

“Sugary Mixed-Plate”: Landscape of Power and Separation on 20<sup>th</sup> century  
Hawaiian Sugar Plantations

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## APPROVAL PAGE


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## ABSTRACT PAGE

Archaeology in the Hawaiian Islands predominantly focuses on pre-contact and immediate post-contact contexts, while largely ignoring post-1870 phenomena. The scarcity of studies examining these settings points out the rich opportunities for investigating dynamics that influenced Hawaiian sugar plantation laborer perceptions of power, authority, and class relations on 20th century Hawaiian plantations. Part of the Hawaiian sugar planters' strategy to dominate the political governance of Hawai'i and the social dynamics of the plantations was the establishment of racial hierarchies. Planters reinforced such hierarchies by promoting divisions and segregation and by establishing places of power in the form of managers' and luna (overseers) residences. These physical structures served as materializations of planter control reinforcing planter hegemony. This paper analyzes spatial and documentary data from the Pacific Sugar Mill, the Honoka'a Sugar Company and the Onomea Sugar Company plantations on Hawai'i Island using a Marxist lens. Another theory that is employed to explore how planter hegemony materialized on the sugar plantation landscape of Hawai'i is Foucault's notion of the "panopticon." I expected to find structures of power in locations supporting the surveillance of laborer camps. However, my analysis suggests that Hawaiian sugar management strategies opposed this expectation. Viewshed analyses indicate that managers and luna had limited surveillance capabilities from their homes, thus contradicting the possibility that an overt direct visual surveillance was an active management strategy. These findings also suggest that laborer camps located closer to structures associated with plantation management were under more direct surveillance than more isolated camps based on their position within the racial hierarchy. Additionally, this investigation indicates that the surveilled areas enjoyed more access to facilities located in the core of the plantation such as stores, schools, and hospitals. Ultimately this analysis of three 20th century sugar plantations in Hawai'i highlights the materialization of planter hegemony on the landscape by underscoring the relation between spatial and social distance in the context of racial hierarchies.

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## Introduction

The “mixed-plate” or “plate lunch” serves as an analogy for contemporary Hawai‘i’s social and cultural landscape. These dishes are usually comprised of two scoops of rice, macaroni salad, and multiple entrees such as Hawaiian *kalua* pig, Japanese chicken *katsu*, Korean *kim chee*, Chinese fried rice, and many other possibilities and combinations. It is this analogy—the mixture of ethnic components—that quite accurately describes the Hawaiian archipelago’s multi-cultural and multi-ethnic society. The title of this paper alludes to the mechanism that brought these diverse cultures and ethnicities together in Hawai‘i: the sugar industry. Since Western contact in 1778, the Hawaiian archipelago has been impacted by various socio-political and economic dynamics coming partly from the outside. However, the Hawaiian sugar industry was largely responsible for facilitating the introduction of a concentrated population of varied origins.

Throughout the efflorescence of the Hawaiian sugar industry, early white sugar planters in Hawai‘i promoted racial hierarchies in an attempt to control the social, political, and economic order in Hawai‘i. This hegemony materialized in numerous ways, such as limiting the occupational mobility of certain people based on racist ideologies and differentiating pay grades depending on the worker’s position in the racial hierarchies (MacLennan 2014; Merry 2000; Takaki 1983).<sup>1</sup> Planter hegemony also materialized in more overt ways on the landscape. This phenomenon has been of growing interest to archaeologists such as James Delle (2014), whose work in Jamaica investigated the development of the coffee and sugar industries in the 18<sup>th</sup> and 19<sup>th</sup> centuries. However, this approach has not been applied to the Hawaiian Islands. The scarcity of historical archaeology focused on Hawaiian sugar plantation contexts offers

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<sup>1</sup> Racial hierarchies in Hawaii were not fixed and shifted over time in relation to planters’ political and social ideologies.

an opportunity to apply the theories and methods of other regions to the rich history of Hawai'i. This study analyzes Hawaiian sugar plantations in order to contribute to the understanding of the role Hawaiian sugar plantations played in structuring laborer life, and the forms of discrimination that materialized out of laborer camp distribution from a spatio-temporal perspective.

Specifically, I explore how racist planter ideology and hegemony materialized on the early 20<sup>th</sup> century Hawaiian sugar plantations of the Pacific Sugar Mill (PSM), the Honoka'a Sugar Company (HSC), and the Onomea Sugar Company (OSC) on the Island of Hawai'i (See Appendix B. Figure 1). The PSM, HSC, and OSC plantations were selected to provide a regional comparison between plantations of the Hamakua and northern Hilo districts of Hawai'i. Moreover, I chose these three plantations because of their spatial proximity to one another. The PSM abutted the HSC plantation, and later would become a branch of the HSC. In contrast, the OSC plantation is much further from either of these plantations and was owned by a different company. Aside from providing a regional focus, these three plantations were chosen to offer an opportunity to investigate differences in the materializations of social and racial discrimination dependent on different company policies.

I utilize historical evidence in the form of aerial photographs, maps and historical documents to analyze the spatial and temporal trends of planters shaping the social and physical landscapes on Hawaiian plantations. The temporal context of this study highlights three plantations between 1908 and the late 1940s and analyzes the spatial distribution of their laborer camps in relation to places of power, such as managers' and *luna* (overseer) houses, and communal facilities such as schools, hospitals, and stores. Through these analyses, I seek to answer three questions: 1) How did planters materialize social separation on Hawaiian sugar plantation landscapes, 2) were laborer camps subject to strategies of surveillance, and 3) is there spatial evidence of shared

ideologies concerning patterns of ethnic segregation on plantations by plantation management?



**Figure 1.** Map of general locations of the PSM, HSC, and OSC plantations on the island of Hawai'i

I begin with a brief review of the archaeological, ethnographic, historical, and sociological research of Hawaiian sugar plantations and how my current study contributes to the understanding of the socio-political and economic dynamics that manifested in these contexts spatially and temporally. I then discuss the environmental setting of the Hawaiian archipelago and the history of the Hawaiian sugar industry to place the study in a local context. More broadly, I provide an understanding of the historical developments that led to the rise of the Hawaiian sugar industry in the 19<sup>th</sup>

century, as well as the economic contexts in which immigrant groups were recruited and the landscapes planters attempted to shape for their own gain. Following these reviews, I discuss methodology as well as the results of the spatial and temporal analyses and synthesize them into a cohesive interpretation of how early to mid-20<sup>th</sup> century planters in Hawai'i transformed the landscapes for their own gain and socio-political control of the laborer population. I conclude with a discussion of the results in the context of future archaeological work in the Hawaiian Islands focused on sugar plantations.

## **Theoretical Perspective**

My investigation of Hawaiian sugar plantations is grounded in a theoretical framework that examines power and its various manifestations on the landscape. To effectively examine these contexts, I utilize a Marxist perspective to analyze the spatio-temporal relationships between plantation laborer camps, managers' and *luna* homes, and plantation facilities. As I will argue, socio-political and economic hierarchies based on perceptions of race materialized on the Hawaiian landscape throughout the sugar industry's history. By investigating these expressions of power and control established by the sugar planters in the early to mid-20<sup>th</sup> century, I seek to understand how plantation landscapes organized by planters structured socio-political relations between plantation managers, *luna* and laborers.

With the goal of producing sugar lucratively, white sugar planters emphasized socio-political and economic hierarchies based on race. Before moving to this discussion, it is necessary to define race in this context. For the purposes of this study, I define race as groups of human beings that are artificially organized by the perception of shared traits. While ethnic groups supposedly share a common culture and history, planters did not organize immigrant groups with this in mind; they instead divided workers based on perceptions of race, nationality, and qualified them by perceived racial attributes such as intelligence and tractability. Planters viewed many of the different groups as "childlike" and felt that it was their duty as planters to assume a "parental" role (Takaki 1983:66). Additionally, the segregation of immigrant workers based on perceptions of race supported planters' strategies concerning the control of labor populations through divide-and-conquer policies and spatial plantation organization. It is not that planters did not have an understanding of a common culture and history; rather

they used that understanding to emphasize their essentializing categorizations of the immigrant workers based on nationality and race.

Within the Hawaiian sugar plantation system, social, political, and economic classes were racialized to produce a hierarchy that dominated the archipelago politically and economically. Under this scheme, 19<sup>th</sup> and early 20<sup>th</sup> century planters and elites (both whites and upper-class Hawaiians) comprised the upper echelons of the racial hierarchy while non-white peoples (Chinese, Japanese, Koreans, Filipinos, and Puerto Ricans) were subjugated as lower class groups. Within this system, similar to sugar laborers in the Caribbean, social organization was “dependent on the objectification of human beings as, essentially, part of the means of production...” (Delle 2014:122).

Although Hawaiian sugar laborers were not considered chattel, they were objectified as “interchangeable cogs” in a production mechanism (Kent 1993:40). Through this objectification and emphasis of differential social, political, and economic classes based on race, planters in Hawai‘i were able to justify the placement of social, political, and economic limits on peoples with perceived racial characteristics. For example, white workers of European/Euro-American descent were paid more, and had more career mobility within the Hawaiian plantation system than non-white workers (Takaki 1983:76). Racial hierarchies were materialized on the landscape as racially segregated laborer camps, and as I will argue, this trend persisted for several decades in the 20<sup>th</sup> century and affected the laborers’ access to facilities such as stores, schools, and hospitals. The physical and social distance of the more isolated laborer camps to these services and institutions impacted their access to vital healthcare needs and supplies. This under-investigated and racialized plantation organization offers an opportunity for future research to examine alternative methods and means of survival of laborers at the isolated camps.



A synthesis of Marxist theory and landscape archaeology provides a robust paradigm for investigating and interpreting how power, authority, and control manifests on Hawaiian plantation landscapes. At the heart of such an analysis is the notion that material conditions shape the nature of social interactions within a society (Delle 2014:16; Marx 1992). In the context of the Hawaiian plantation system, the material conditions of the plantations and the materialization of power, authority, and control on the landscape not only shaped the laborers' lives, but also supported and emphasized the racial and class hierarchies established by the planters. To this end, places specifically related to positions of power, such as the managers' and *luna* houses, were sources of social, political, and economic power, in contrast to structures such as laborer camps that were not associated with people and places around which authority was negotiated. However, as will be discussed later, power is not an attribute to be attained; it is an active negotiation between all participants in social relations, thus to indicate that laborers were without some form of power would be inaccurate. For instance, in more isolated laborer camps on Hawaiian sugar plantation landscapes, the laborers may have negotiated forms of social power within their communities separate from the perceptions of power that were derived from structured plantation authority.

This paper highlights the significance of the labor theory of value which posits that "anything produced by a society will have a value equal to the cost of the materials required for its production plus the *value of the labor* expended to produce it" [Emphasis added] (Delle 2014: 17). According to such a theoretical construction, should the product sell for a higher value than the combined value of the materials and labor expended to produce it, then the seller of this commodity accrues surplus-value. To consistently amass surplus-value in the form of capital, planters in Hawai'i emphasized racial hierarchies by instituting a pay-grade system based on perceived race. As such, those perceived as white, such as Spanish and Portuguese peoples, were paid more

than those perceived as non-white. As amassing surplus-value was the goal of planters in Hawai'i, this begs the question, "why did they resort to a racialized wage system if it meant paying white workers more than non-white laborers, and in some cases for the same type of labor?" The answer lies in the overall labor pool composition. There were far more non-white laborers than white laborers, thus by institutionalizing a racialized wage system planters could generate surplus value by paying the majority of their laborers far less than the minority. In Marxist terms, this can be understood as a strategic valuation of labor-power based on racist ideologies. Planters valued the labor-power of white races more than non-white races in order to accrue more capital. By establishing different pay-grades based on race, planters in these contexts effectively used the "valorization" process to establish a difference in labor-power values (Marx 1992:246). It is through this process that surplus value is increased through the combination of the exchange-values of raw materials and the use-value of objectified labor power spent on transforming those materials into a commodity.

