline spring (SP-4). Monitoring path (in blue) are sampling sites from makai to mauka.

LOKO KALOA - SAMPLING POINTS AND WQ PARAMETERS



LOKO KALOU - WATER QUALITY SAMPLING June 4, 2019

Sample Point	D.O mg/L	D.O %	SAL. ppt	TEMP C °	COMMENTS/OBSERVATION
2	7.25	93.6	0.0	29.3	Instrument calibration only
3	1.03	12.0	0.4	24.8	Walk W to Wahinalo marsh/wetland
4	0.71	8.6	0.6	25.3	Spring near shoreline (percolating flow)
5	2.63	31.6	0.3	24.8	Connecting pond (along pu'uone)
6	1.61	19.2	0.3	24.8	Makai makaha (intermittent kai connect)
7	6.48	78.5	0.3	25.2	West side makaha at connecting pond
8	6.38	77.3	0.3	25.2	West side bank opening
9	0.51	6.0	0.4	23.9	Out of pond @ marsh west of Kalou
10	5.69	68.6	0.3	25.0	Near pump house opening in bank
11	8.75	107.9	0.0	26.2	At pump house inlet



SP-9



SP-10



SP-11