By manipulating the value of a specific group's labor power, early to mid- 20<sup>th</sup> century white sugar planters in Hawai'i were able to likewise manipulate the cost of the objectified labor power. When ethnicities, or race in this context, are ranked a "*stigma*" is often attached to subordinate groups, typically by way of a set of stereotypes deeming their culture and practices inferior" (Eriksen 2005:354). White planters in Hawai'i promoted such rankings based on perceptions of race and nationality, and were thus able to pit one group against another through wage differentiations based on racial categorization. This planter-endorsed system not only allowed them to pay laborers differently for the same jobs in some cases, but also succeeded in driving a wedge between different non-white laborer groups which supported their divide-and-conquer strategies to control laborers.

This resulted in the accrual of more surplus-value from selling the commodity at a higher value than what was spent on producing it. Utilizing a diachronic perspective, this paper analyzes the ways in which this racial hierarchy, which was undergirded by differential wages, was materialized on the landscape as expressions of planter power, authority, and control. By analyzing the locations of laborer camps in relation to places of power and authority, such as the managers' and *luna* houses, planters' and managers' negotiations of and conflict over laborer values of different plantations are investigated.

Often, landscape archaeology techniques compliment Marxist theory. For instance, Delle's (2014) work on Caribbean coffee plantations highlights this link by illustrating that labor relations on these plantations materialized in various ways spatially on the landscape. In analyzing labor relations and the landscape together, it is possible to underscore the materialization of not only spatial phenomena related to labor, but also other types of social phenomena such as spatial and social systems of control. An example of this is the materializations of class separation on plantation landscapes such as segregated economic and racial communities. By treating maps as visual representations of physical plantation landscapes, this study employs viewshed analyses to examine how planter hegemony was materialized on Hawaiian sugar plantations from 1908 to the 1950s. This technique examines shifts in land management practices by planters and plantation managers to highlight diachronic changes in plantation landscapes and their relation to social, economic, and political control. By applying viewshed analyses to plantation maps and aerial photography, this paper explores how planters, managers, and *luna* attempted to enforce socio-political and economic control over laborers through the manipulation of plantation landscapes.

Also pertinent to the analysis of the relationship between authority, power and landscape on Hawaiian sugar plantations are Foucault's theories on surveillance and its

social effects on human populations. Foucault (1995) noted that through the visibility of structures or a persons' authority and power, people become conscious of the presence of power and authority. In other words, the presence of power and authority becomes inscribed to such an extent that they become an internalized and lived experience. People who are the subject of a panopticon—or are living under the gaze of the state—in this context become aware that someone may be watching their actions, and end up policing themselves regardless of the presence or absence of the physical structures associated with a panopticon and authority (Foucault 1995: 214). This phenomenon has significant potential in that, if laborers are being watched or acting under the belief that they are being watched, “there are no disorders, no theft, no coalitions, none of those distractions that slow down the rate of work” (Foucault 1995:213). While no single system or apparatus is capable of complete surveillance, the absence or presence of authority and power has the capability of influencing human behavior. As I will argue, in the context of Hawaiian sugar plantations, planters achieved this level of surveillance through daily *luna* supervision of work groups and mill operations as well as the visibility of the managers' and *luna* houses from particular laborer camps. Viewshed analyses of these places of power will highlight areas of visibility from the managers' and *luna* houses in relation to plantation laborer camps to discern whether or not the PSM, the HSC, and the OSC organized these structures to enforce plantation authority via panopticism.

The perception of power on Hawaiian sugar plantations stems from perceptions of authority. As Foucault notes, however, power is not an attribute that is appropriated as a result of social relations, instead it is the deciphering and employment of “manoeuvres, tactics, techniques, [and] functionings” that are in constant tension throughout social activity (Foucault 1995:35). Power therefore stems from social negotiations between individuals. Authority however provides an advantage in this

social negotiation as it is a public acknowledgment of an entity's right to give orders, enforce obedience, and punish disobedience. The negotiation of power through the perception of authority is a crucial concept in the understanding of the social relations on Hawaiian sugar plantations as racial ideologies and hierarchies were emphasized by white elites with authority (and by extension the perception of power) to control largely non-white populations.

### **Hawaiian Sugar Plantation Occupational Structure and Social Dynamics**

Hawaiian sugar plantation labor was structured like a pyramid. At the top of this hierarchy were the managers and sugar boilers, followed by the head *luna* and *luna*, as well as the skilled workers; at the bottom were the unskilled workers, the majority of which were non-white immigrants (MacLennan 2014: 134; Takaki 1983: 92). According to secondary source literature (MacLennan 2014; Takaki 1983), the spatial organization of the sugar plantations were a reflection of two dynamics: racist planter ideologies, and the temporal sequence of laborer immigration.

In order to discuss the undercurrents that influenced the spatial organization of plantations as a result of planter ideologies and the temporal order of immigration waves to Hawai'i, it is important to briefly review the relationship between plantation cane fields and mills. Sugar plantations in Hawai'i, similar to their Caribbean counterparts, were a "synthesis of field and factory" (Mintz 1985:47). While sugar cane cultivation may be viewed as an agricultural practice, the production of processed sugar is a practice of industry. In other words, sugar production in Hawai'i was more of an industry than horticulture. Both field and mill labor were required to not only produce sugar, but to produce the commodity as efficiently as possible to turn a profit. When ripe sugar cane is cut, it needs to be ground within several hours or else the cane juices are wasted and less sugar, if any, is produced from the cut stalk. As such, the laborers in the fields needed to work in unison with mill laborers in order to produce sugar efficiently. Field workers specialized in different tasks than mill technicians, but both types of labor stressed discipline and punctuality, as both are "features associated more with industry than agriculture" (Mintz 1985: 47). In the words of Sydney Mintz: "factory and field are wedded in sugar making, brute field labor and skilled artisanal knowledge are both necessary" (Mintz 1985:47). To regulate this industrialized process, planters in Hawai'i

emphasized racial and economic class hierarchies in order to control the laborer population and maintain plantation order and discipline.

The racial hierarchies on these plantations privileged belonging to the white class, while penalizing non-white classes through the differential wage structure and racist plantation policies. In the Hawaiian context, the ideal organization of a plantation followed a panoptic pattern with the manager's house on the highest point, and the non-white group that was ranked lowest in the racial hierarchies on the perimeter. Takaki for instance, highlights this supposed correlation:

...the organization of the housing hierarchy was 'planned and built around its sewage system. The concrete ditches that serviced the toilets and outhouses ran from the manager's house on the highest slope down to the Filipino Camp on the lowest perimeter of the plantation. The tiered housing pattern and sewage system seemed emblematic: 'Shit too was organized according to the plantation pyramid' [Takaki 1983:92].

Ideally, plantation spatial organization and plantation policies, as materializations of planter and plantation management racial and social ideologies, were emphasized to remind laborers of their place in the social and economic order in the archipelago.

The spatial organization of Hawaiian sugar plantations were partly the result of the temporal sequence of laborer immigration. As immigrant laborers migrated to Hawai'i, planters and plantation management constructed new camps to house them (Takaki 1983: 93). This materialized on the landscape in such a way that newer immigrant groups were progressively housed further and further away from the manager's house and the mill. Additionally, whether intentional or not by planters and plantation management, this phenomena also underscores the social hierarchy in that the newest immigrants, such as the Filipinos in the early 20<sup>th</sup> century, were often the most discriminated against (Haas 1984).

The types of structures associated with people of authority and power, such as the plantation managers and *luna* can be understood as materializations and extensions

of their power. On the landscape, these structures were physical reminders of their position in the social and racial hierarchies. A typical plantation manager's house in Hawai'i was a large, mansion-like structure, ideally situated on an elevated hill overlooking the plantation. While not as large as a manager's house, the head *luna* and skilled worker houses were larger and made of higher quality resources than non-white unskilled laborer houses (MacLennan 2014; Takaki 1983). The clear differentiation between the structures associated with the upper and lower classes on these plantations served as a materialization of the discrepancy between white and non-white social and economic relations. Moreover, the managers' and head *luna* houses emphasized the differences in power by reminding laborers that they were socially, and possibly qualitatively different. Additionally the inability of non-white laborers to acquire the resources necessary to construct such abodes, due to the structural discrimination in wage policies, was another reminder of the differences between those who wielded power, and those whom were subject to it. The mill on the other hand, was another structure of power. It was the largest structure on every plantation and was a physical reminder of why the laborers migrated to Hawai'i: the production of sugar. These large, looming structures were run by the sugar boilers, engineers, and technicians of the plantation; essentially the majority of the skilled workers. As such, it was associated with the plantation's livelihood (the production of sugar), but also a structure of power as it held a strong association with skilled workers higher on the social and racial hierarchy.

Sugar plantation managers in Hawai'i oversaw the general operation of the plantation, with duties such as making sure the plantation as a whole was productive and managing laborer relations. The management of labor relations by plantation managers ideally followed a paternalistic model in that they governed a plantation with a strict hand, but many also sought to facilitate a master-servant type of relationship with their laborers. An example of this is an interview with Yonematsu Sakuma, a Japanese



immigrant, who discusses his relationship with his manager at the Waiakea Plantation on Hawai'i Island: "My entire family is grateful to my *master* for his generosity. He put my oldest son through college and...is also paying for the education of all my other children" [Emphasis added] (Takaki 1983:64). As these positions also reflected the racial and social hierarchy, they were mostly filled by white, Euro-Americans.

Head *luna*, *luna*, and assistant *luna* were essentially foremen; they supervised various work gangs and enforced planter and plantation management ideologies on the plantations. The Head *luna* oversaw the operations of all the other *luna* whom managed different work groups in different areas of the plantation, from the field to the mill. These positions, like that of the position of manager, reflected the social and racial hierarchy, however they were not all white. Some were Hawaiian and Japanese, but many were Portuguese (MacLennan 2014; Takaki 1983).

Plantation stores and offices provided vital resources to everyone who worked on Hawaiian sugar plantations. Plantation offices were structures associated with plantation management and were where laborers were paid. Plantation laborers would line up outside of these offices (usually twice a month, on Saturdays) to receive their pay. In order to be paid their wages however, laborers needed to show their *bango* tags (brass or aluminum disks with stamped identification numbers). These identification tags were used instead of names because plantation accountants found them to be more efficient than writing foreign names that they were not accustomed to (Takaki 1983:82). These *bango* tags were also used as a form of credit at plantation stores. To make a purchase, if a laborer did not have enough money, they could purchase goods using their *bango* tag numbers; then on pay day, the difference was subtracted from their wages.

For many immigrants, the plantation store was the only place they could rely on to get supplies. Initially, non-white camps were not equipped with private gardens, so

growing their own produce would have been difficult, especially given how structured their daily lives were. The wage system and plantation stores worked together to extract as much labor as possible from the plantation laborers: what money laborers made from the plantation was spent on goods procured by the plantation. However, after fulfilling their contracts, Japanese and Chinese immigrant laborers started their own businesses and stores, thus offering more variety and competition with plantation stores. In essence, these stores disrupted the level of overt economic control of plantation laborers by providing them with more options of what laborers spent their money on and to whom that money was going.

## **Previous Research**

This paper builds on previous research (Kraus-Friedberg 2008; MacLennan 2014; Six 2010) investigating social phenomena associated with Hawaiian sugar plantations. While the corpus of archaeological work specifically on Hawaiian sugar plantations is modest, a review of studies focused on the Hawaiian sugar industry is essential to better contextualize the present study. To broaden this understanding, a review of sociological studies (Geschwender *et al.* 1988; Haas 1984; Jung 1999, 2003) focusing on racial and social ideologies in the contexts of the Hawaiian sugar industry underscores the social factors that had an impact on the lives of sugar laborers in the archipelago. On the other hand, historical studies (Takaki 1983, 1994) discussing the experiences of plantation laborer life highlight how racial hierarchies structured inter-group relations and provide insights into how laborers navigated social, political, and economic situations that emerged out of these discourses.

Historical archaeological studies of the Hawaiian sugar industry largely focus on the material evidence of plantation laborer identity (Kraus-Friedberg 2008), the impacts of archaeological investigations on contemporary communities (Six 2010), and preservation issues pertaining to former plantation camps (Way 2010). These studies highlight the experiences of plantation laborers as well as the influences the plantation system and policies had on them, but do not provide a general overview of how sugar plantations were organized. For instance, Chana Kraus-Friedberg's (2008) Ph.D. dissertation questioned whether or not the global status of Japanese, Chinese and Filipino immigrant workers' home countries affected their expressions of transnationalism. She focused on three specific ethnic group cemeteries—Japanese, Chinese, and Filipino cemeteries—on the Pahala sugar plantation in Pahala, Hawai'i. Her comparative examination utilized multiple lines of evidence ranging from

transnational indicators on gravestones such as epitaphs, and historic documents retrieved from the Hawaiian Sugar Planters' Association archives. She also mapped each cemetery to provide a temporal-spatial context for analyzing the location and features of gravestones within each cemetery. In analyzing epitaphs, Kraus-Friedberg coded numerous attributes, including death date, language and epitaph format, and gender. The data illustrates how transnational identity changes due to historical contexts such as political situations in the home countries and host country. As such, negotiation of social, economic, and political identity by laborers was multifaceted and most likely shaped how they were perceived (or wanted to be perceived) on Hawaiian sugar plantations by other groups, individuals within their own group, and planters and managers who controlled various aspects of their lives. To this day, these social and political negotiations continue to materialize in expressions of ethnicity via events such as celebrations like Japanese *Bon* festivals (traditional summer festival that honors Japanese ancestors) or the Portuguese "Holy Ghost feast" (a Catholic celebration that reaffirms the faith of the Portuguese and their devotion to the Holy Ghost), or participating in language and culture schools that emphasize the value of a specific culture's practices and traditions.

Archaeological studies highlight the impacts and legal implications that investigations can have on Hawaiian descendant communities. An example is Janet Six's (2010) work that concentrates on the legal battle between native Hawaiian families and the Olson trust in Hilea, Hawai'i. Like Kraus-Friedberg, her study did not focus on the organization of plantations. Rather, she discusses the tensions of her experiences, and uses these to emphasize how the study of social and physical landscapes in the past have attempted to structure perceptions of landscapes and ethnographic history in ways that influence contemporary communities (Six 2010:35). Of note, archaeological research in areas in the archipelago with active descendant communities has wide

ranging socio-political and economic effects. In other words, archaeological investigations often affect people who are connected to the places being investigated; archaeological analyses do not occur in a vacuum (Fowles 2010; Gallivan *et al.* 2011; Green *et al.* 2003).

Jessica Way's (2010) study continues the trend of historical archaeology pertaining to the Hawaiian sugar industry by focusing on how the construction and preservation of laborer houses were structured by various socio-economic and political forces rather than on the organization of plantation camps on the landscape. While plantation organization was a facet of her research, Way argued that shifts in sanitation policies and economic practices during the period of the sugar industry and government preservation policies after the industry's decline were responsible for the current development of former plantation camp landscapes on the island of O'ahu.

Way effectively highlighted the complex interplay between laborer needs, plantation economic goals, and the broader policies of the U.S. that were extended to the archipelago in the 20<sup>th</sup> century. Arguing that the development of former plantation camp landscapes into contemporary subdivisions and private businesses was due to shifts in economic and health-oriented policies and preservation ideologies, Way's work follows the general trend of historical archaeological studies focused on Hawaiian plantations. More specifically, her work highlighted the common interest of plantation studies in the archipelago: the experiences of plantation laborers in relation to broader social, political, and economic dynamics.

Historical studies focusing on the Hawaiian sugar industry, unlike the historical archaeological treatments, tend to focus more broadly on the archipelago rather than on site specific phenomena. Carol MacLennan's (2014) work, *Sovereign Sugar: Industry and Environment in Hawai'i*, examined the socio-economic, political, and ecological contexts of the sugar industry's expansion in the archipelago as a whole. She analyzed

100 years of commercial plantation life and provided the historical contexts of political developments in other countries which led to the Hawaiian sugar industry's dominance in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries. MacLennan stressed two main dynamics as responsible for shifts in Hawaiian ecology and development of socio-economic dominance of the sugar industry. The first was the ability of the sugar capitalists to organize assets and secure power in contests with the Hawaiian government which led them to be more dominant in Hawaiian politics. The other dynamic she highlighted was the schemes sugar capitalists employed to manage the industry's complicated environmental demands in combination with centralized political strategies, agricultural strategies, and technological innovations. Combined, these strategies empowered the planter class and propelled their authority to unchallengeable heights.

Importantly, MacLennan examined management strategies such as segregating laborers by ethnicity to enforce racist hierarchies and to prevent the formation of worker unions. This often led to plantation-authorized violence by the overseers and strikebreakers against laborers and race-specific laborer camps. While plantation camp organization shifted to meet laborers' needs with the construction of schools, parks, and other facilities, early 20<sup>th</sup> century planters complicated the wage system by transitioning to a wage grade organization that masked racial prejudice after Hawai'i became a U.S. territory. Rather than focusing explicitly on the experiences of laborers, MacLennan provided a broad overview of the development of the sugar industry in Hawai'i. The anthropological perspectives of Kraus-Friedberg's, MacLennan's, Six's, and Way's studies provides a greater understanding of the complexities of laborer life on plantations, the structure of the plantation system in Hawai'i, and how examinations can have an impact on contemporary populations. My research seeks to emphasize these broad developments by exploring how they were materialized locally on the landscape of three specific sugar plantations.

Sociological studies concerning Hawaiian sugar plantation dynamics have largely investigated the connection between race and class (Geschwender *et al.* 1988; Haas 1984; Jung 1999, 2009). Geschwender *et al.* (1988) explored why the Portuguese, who were organized into the white category in the Hawaiian sugar plantation racial hierarchy, were not in fact considered white, but rather as a part of the local group comprised of non-white peoples. Jung's (1999) work complicated this discussion by investigating the possible reasons as to why the Portuguese, who straddled the white and non-white classifications, distanced themselves from the other laborer groups and pursued actions and behaviors that made them appear to be more *haole* (White class/White foreigner class).

Jung emphasized the complex relationship between race and class via the phenomena of interracialism. More specifically, Jung's (2009) work explored and conceptualized interracialism as an "affirmative" or "positive" phenomena by arguing that it is "a transformation of racial meanings and practices rather than their necessary negation" (Jung 2009: 374). These sociological studies of the Hawaiian sugar industry underscore the interconnectivity of class and racial categorization. This interconnectivity is crucial as it emphasizes the importance of social and economic influences on the perceptions of race that materialized on the Hawaiian sugar plantation landscape.

Beechert's (1993) work emphasized the theme of interactions between race and class by examining social relations and patterns of resistance in the context of the Hawaiian sugar industry. More specifically, he highlighted how plantation economies both generated and was dependent on ideas about race and how these ideologies "entered the political structure to create superior and inferior racial classifications" (Beechert 1993: 45). Beechert effectively underscored the complex navigation of these ideologies by both planter and anti-immigrant groups, which resulted in waves of

immigration followed by the adoption of racist policies designed to restrict immigration of specific peoples such as the Chinese Exclusion Act. Specifically, Beechert explored why planters and the Monarch of Hawai'i imported specific races that met their racist ideological criteria, all the while strategizing about how to better control the sugar labor force. My research investigates if and how these methods of control may have been materialized on the landscape in the form of labor camp organization and distribution on the plantation landscape.

Munro's (1993) work analyzed forms of labor resistance and accommodation in the plantation contexts throughout the Pacific. His analysis indicated that landscapes were structured to emphasize colonial/plantation hegemony over diverse groups of laborers. He explicitly emphasized the symbolism behind structures and the organization of camps on plantation landscapes:

... a plantation is structured around the exercise of power in quite explicit ways; and this is symbolized by the planter's house usually being set on elevated ground overlooking the laborers' quarters on the plain below; by the planter's house being off limits to workers, so that social distance was maintained...  
[Munro 1993: 11].

This statement demonstrates how racist ideologies supported the hierarchy; the upper echelons of the hierarchy should not fraternize with those toward the bottom. My research will test this hypothesis by utilizing viewshed analyses, investigations into camp distribution on the landscape, and calculated distances between camps, facilities, and places of power such as managers' houses.

Historical studies focusing on the Hawaiian sugar industry, in a similar vein as the aforementioned historical archaeological works, have investigated the effects the industry had on laborers and highlight the interconnectivity between broader social forces—such as racial hierarchies and planter hegemonies—and the sugar laborer life.



Takaki's (1983 and 1994) works explore the experiences of immigrant laborers in the Hawaiian sugar industry in relation to racial hierarchies and social forces that arose out of it, such as the treatment of laborers by *luna*, medicalization and absentee policies, as well as the limitations of occupational mobility of non-white laborers.

Ethnographic works, such as Ogawa and Grant's (1978) book likewise focus on sugar plantation laborers by examining Japanese immigrant and laborer life in the archipelago. Their analyses focuses on initial immigrant experiences, labor movements, and internment camps, in addition to intergenerational relations and comparisons, the rise of the Japanese in Hawaiian politics, and race relations between locals and *haoles*. These studies are influential to my own work because they highlight how social relations between ethnic groups and economic classes in the contexts of racial hierarchies structured laborer life in the archipelago.

By comparing the spatial layout of plantation worker camps in relation to manager and *luna* abodes with a focus on temporal variation between the PSM, HSC, and OSC plantations, I will analyze temporal-spatial characteristics associated with the enforcement of planter hegemony and a growing laborer population. My work contributes to the understanding of plantation life by investigating how the interconnectivity of race and class materialized on plantation landscapes. I offer something that has not been conducted before in the context of the Hawaiian sugar industry: analysis of material data in a temporal-spatial framework to determine how Hawaiian sugar planters imposed their racist ideologies on laborers, and how planter control, power and authority were materialized on Hawaiian sugar plantation landscapes as a means of controlling laborers.

## **19<sup>th</sup> and 20<sup>th</sup> century Hawaiian Political and Economic History**

In order to understand the development of the Hawaiian sugar industry in the context of immigrant labor, shifting power dynamics, and the emergence of a multi-cultural and inter-ethnic society, it is necessary to review the broader political and economic history of Hawai'i over the course of the 19<sup>th</sup> and 20<sup>th</sup> centuries. During the 19<sup>th</sup> century, Hawaiian indigenous political organization shifted from an “archaic state” society to a constitutional government (Kirch 2010; Kuykendall and Day 1961; MacLennan 2014) while economic structures transformed from a tribute-oriented organization to one emphasizing capitalistic practices. Religious ideologies also changed with the abolition of the traditional Hawaiian *kapu* (taboo) system and the adoption of Western, Protestant beliefs. Population demographics and inter-ethnic/multi-ethnic interactions increased with the rise of capitalism due to the Hawaiian sugar industry's reliance on immigration.

In the early 19<sup>th</sup> century, Hawaiian political organization shifted from multiple hierarchical polities on four islands—Kauai, Oahu, Maui, and Hawai'i—into a unified kingdom in 1819 with the establishment of the Kamehameha monarchy (Kuykendall and Day 1961; MacLennan 2014). Throughout the 19<sup>th</sup> century, this monarchy transformed its economic and political organization through the adoption of a constitutional government and the creation of various constitutions that influenced the archipelago socially, economically, and politically; for instance, the transformation of a monarchical government with power centered on the regent to a constitutional government with power centered on the legislative cabinet governing relationships. Initially, voting rights were restricted to the Hawaiian elite, but later constitutions changed this by emphasizing a democratic voting process that was open to people with large tracts of land and money, be they Hawaiian or American citizens. Political power was dispersed between

the king and a representative body, specifically the legislative cabinet members. These members in the latter half of the 19<sup>th</sup> century were drawn from the white planter class and white businessmen who were sympathetic to planter economic goals. For the first time in Hawaiian history, this allowed for people other than the *ali'i* elite to have a say in political affairs and a semblance of political power (Kuykendall and Day 1961: 54). The constitutional government in turn established various laws that greatly impacted the Hawaiian archipelago in diverse ways, such as changing land management practices from the traditional system (*ali'i* controlled) to a Western system, shifting to private land ownership by establishing the “Great *Mahele*” (land division act) and regulating mass immigration. They also drastically limited the power of the King and increased the political influence of the legislative cabinet members. The political transformation over the course of the 19<sup>th</sup> century allowed foreigners and missionary descendants to purchase land, vote, participate in government, and ultimately, shift laws in order to exploit the archipelago’s political system to gain control over land, natural resources, and the Hawaiian economy.

By altering the Hawaiian political system to solidify their control of the archipelago, white planters were in a position that facilitated the overthrow of the Hawaiian kingdom. They controlled the archipelago politically by manipulating legislation as cabinet members. The white planters also dominated the islands socially by institutionalizing racist ideologies in such a way that gave them a social and economic advantage. Additionally, they controlled Hawai'i economically as the island nation was heavily dependent on the sugar industry to keep the government afloat. An example of this dependency is the decline of sugar prices in the 1890s and U.S. tariffs that further detracted from Hawaiian sugar planters' profits. The combination of these dynamics in the 1890s motivated planters to carry out a coup of the Hawaiian Kingdom in hopes of annexation by the American government. The majority of planters perceived this to be

the best course of action as it would garner them the right market conditions for a profitable sugar trade once again. After the overthrow of the Hawaiian kingdom in 1893 and annexation by the U.S. in 1898, the archipelago underwent further social, political and economic change. As a territory of the U.S., American laws and policies were extended to the Hawaiian Islands. U.S. immigration policies and acts, such as the “Gentleman’s Agreement,” and the “Chinese Exclusion Act” impacted the Hawaiian sugar industry labor pool by limiting immigration from various places to Hawai’i (MacLennan 2014:190-191; Merry 2000:134).

In a similar manner, the Territory of Hawai’i in 1908 adopted a resolution that essentially made discrimination a formal policy. Specifically, this policy stipulated that all “skilled positions should be filled by ‘American citizens, or those eligible for citizenship’” (Takaki 1983: 76) effectively excluding the Chinese, Japanese, Koreans, and Filipinos. During this time, according to U.S. federal law, in the form of the Naturalization Law of 1790, non-whites were not eligible for citizenship (Takaki 1983: 76).

After annexation, which eliminated tariffs such as the McKinley tariff geared toward taxing foreign imports, the Hawaiian sugar industry experienced a sizeable upsurge in investment. In this setting five corporations (C. Brewer & Co., Hackfeld & Co, Castle & Cooke, Theo. H. Davies, and Alexander & Baldwin) that managed plantations and other business ventures rose to prominence, so much so that by 1920, these five organizations controlled 94% of all the sugar produced in the archipelago (MacLennan 2014:82). The “Big Five” controlled much more than just the production and sale of sugar. Like the individual planters before them, these five companies had tremendous political and economic influence and the land and water resource policies established in the 19<sup>th</sup> century still operated in their favor. As part of the U.S., sugar producers in Hawaii were no longer fearful of U.S. tariffs cutting into their profits. Moreover, these corporations achieved something that individual planters did not: the consolidation of

multiple plantations and resources under the umbrella of a single, albeit corporate, entity. Through this shift in power, the “Big Five” increased their control over the islands. By advancing their influence in electric, telephone, railroad, steamship, and banking ventures they became majority stock holders in key businesses like the California and Hawaiian Sugar Refinery, the Bank of Hawai‘i, and the Hawaiian Electric Company (Takaki 1983:20).

The context of my research is the period between early 1900s and the late 1940s. As such, the PSM, HSC, and OSC plantations were subject to U.S. laws impacting the archipelago and processes of social change resulting from changes in labor. Regardless of plantation location in the islands, racial hierarchies still heavily impacted and structured laborer life well into the 20<sup>th</sup> century.

## **Environment**

A brief review of the Hamakua and the Hilo district environments is necessary in order to understand the contexts and landscapes in which the PSM and the HSC developed, prospered, and later declined. In order for sugar plantations to be successful, they required specific physical conditions: abundant water sources, irrigation infrastructure, relatively flat land, and good soil development. The Hamakua and Hilo zones met these criteria.

The PSM and the HSC plantation were located in the Hamakua district located in the northeast windward area on the island of Hawai'i. This district can be broken up into three sections: west Hamakua, east Hamakua, and the interior plateau. Each of these sub-regions has a diverse physical make-up and differs in elevation, average yearly rainfall, and the presence or absence of dikes/streams. The PSM and the HSC were located in the eastern Hamakua section located between two large valleys of Waipi'o and Waimanu, forming a natural boundary. PSM was bordered by Waipi'o valley and the HSC lands, while the HSC was bounded by the PSM and the Waimanu valley which divided the HSC lands from the Paauhau plantation's cane fields.

The OSC plantation was located in the town of Papa'ikou in the northern section of the Hilo district which is also a windward district. Situated on the eastern slopes of Mauna Kea, northern Hilo is characterized by exposed coastal cliffs, deep gulches, rivers/streams, and ample yearly rainfall (Cordy 2000:22). With abundant sources of water and gentle slopes, both the north and south districts were prime areas to establish plantations. The OSC plantation in particular was located between the gulches where Honoli'i and Waiaama streams flowed. As with the PSM and the HSC plantations, these gulches/rivers formed natural boundaries for the plantation and served as the borders separating the OSC from the nearby Pepe'ekeo plantation and the Hilo Sugar Company

plantation lands. Environmentally, the PSM, HSC, and the OSC plantations were established on prime sugar cultivation land; however, broader social, political, and economic developments and events also influenced how these plantations shaped and used the landscape.

## **Pacific Sugar Mill, Honoka'a Sugar Company, and Onomea Sugar Company**

### **Contexts**

#### **Pacific Sugar Mill History**

The PSM, located between Waipi'o valley and the town of Honoka'a in Hawai'i Island's Hamakua district was founded in 1879 by Samuel Parker and F.A. Schaefer (Campbell and Ogburn 1989). This plantation spanned over four miles along the coast and extended up to nine miles inland toward Mauna Kea Mountain. Although sugar was the primary focus, this company also invested in cattle and sheep, and other crops such as canaigre roots in 1895 (Campbell and Ogburn 1989).<sup>2</sup>

Background information about PSM's early laborer demographic was drawn from the Hawaiian Sugar Planters' Association archives at the University of Hawai'i at Manoa. The early workforce of the PSM consisted of immigrant Chinese and Native Hawaiians. However, the decline in the Hawaiian population due to foreign introduced diseases and illnesses had an impact on the available Hawaiian labor pool. Moreover, immigration policies barring specific ethnicities from entering into the U.S. and Hawai'i forced planters to recruit laborers from other areas of the world. As a result, Japanese, Portuguese, Spaniards, Puerto Ricans, Koreans and Filipinos were hired by the plantation to work the plantation fields and mill.

Although the sugar company had suitable land for sugar production and an abundant water supply by diverting natural streams into a flume system used to transport sugar cane stalk, this mill did not prosper for very long. Mismanagement of the PSM plantation led to a glanders epidemic—a highly contagious disease affecting horses and cattle—that resulted in the destruction of the plantation's stables and livestock. In addition, an outbreak of plague caused by poor living conditions ravaged

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<sup>2</sup> Canaigre roots were often used for medicinal purposes as well as a tanning agent for leather and dying wool.



immigrant laborer populations (Campbell and Ogburn 1989). In an effort to cut their losses, the mill closed down in 1913 and sent their sugarcane to the HSC mill for processing. This partial merger was economically successful for both companies. However, PSM was formally incorporated into HSC in 1928 and ceased to be its own independent plantation and instead became the Kukuihaele branch of the HSC (Campbell and Ogburn 1989).

### *Honoka'a Sugar Company History*

The history of the HSC started with its predecessor company the Honoka'a Sugar Plantation in 1876, which spanned 500 acres and was the first sugar plantation in the Hamakua district of Hawai'i Island. This small plantation did not last long and was absorbed into the HSC when it was chartered in 1878 by F.A. Schaefer, J. Marsden, J.F.H. Siemsen, J.C. Bailey and M. McNerny (Campbell and Ogburn 1989). The HSC extended over ten miles along the coast, stretched out approximately three miles inland toward Mauna Kea Mountain, and was bordered by high coastal cliffs. After absorbing the PSM, the HSC also grew to encompass the area between the gulch of Kahaupu and Waipio Valley.

At the time of the company's foundation, Native Hawaiians were the predominate source of labor. As was the case with the PSM however, complex economic, political, and social dynamics such as the decrease in the Hawaiian population, racist ideologies concerning the increasing Chinese population and the pursuit of cheaper immigrant labor led the company to diversify their labor sources. These undercurrents resulted in the hiring of immigrant workers from both Europe and Asia. To house these various ethnic groups, the HSC organized laborer camps by ethnicity, each with "outdoor cookhouses, bathhouses, laundries, and running water" (Campbell and Ogburn 1989).

The plantation company also provided various institutions to improve the immigrant's life such as a hospital for medical care, a government school and an "Oriental" school (Campbell and Ogburn 1989).

Despite experiencing several difficulties such as various droughts and issues with an outbreak of plague in the early 1900s, the HSC managed to continue producing sugar until 1978, when the company merged with the Laupahoehoe Sugar Company (a T.H. Davies Company plantation) and was renamed the "Davies Hamakua Plantation Inc." (Campbell and Ogburn 1989).

#### *Onomea Sugar Company History*

The OSC, owned by the C. Brewer & Co. agency, started as a consolidation of three smaller companies (the Onomea, Paukaa, and Papa'ikou plantations) in 1888 (Campbell and Ogburn 1989). This plantation, located in Papa'ikou within the district of Hilo on the island of Hawai'i, extended along the coast approximately six miles and inland three miles ending at the forest line.

Unlike the PSM and the HSC, the plantation fields of the OSC required little irrigation as the area experienced heavy rainfall year round. This rainfall allowed the plantation to divert various streams in the vicinity for fluming and electrical power; however, the heavy rainfall also washed out the topsoil of the sugar fields, resulting in decreased soil nutrients. To combat this issue, the OSC became the first Hawaiian sugar plantation to utilize commercial fertilizer to restore soil nutrients and boost productivity (Campbell and Ogburn 1989). As was the case with most of the sugar plantations in the Hawaiian Islands, the OSC employed workers from a variety of backgrounds and recruited in foreign countries, such as China, Japan, Portugal, the

Philippines, and Puerto Rico. During World War II (1941), the company boasted to have employed “over 3,000 men, women and children” who were housed in six different villages within the plantation (Campbell and Ogburn 1989). This plantation remained a productive sugar producer until 1965 when the OSC merged with the Hilo Sugar Company and was renamed the Mauna Kea Sugar Company, which was the third largest plantation in terms of acreage (13,000 acres) on the Big Island.

### **Hawaiian Sugar Industry Labor**

Planters and sugar conglomerates such as The Big Five in Hawai'i relied on and facilitated several phases of immigration to supply their plantations with cheap laborers from various places around the globe. During the initial years of the sugar industry in the 1830s, white planters could not purchase or own the land; instead they leased land from Hawaiian *ali'i* and employed Hawaiian commoners to meet their labor requirements. This labor force was perceived as inadequate by plantation management and frustrated managers and planters alike. For example, William Hooper, a planter under the employ of Ladd and Company on the island of Kauai, described the Hawaiian workers as "undependable, as children, as 'dull asses,' and as 'Indians'" who were "always ready to deceive their employer and escape from work" (Takaki 1983:10-11). 19<sup>th</sup> century Euro-American racial sentiments from this point onwards were formalized into racial hierarchies and plantation occupational structures that determined what type of work certain races were best suited for, and how much they should be compensated for their labor. These racial labor policies were a result of legitimizing the white ruling elite's racist ideologies through their economic and political control of the archipelago.

The labor demands of the Hawaiian sugar industry grew exponentially from the 1830s until the mid-20<sup>th</sup> century. Planters not only required more workers, but workers who they wished to secure at low pay scales<sup>3</sup>. The first area that these planters exploited was politically and economically volatile China of the 1850s. Due to racist ideologies regarding the growing Chinese population and fear of their influence, planters began recruiting from various other places such as Portugal in the 1870s, Japan in the 1880s, as well as Korea, the Philippines, and Puerto Rico at the turn of the 20<sup>th</sup> century (see Appendix A, Table 1). The poor, rural demographic was recruited from these

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<sup>3</sup> The decline of the Native Hawaiian population since western contact due to the introduction of diseases was a driving factor in influencing planters to acquire labor power from a source outside of the archipelago (MacLennan 2014: 22).

countries as they were experiencing intense social, political, and economic crises such as the Opium Wars and the Taiping Rebellion in China or the *Phylloxera* blight that impacted the wine industry in Portugal. Out of these waves of immigration, tensions between groups heightened and resulted in differentiations and expressions of identity. In the workplace, planter racial hegemonies emphasized racial distinctions that underscored economic class, differential wages (Figure 2), and occupational mobility. Wages and occupational mobility pivoted on the perception of race. Figures 2 and 3 emphasize how plantation management organized their laborers into categorizations of race. More specifically, figures 2 and 3 accentuate the emphasis that plantation management placed on the relation between race and appropriate wages. They display racial categorizations and the averages of wages paid to laborers based on perceptions of race.

<b>Ethnic Groups</b>	<b>Country of Origin</b>	<b>Peak Immigration dates</b>
Chinese	China	1851-1852
Japanese	Japan	1868, 1886-1908
Portuguese	Portugal	1876-1878
Spaniards	Spain	1906-1913
Koreans	Korea	1900-1910
Filipinos	The Philippines	1906-1932
Puerto Ricans	Puerto Rico	1900-1910

**Table 1.** Peak immigration dates and countries of origin of Hawaiian sugar industry laborers.

-000-  
WAGES IN THE HAWAIIAN ISLANDS.  
-000-

Name of establishment: Pacific Sugar Mill; Pay roll for: April.

Post office: Kukuiahaele, Hawaii; Person furnishing data:

Occupation	Number of en- ployees	Nationality	Sex	Days per Week	Hours per Day	Hours per Week	Rate of Wages
Bag Sewers,	1	Japanese	f	6	12	72	13.- per mo
Blacksmiths,	1	American	m	6	10	59½	120.- " "
	1	Japanese	m	6	10	59½	55.- " "
Blacksmith's helpers	1	Portuguesem	m	6	10	59½	26.- " "
	1	Hawaiian	m	6	10	59½	26.- " "
Bookkeepers	1	American	m	6	9	52	150.- " "
Bookkeeper's assistants	1	Amer-Haw	m	6	9	52	75.- " "
Camp Cleaners	1	Canadian	m	6	10	59½	75.0 " "
	2	Hawaiian	m	6	10	59½	26.- " "
Cane Cutters	30	Japanese	m	6	10	59½	20.- " "
	40	Korean	m	6	10	59½	20.- " "
	23	Filipino	m	6	10	59½	18.- " "
	33	Japanese	m	6	10	59½	23.50 " "
	30	Porto Ri.	m	6	10	59½	23.50 " "
	7	Spanish	m	6	10	59½	23.50 " "
Cane Loaders	11	Japanese	m	6	10	59½	20.- " "
	1	Portuguesem	m	6	10	59½	8.- " "
	26	Japanese	m	6	10	59½	23.50 " "
	4	Filipino	m	6	10	59½	18.- " "
Carpenters	1	Portuguesem	m	6	10	59½	45.- " "
	1	Japanese	m	6	10	59½	2.50 per day
	2	"	m	6	10	59½	1.25 " "
	1	"	m	6	10	59½	1.10 " "
	1	"	m	6	10	59½	26.- per mo.
	1	Hawaiian	m	6	10	59½	28.- " "
Chemists	1	Dutch	m	6	12	72	200.- " "
Chemist Helpers	1	Japanese	m	6	12	72	25.- " "
Clerks, freight	1	American	m	6	10	59½	50.- " "
Cooks,	1	Japanese	m	6	10	60	26.- " "
	1	Chinese	m	6	10	60	26.- " "
Dairymen	1	Portuguesem	m	6	10	59½	27.- " "
Ditch men	1	Japanese	m	6	10	59½	28.- " "
	1	"	m	6	10	59½	27.- " "
	2	"	m	6	10	59½	24.- " "
Dynamo Tenders	1	Japanese	m	6	12	72	26.- " "
Engineers, chief	1	Scotch	m	6	12	72	175.- " "

**Figure 2.** Census of wages of plantation laborers based on perceived racial groups for the Pacific Sugar Mill. (HSC Sundry Documents #80-99. 48/10. 1909-1912).





**Figure 3.** Hawaiian Sugar Planter's Association racial categorization of plantation workers. Top left: Japanese; top right: Filipino, middle left: Caucasian; middle right: Hawaiian-Chinese; bottom left: Chinese; bottom right: Portuguese.

(Hawaiian Sugar Planter's Association 1949:45)

### **Viewshed Analysis**

In order to address how planter hegemonies were materialized on Hawaiian sugar plantation landscapes, I used geographic information systems (GIS) software to produce visual representations of geospatial data. The two primary goals of this approach are 1) to analyze the possible lines of sight (or viewsheds) from the managers' and *luna* houses, and 2) to assess the distance between laborer camps and plantation facilities on the PSM, HSC, and OSC plantations. Contemporary digital imagery (i.e. satellite imagery) drawn from ArcMap's database provided the base of reference for this effort. The spatial coordinate system applied to this base map was Hawai'i Albers Equal Area Conic.

I georeferenced the historical maps in relation to PSM, HSC, and OSC, as well as aerial photography of OSC using the base map's spatial coordinates. Some of the structures present on both historical maps and the base map initially did not align. To correct this discrepancy and to produce a more accurate spatial representation of the historic maps, I designated the structures that were present on both historic and contemporary maps and properly aligned them as linking-points. I then used ArcMap's georeference tool to stretch the historic map by linking-points to match the contemporary base map's dimensions. This process ensured that locations such as the managers' and *luna* houses, and laborer camps were generally accurate.

To calculate a viewshed, I applied Google Earth Pro's viewshed filter and then transferred the results to the maps of PSM, HSC, and OSC. The viewshed analyses manipulated color and layer values, adding distinct layers on the generated maps. The resulting images display only the highlighted viewsheds and not the rest of that layer's image data. By using this technique, only the viewshed analysis results are included for the managers' and *luna* abodes. As such, the visual imagery of map features (houses,



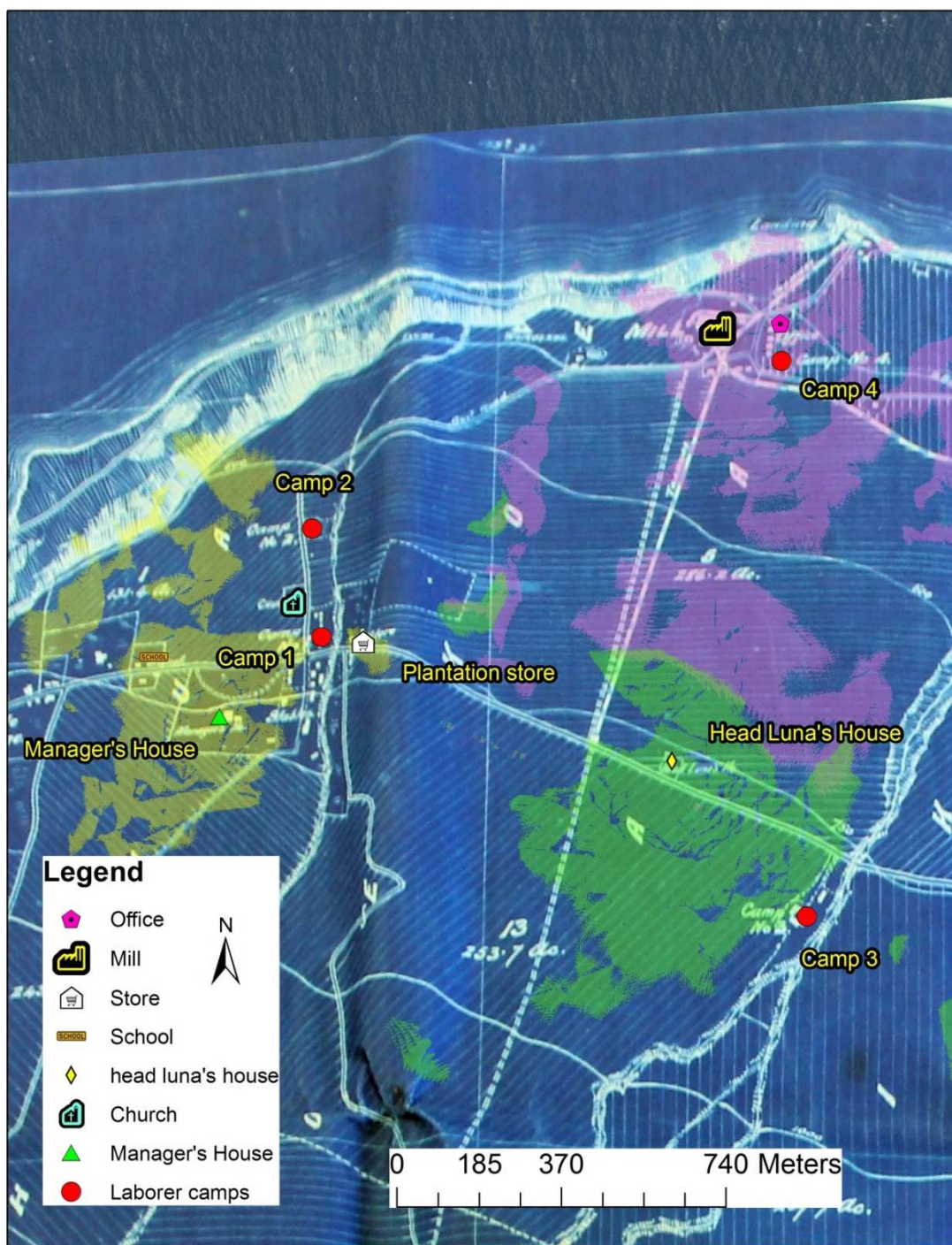
trees, structures, roads, etc) from the viewshed layer does not cover the features of the historic map layer.

Once the maps for the PSM, HSC, and OSC plantation were generated, I calculated the distances between laborer camps and plantation facilities such as schools, hospitals and plantation stores using ArcMap's measurement tool. As the base map and superimposed historic maps and aerial photography were all georeferenced with the same spatial coordinate system, calculations are generally accurate. I measured the distance between plantation laborer camps and plantation institutions along road and pathways as direct routes from individual camps to institutions could not be discerned from the historic maps.

## **Results**

### **Pacific Sugar Mill Plantation Analysis Results**

Viewshed analysis of the PSM indicates that the majority of laborer camps was not visible from the manager's and head *luna* houses or the mill. Only laborer camps One and Four were within the viewsheds of these abodes, while the majority of camps, including camps Two, Three, Five, Six, Seven and Eight—were outside of the surveillance area. These results indicate that the manager could only survey an area limited to parts of Camp One, the plantation store and the school west of the manager's house (see Appendix B, Figure 4) from his house.



**Figure 4.** Viewshed analyses of the manager's and head *luna* houses as well as the sugar mill. The area highlighted in yellow is the manager's viewshed, the areas highlighted in green is the head *luna* viewshed, and the areas highlighted in pink is the sugar mill's viewshed. (Map originally from: HSC PSM, CR, Land Book V.117. 1876-1928)

On the other hand, viewshed analysis for the head *luna* house suggests that Camp Three was just outside of the head *luna* viewshed area. The mill's viewshed analysis indicates that Camp Four and the office were well within the mill's viewshed area. Although the majority of camps were not within these different viewshed areas, each structure associated with plantation management provided a viewshed from which either the manager, head *luna*, or other *luna* could survey the labor force.

The calculations of relative distance between camps and facilities such as schools and stores reveal that Camps Four, Five, Six, Seven, and Eight were significantly further from these structures than Camps One, Two and Three. Camps One, Two, and Three were much closer to the manager's and head *luna* houses than the other camps (see Appendix A, Table 2). The spatial organization of these camps indicates a "core" and "periphery" plantation layout (Wallerstein 2011). The core in this context consisted of the houses of the plantation management such as the manager and head *luna*, as well as plantation facilities such as stores and schools. Moreover, the core of PSM was also closest to other resources such as tailors, restaurants, etc. in Kukuihaele village.

Camp One was situated between the manager's house, the plantation store, and Camp Two. This camp was the closest to the manager's house and the plantation store according to the 1908 map at an approximate distance of 309 meters and 147 meters respectively. According to the viewshed analysis, it was also just shy of the head *luna* viewshed as it was just under 1000 meters from the overseer's house (992 meters).

Camp One was also the closest to the school located just west of the manager's house at a distance of 482 meters. Camp Two was located north of Camp One and was second closest to the plantation store, the school west of the manager's house, and manager's house at an approximate distance of 480 meters, 729 meters and 582 meters respectively.

Camp Three was closest to the head *luna* house at an approximate calculated distance of 663 meters. This camp was third closest to the “core” consisting of the plantation store, the manager’s house, and the closest school, the school west of the manager’s house at a rough distance of 1464 meters, 1780 meters, and 1962 meters. Camp Four, conversely, was adjacent to the plantation office and mill at roughly 260 meters and 78 meters, while being located over 1000 meters from the manager’s house, the plantation store, and the school west of the manager’s house (See Appendix A, Table 2).

Camps Five through Eight were the most distant camps from the plantation “core” with an average distance of over 2000 meters. Camp Five, located further inland to the south, was over 3000 meters from the manager’s house and the school west of the manager’s house, as well as over 2000 meters from the head *luna* house and the plantation store (see Appendix A, Table 2). Camp Six, the most westerly camp on the plantation, was roughly 3312 meters from the head *luna* house, 4425 meters from the manager’s house, and 4087 meters from the plantation store. To the east of Camp Six was another school much closer spatially than the school west of the manager’s house and was roughly 1121 meters away. Camp Seven was located just south of Camp Six, so the school east of Camp Six was the closest educational facility at a distance of 2941.87 meters. Camp Seven however was further from the plantation “core” than Camp Six, with distances well over 3000 meters (see Appendix A, Table 2). Camp Eight was arguably the most secluded out of the camps. It was located the furthest inland and was at least 3000 meters from every structure of power and plantation facilities (see Appendix A, Table 2).





**Figure 5.** Distribution of laborer camps on the PSM landscape. (Map originally from: HSC PSM, CR, Land Book V.117. 1876-1928)

Unfortunately, the nature of the historic maps and historical documentary data made it impossible to connect camps to specific groups. The historic map analyzed labeled camps by number and not ethnicity or race. Various historic documents mention camps either by number, name, or ethnicity, but there was no document that could link ethnic groups with camp names or numbers. Only future work in the area such as survey and excavation research can possibly elucidate which groups lived where.

The placement of these camps reflects planter and manager ideology in terms of the racial hierarchy. Scholars (MacLennan 2014; Takaki 1983) highlight the fact that workers who were employed in skilled positions were housed closer to the manager's house and the mill in Hawai'i and that these positions were restricted to people who were considered white, or were afforded a white status. In line with these observations, it can be reasoned that camps One, Two, and Three may have housed laborers that were higher on the racial hierarchy such as those that fall under the planter categorization of white (Portuguese, Spanish, etc.), or even non-white groups that were viewed favorably at the time such as the Japanese. Moreover, camps One, Two, and Three are also the closest spatially to the plantation store, the school adjacent to the manager's house and Kukuihaele village with all of its resources (tailors, restaurants, etc.). The spatial proximity to both the places of power (manager's and head *luna* houses) and to various resources supports the interpretation that the organization of camps One, Two, and Three and the relative distance and isolation of camps Four, Five, Six, Seven, and Eight was the result of planter racial ideology materializing on the landscape. Camps One, Two, and Three were located closer to people in power and had easier access to necessary resources. It is possible that laborers in these camps both had the option to live closer to the plantation core and preferred living in these locations over the more distant camps. Camps Four, Five, Six, Seven, and Eight on the

other hand were isolated from Camps One, Two, and Three, the people in power, as well as access to the store, office, and schools. The distance from these resources indicates that the laborers whom lived in these camps had less access to necessary services, or may have turned to alternative means to fulfill their needs such as community trade, foraging, raising livestock, or growing produce. Moreover, the spatial organization of PSM's laborer camps go against Foucault's notion of the panopticon as the majority of camps were not within the viewshed areas, however as will be discussed shortly not all structures are accounted for on the analyzed map.

While the GIS data suggests that the organization of the laborer camps on the PSM's landscape reflects racial hierarchies and/or the administrator's racist ideologies, the historical maps do not present a complete picture of spatial relationships of structures on the plantation. First and foremost, there is a possibility that not all structures were correctly labeled, or even labeled at all. According to the historical documentary data (see Figure 10), there were more *luna* and *luna* assistants than are indicated on the map. As such, it is quite possible that there were more surveillance areas on the plantation than the map illustrates; it may even be conceivable that there was a *luna* housed in each camp. The racial diversity of the *luna* assistants, as seen in Figure 10, also supports that these overseers may have been housed amongst the different ethnic camps, thus increasing the effective surveillance area of the plantation administrators.



-3-

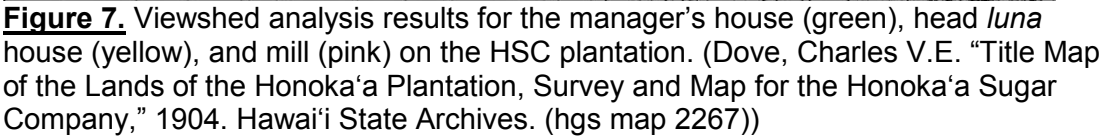
Occupation	Number of em- ployees	Nationality	Sex	Days per Week	Hours per Day	Hours per Week	Rate of Wages
Overseers, assistant	1	German	m	6	10	59½	60.- per mo.
	1	Portuguesem	m	6	10	59½	50.- " "
	3	"	m	6	10	59½	45.- " "
	1	"	m	6	10	59½	35.- " "
	1	Chinese	m	6	10	59½	55.- " "
	1	Japanese	m	6	10	59½	45.- " "
	3	"	m	6	10	59½	40.- " "
	3	"	m	6	10	59½	35.- " "
	1	"	m	6	10	59½	32.- " "
	1	"	m	6	10	59½	30.- " "
	2	Hawaiian	m	6	10	59½	32.- " "
Overseers, Head	1	German	m	6	10	59½	200.- " "
Overseers, steamplowl		Japanese	m	6	10	59½	40.- " "

**Figure 6.** PSM Overseer wage data (HSC Sundry Documents #80-99. 48/10. 1909-1912)

Regardless of the possibility that the historical map is missing data, the GIS data still supports the secondary source data and the interpretation that the PSM's plantation camp organization reflected plantation racial hierarchies, and possibly the temporal sequences of immigration waves. Camps One, Two, and Three were closer in distance by several thousand meters to plantation resources than camps Four, Five, Six, Seven, and Eight. MacLennan (2014) has argued from anthropological data that race divisions on the Hawaiian sugar plantations were reinforced by spatial organization and that *hao/le* management and skilled workers who were accorded white status lived near the sugar mills (MacLennan 2014:198). My data offers another line of material evidence supporting this claim; however only future investigations and excavations can indicate what groups lived where. It is possible that the material evidence reflects a plantation organization that differs from this interpretation, but at present there are no archaeological data sets of these plantations derived from the material record.

### Honoka'a Sugar Company Plantation Analysis Results

Viewshed analysis for the HSC indicates that the manager could only survey a limited area directly from the manager's house. The only camp that was within the viewshed area was Camp One and a few structures which I have designated Laborers' Quarters "1." There were two clusters of structures labelled "Laborers' Quarters" on the map, so to differentiate between the two I designated the group closer to the plantation core "1" and the more distant cluster "2." There is no archival data which elucidate any differences between Laborers' Quarters 1 and 2 as well as the camps, thus it is speculative to discuss what those differences (if any) were. Similarly, the viewshed analyses for the mill and the head *luna* house was also limited in that their viewsheds were restricted to Camp One, the manager's house, the mill, and the head *luna* house (see Appendix B, Figure 6). Parts of Camp Two and the Laborers' houses were within the manager's and the head *luna* viewshed, but just outside of the mill's viewshed area. This is odd due to the fact that the mill was much closer to the Laborers' Houses than either the manager's or the head *luna* houses. Differences in elevation may play a role in this interpretation, however, as the area from the coast up until the town of Honoka'a is characterized by gentle slopes.



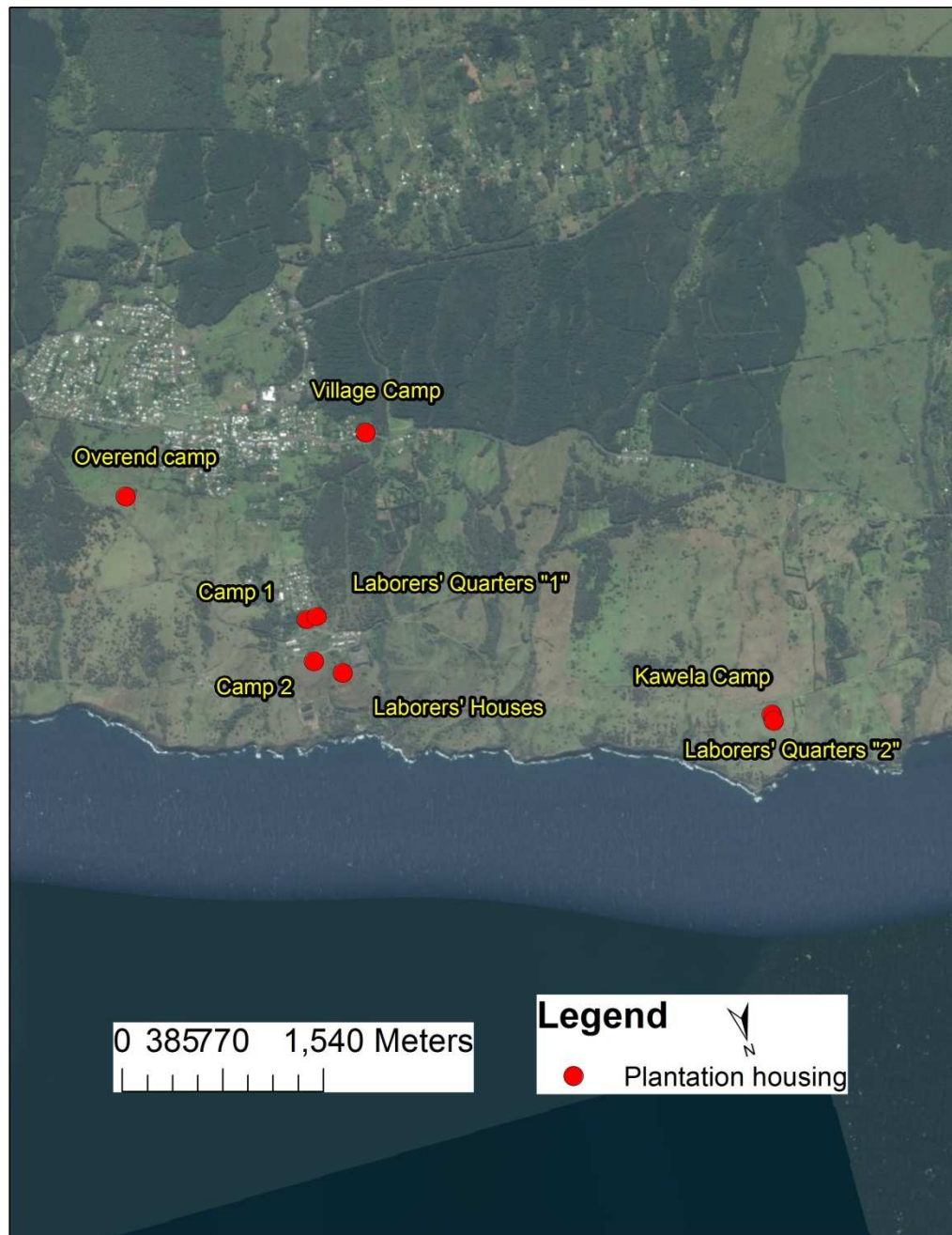
The calculated distance measurements at Pacific Sugar Mill indicate that half of the laborers' camps were at least 1000 meters from plantation facilities and the manager's and head *luna* houses. While there were more stores to choose from, both plantation run and privately owned, these structures were still a ways away from these isolated laborer camps.

The calculations of relative distance between camps and facilities such as schools and stores reveal that the Overend and Kawela camps were significantly further from these structures than Camps One and Two, the Laborer's Houses, as well as the Village Camp. Camp One is surrounded by structures of authority and power. With the manager's house to the south-east, the *luna* and head *luna* houses to the west, the office and mill to the north, Camp One was encircled by people with the ability to drastically impact the camp occupants' lives. Camp One was closest spatially to the manager's house, a plantation store, and the head *luna* house. The approximate distance to the manager's house is 106.41 meters, while the distance to the plantation store, *luna*, and head *luna* house is approximately 97 meters, and 106 meters respectively (see Appendix A, Table 3). Camp One was also the closest to the hospital with an approximate distance of 229 meters.

Camp Two and the Laborer's Houses adjacent to it are separated from Camp One, the manager's, head *luna*, and *luna* houses by the mill. Camp Two was approximately 553 meters from the manager's house and 419 meters from the head *luna* house. The distance between Camp Two and the closest school (Honoka'a school) on the other hand was well over 2000 meters (see Appendix A, Table 3). The distances between the Laborer's Houses and the facilities, as well as the places of power were slightly more than the distances between Camp Two and the same structures save for the distance to the store adjacent to the Laborer's Houses. Camp Two was



approximately 481 meters from the store while the Laborer's Houses were only 157 meters.



**Figure 8.** Distribution of laborer camps on the HSC landscape.

The Overend Camp was not as close to the manager's, *luna*, and head *luna* houses, but was the closest camp to the only school labeled on the map. The approximate distance between the Overend Camp and the school was 563 meters. The

closest store to this camp was “Lindsay’s store” with an approximate distance of 1327 meters.

While the Village Camp was not as close as Camps One and Two to the hospital and the manager’s, *luna*, and head *luna* houses, it was the closest camp to the town of Honoka’a and all of its resources (privately owned stores, post office, saloon, etc.). The approximate distance between the Village Camp and the nearest store, labeled “Jap stores,” was 678 meters. The Village Camp was also the second closest camp to the only school labeled on the map at an approximate distance of 1809 meters. The calculated distances between the manager’s, *luna*, and head *luna* houses and the Village Camp were each over 2100 meters (See Appendix A, Table 3). The Village Camp was also far from the hospital at an approximate distance of 1950 meters.

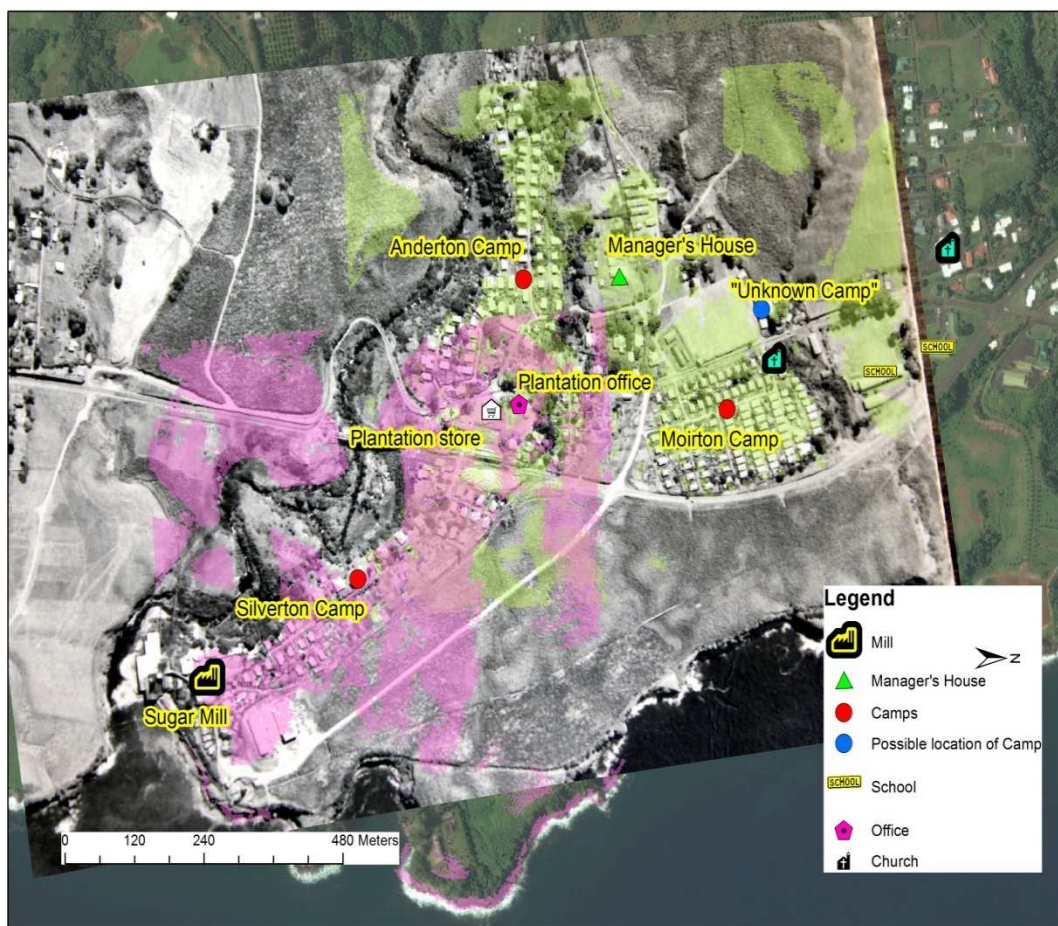
The Kawela Camp and nearby Laborers’ Quarters “2” were by far the most secluded out of HSC’s laborer housing locations. Both were at least 4,000 meters from any structure or facility (see Appendix A, Table 3). Moreover, there were no other laborer camps within a 4,000 meter radius as well. These two clusters of plantation laborer housing structures were well outside the viewshed areas of the plantation management structures and were nowhere near any plantation facilities.

Similar to the PSM results, the HSC plantation GIS data is also suggestive of my hypothesis. Camps One and Two, along with the adjacent Laborer’s Houses are clustered near the manager’s, head *luna*, and *luna* houses as well as the mill. The close spatial proximity to the hospital would have allowed laborers easier access to much needed healthcare services. On the other hand, the Overend, Village, and Kawela camps are isolated from these places of power and facilities by at least 2,000 meters. Laborers that lived in these more distant camps would not have had the same level of access to the hospital and its services. As a result they would have to travel farther to get the help they needed or sought alternative means of healthcare. Thus, the HSC

plantation laborer camp organization can be interpreted as reflecting the materialization of a racial hierarchy on the landscape with the upper echelons of the hierarchy being clustered together and the other, non-white races being scattered in sequestered camps on the landscape. This hypothesis concerning the racial ideologies of the planters is strongly supported by my analysis in both map and secondary literature data.

#### *Onomea Sugar Company Plantation Analysis Results*

Due to the nature of the maps and aerial photographs associated with the OSC plantation, only the manager's house was identified. None of the maps indicated the presence of *luna* houses. In lieu of the absence of marked *luna* structures, viewshed analyses were only conducted on the manager's house and the mill (see Appendix B, Figure 8). The viewshed analysis results for OSC suggests that the manager's viewshed was limited to parts of the Anderton and Moirton camps while the Silverton camp was not within the viewshed. The mill viewshed analysis on the other hand indicates that the plantation store, parts of Anderton Camp, and all of Silverton Camp were within its viewshed area.

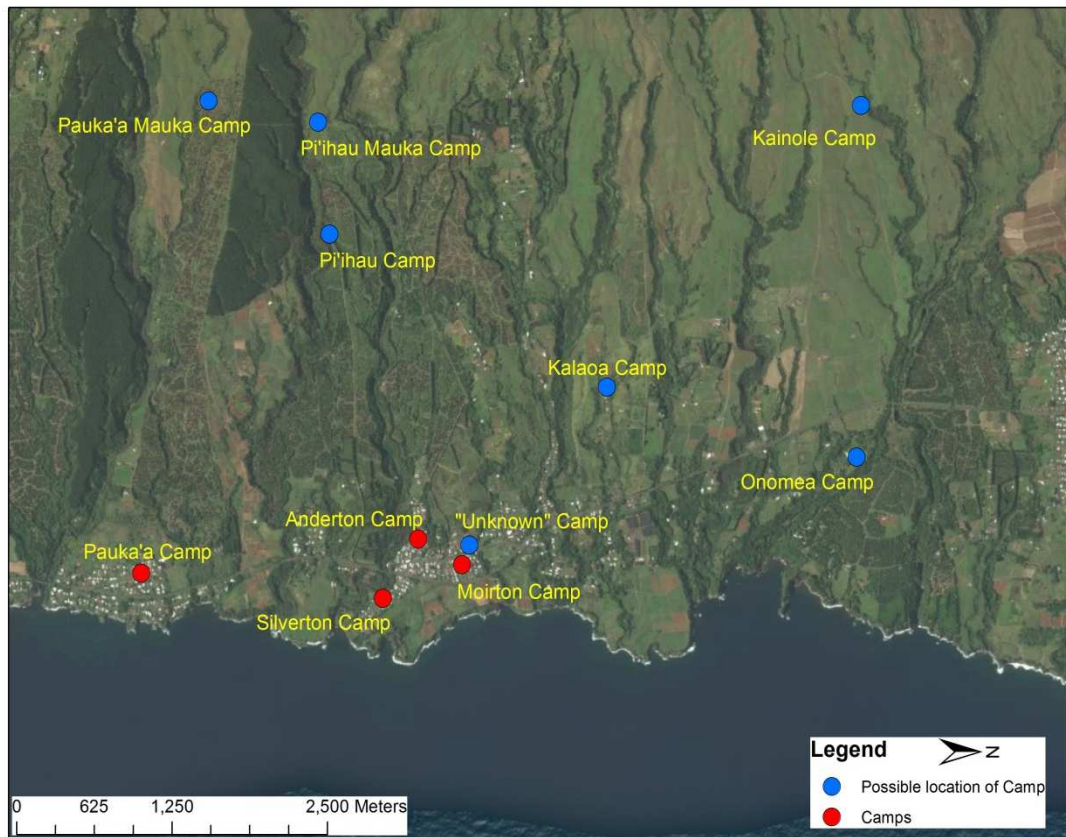


**Figure 9.** Viewshed analyses of the manager's house and the sugar mill of the OSC plantation. The area highlighted in yellow is the manager's viewshed while the areas highlighted in pink highlight the sugar mill's viewshed. Both were layered on top of an aerial photograph from the 1950s to indicate where their viewsheds would have been. (Olson Trust II archives, Aerial Photograph of Papa'ikou circa 1946-1949)

The 1937 map of the OSC plantation could not be georeferenced to satellite imagery due to the nature of the map data. The physical map was too large to be scanned so photographs were taken to capture the relevant data. I was able to use the historical map as a reference to organize map points into two categories: 1) camps with known locations (Silverton, Anderton, Moirton, and Paukaa camps), and 2) possible camp locations (Paukaa Mauka, Piihau, Piihau Mauka, Kalaoa, Onomea, and Kainole camps). Relative distance between camps, facilities, and the manager's house were calculated by measuring the distance between structures along the lines of roads that were in existence in the 1930s and still exist today. The distance between possible



camp locations and facilities and the manager's house was not calculated as many of the roads that are visible on the historical map are not present on contemporary satellite imagery. However, when placed in the context of the total area of the plantation, the possible camp location points clearly illustrate that these camps were significantly further away from the plantation facilities and manager's house than the camps with known locations (see Appendix B, Figure 9).



**Figure 10.** Distribution of laborer camps on the OSC landscape.

The calculations of relative distance between camps and facilities such as schools and the plantation store reveal that the Paukaa, Paukaa Mauka, Piihau, Piihau Mauka, Kalaoa, Onomea, and Kainole camps were significantly further in distance from these structures than the Unknown Camp (where the present gym is located), Silverton, Anderton and Moirton camps. Moreover, the Unknown, Silverton, Anderton and Moirton

camps were much closer to the manager's house and the sugar mill than the other camps.

The Unknown, Anderton, and Moirton camps were the closest to the known facilities present on the 1932 map of the OSC. Unlike the other camps whose position on the landscape is uncertain, I was able to measure the distances to structures of power and facilities for the Unknown Camp because the roads that were present on the 1932 map appear to be the same as those on the aerial photograph from the 1950s. The approximate distance between the Unknown Camp and the manager's house, plantation office and plantation store were below 600 meters, while the distance between this camp and the public and Japanese schools were 441 meters and 310 meters respectively.

The distances from the Anderton Camp to the plantation store and office were approximately 223 meters and 280 meters respectively. This camp was the closest to these plantation structures that served a very vital purpose: the store was a place in which the community could purchase necessary goods, while the plantation office was where laborers received their wages. The Moirton Camp was situated between the plantation store and office as well as both the public and Japanese schools.

The Silverton Camp on the other hand was adjacent to and located the closest to the sugar mill. Although it was located several hundred meters from the store, office, manager's house, and schools, the Silverton Camp was still located relatively close to these facilities in comparison to the Paukaa, Paukaa Mauka, Piihau, Piihau Mauka, Kalaoa, Onomea, and Kainole camps. It was located approximately 179 meters from the store, 249 meters from the office, 548 meters from the manager's house, 892 meters from the public school, and 1,027 meters from the Japanese school.

As racial groupings could not be pinned to certain camps from either the aerial photograph or the 1932 plantation map, it is unclear which school the camp inhabitants attended. It is possible that laborers and the families of laborers frequented other

structures not labelled on the map or facilities that were not the nearest geographically to their respective camps, but without data to support such an interpretation this suggestion is speculative at best.

The analysis of the OSC plantation maps and aerial photography follows the same patterns of both the PSM and HSC plantation laborer camp organizations. The Anderton, Silverton, Moirton, and Unknown camps were situated well within 1500 meters of both the plantation facilities and the manager's house, while 63% of the total camps were well out of the viewshed areas and were at least over 2000 meters away from the schools, store, and office.

Unfortunately, as was the case with the PSM plantation map, the OSC map and aerial photographs did not label the locations of the *luna* houses. A plantation of this size with 11 laborer camps segregated by thousands of meters would have required at least a head *luna* and a few *luna* to oversee work groups, so it is difficult to claim that this plantation did not have a single overseer due to the analyzed map and aerial photograph datasets. As discussed earlier, plantations were a fusion of field and factory practices (Mintz 1985: 47). To maintain efficient production and decrease waste, labor groups in both the field and mill would have needed supervision of some kind in order to maintain a productive field-mill process. Punctuality and discipline, in this case, was enforced by head *luna* and *luna*. Thus, it is improbable that the OSC plantation was without people or structures associated with these positions.

## Discussion

The results of all three plantations' viewshed analyses, calculated distance measurements, and over all camp distribution suggests that they all followed a similar pattern. Plantation facilities were closer to places of power such as the manager's and head *luna* houses. In addition, this pattern also reflects a type of "core-periphery" organization (Wallerstein 2011) when combined with information gleaned from secondary sources (MacLennan 2014). In particular, people who were employed in skilled positions were located within the core, while the groups that filled the unskilled positions, such as cane cutters, were organized on the periphery. In fact, at least 50 percent of laborer camps, if not the majority of camps, were located several thousand meters from facilities and the core, suggesting that the majority of the workforce, who were non-white laborers, were employed in unskilled positions.

While the historical maps and documents do not mention where specific racial groups were housed on the plantations, by viewing these results through a Marxist lens, specifically the labor theory of value and valuation of labor-power theories, it is possible to postulate where groups were located on the landscape. Those who belonged to the upper ranks of the plantation racial hierarchies, such as those accorded a white status may have been located closer to the manager's and head *luna* house, as well as the mill and plantation facilities. Laborers who belonged to the lower ranks, such as the Filipinos, may have been located further from the white elites, and by extension, further from plantation facilities and places of power.

Racial categorization and class often intersected in the form of occupational position and pay grade on the Hawaiian sugar plantations. Whites (as well as those accorded white status) and a few non-whites were employed in skilled positions, while most unskilled positions were filled by non-white groups. By emphasizing the racial hierarchy, plantation management in the early to mid-20<sup>th</sup> century were able to value the

labor of non-white peoples less than whites by not only restricting their occupational mobility but by paying them less for positions filled by both whites and non-whites. Such was the case with the *luna* assistant positions that were filled by Americans and Euro-Americans as well as Chinese and Japanese laborers (see Figure 10, Overseer wage data). Moreover, through this objectification of labor value and the differential valuation of labor-power based on race, planters and managers were able to extract larger sums of surplus value from the commodity produced. In other words, by emphasizing the racial hierarchy to justify different pay grades based on race, Hawaiian sugar companies were able to pay the bulk of their labor force (non-whites) less than their white workers, and capitalize on the wage gap in terms of sugar profits.

The viewshed analysis results indicate that direct surveillance may not have been a strategy pursued by plantation management at any of the three studied plantations. Surveillance was employed by managers and *luna* from their houses, but the panopticon was not actively employed on every laborer camp according to the historical maps. In other words, Foucault's (1995) notion of panopticon was only effective physically within limited areas while the internalization of the panopticon may not have been as emphasized in the peripheral laborer camps. If this was not the case, then what other methods could they have employed to structure laborer life and productivity? Information derived from secondary sources clearly states that plantation management engaged in methods that were at times more explicitly coercive such as physical abuse (MacLennan 2014:173; Takaki 1983: 73-75). Plantation management also actively pursued more subtle strategies such as withholding medical care, not hiring enough translators for non-English speaking laborers, and fines based on unexcused absences (Takaki 1983:67; Tamura 1994:11), as well as pitting one group against another (Takaki 1983:25,68). These exploitative practices would have been just as effective, if not more so, than spatial control. They not only structured laborer behavior, but also emphasized

racial discrimination by penalizing laborer groups for not speaking the same language as the plantation management. Moreover, the spatial organization of laborer camps and medicalization policies that discriminate against specific racial groups may have played a role in specific laborer groups being tardy or absent, which according to plantation policies was punishable by fines.

## Conclusion

My study offers an analysis of the materialization of planter hegemony on the Hawaiian sugar plantation landscape in the form of segregated laborer camps to understand how these spatial layouts had an impact on the laborers' lives. Future work, including field surveys, archaeological excavations, and community outreach and participation will highlight how laborers negotiated planter hegemony in the early to mid-20<sup>th</sup> century as well as indicate other possible forms of surveillance. It is possible that some *luna* or *luna* assistant houses were not labelled on the analyzed maps; thus other areas of surveillance may have existed closer to, or even within the segregated labor camps. Excavated materials associated with class or occupation can hint at who lived where within the camps as well as how laborers or *luna/luna* assistants may have negotiated the plantation system to structure daily life in various ways.

Field surveys and archaeological excavations at the labor camps of the PSM, HSC, and OSC plantations can also provide specific laborer camp contexts and highlight phenomena related to identity negotiation and formation. Excavation and analysis of material remains underscore what was consumed at a site and can thus point to the former inhabitants' identities in a number of ways. While investigating ethnic identity on the basis of material assemblages alone can be problematic—people aren't the artifacts they leave behind—data gleaned from material analyses can indicate aspects of social and economic identities. For instance, a site with a higher concentration of expensive goods in the 19<sup>th</sup> and early 20<sup>th</sup> century differs from one with cheaper or more economical material as per the spatio-temporal context. Historical archaeological studies that focus on 19<sup>th</sup>-century contexts in Hawai'i (Flexner 2010; Mills *et al.* 2013) can provide insights into the types of materials that were available in the archipelago such as a variety of ceramic (whitewares, stonewares, slipwares, and porcelain) and

glass (alcohol bottles, medicine bottles, and beads) artifacts. As such, future investigation can inform us about the specific processes that influenced the emergence of contemporary Hawaiian local culture, and whether or not they reflect distinct processes such as creolization (Deagan 1996) or ethnogenesis (Cipolla 2013), or, something entirely different and unique.

The materialization of early to mid-20<sup>th</sup> century Hawaiian sugar planter hegemonies and strategies related to emphasizing the racial hierarchy has been understudied while the majority of archaeological focuses in this context investigate other phenomena related to identity negotiation (Kraus-Friedberg 2008), and contemporary issues affecting descendant populations (Six 2010; Way 2010). Laborer life on Hawaiian sugar plantations was impacted daily through social (racial hierarchy), economic (racialized wage rates), and political (restricted voter rights and citizenship) dynamics that materialized on the landscape as segregated laborer camps.

My analysis of three plantations on Hawai'i is significant to the understanding of the socio-economic and political forces that structured laborer life on Hawaiian sugar plantations. My analysis supports secondary source information concerning group segregation on the landscape and demonstrates visually how the social, political, and economic forces of the Hawaiian sugar industry and planter hegemony influenced the materialization of these social constructs on the landscape. Additionally, my study opens up additional questions for future investigation concerning how laborers negotiated or resisted planter hegemony, and other strategies plantation management employed to structure laborer life and productivity; questions which hopefully will be addressed in future investigations.



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### **Appendix A. Data Tables**

<b>Ethnic Groups</b>	<b>Country of Origin</b>	<b>Peak Immigration dates</b>
Chinese	China	1851-1852
Japanese	Japan	1868, 1886-1908
Portuguese	Portugal	1876-1878
Spaniards	Spain	1906-1913
Koreans	Korea	1900-1910
Filipinos	The Philippines	1906-1932
Puerto Ricans	Puerto Rico	1900-1910

**Table 1.** Peak immigration dates and countries of origin of Hawaiian sugar industry laborers

<b>Laborer Camps</b>	<b>Distance to nearest school</b>	<b>Distance to nearest Plantation store</b>	<b>Distance to Manager's House</b>	<b>Distance to Head <i>Luna</i> House</b>
Camp #1	School west of the manager's house: 482 meters	147 meters	309 meters	992 meters
Camp #2	School west of manager's house: 729 meters	480 meters	582 meters	484 meters
Camp #3	School west of manager's house: 1962 meters	1464 meters	1780 meters	663 meters
Camp #4	School west of manager's house: 1944 meters	1707 meters	1772 meters	2544 meters
Camp #5	School west of manager's house: 3428 meters	2956 meters	3307 meters	2183 meters
Camp #6	School east of Camp #6: 1121 meters	4087 meters	4425 meters	3312 meters
Camp #7	School east of Camp #6: 2942 meters	4440 meters	4771 meters	3644 meters
Camp #8	School west of the manager's house: 3039 meters	3716 meters on the eastern route; 3626 meters on the western route	3382 meters	3412 meters

**Table 2.** Proximate Calculated distances between Laborer camps, facilities, and plantation management structures on the PSM plantation.

<b>Laborer Camps</b>	<b>Distance to nearest school</b>	<b>Distance to nearest store</b>	<b>Distance to Manager's house</b>	<b>Distance to Head Luna house</b>	<b>Distance to Luna houses</b>	<b>Distance to Nearest Hospital</b>
Camp 1	Honoka'a school: 2544 meters	store north of Camp 1: 97 meters	290 meters	106 meters	149 meters	229 meters
Camp 2	Honoka'a school: 2,874 meters	Store north of "laborer's houses": 481 meters	553 meters	419 meters	276 Meters	577 meters
Laborer's houses	Honoka'a school: 3,065 meters	Store north of "laborer's houses": 157 meters	806 meters	619 meters	469 meters	761 meters
Overend Camp	Honoka'a school: 563 meters	Lindsay's store: 1327 meters	2462 meters	2426 meters	2530 meters	2224 meters
Laborer's Quarters "1"	Honoka'a school: 2,569 meters	Plantation store: 121 meters	331 meters	122 meters	102 meters	263 meters
Laborer's Quarters "2"	7,269 meters	Plantation store: 4625 meters	5027 meters	4821 meters	4627 meters	4958 meters
Village Camp	Honoka'a school: 1809 meters	"Jap" stores: 678 meters	2182 meters	2146 meters	2251 meters	1950 meters
Kawela Camp	Honoka'a school: 7320 meters 7320 meters	Plantation store: 4676 meters	5078 meters	4872 meters	4678 meters	5009 meters

**Table 3.** Proximate Calculated distances between Laborer camps, facilities, and plantation management structures on the HSC plantation.

<b>Laborer Camps</b>	<b>Distance to Kalaniana'ole School</b>	<b>Distance to Japanese School</b>	<b>Distance to Plantation store</b>	<b>Distance to Plantation Office</b>	<b>Distance to Manager's house</b>
Paukaa Camp	3,158 meters	3,272 meters	2,419 meters	2,481 meters	2,799 meters
Paukaa Mauka Camp	Unknown	Unknown	Unknown	Unknown	Unknown
Silverton Camp	892 meters	1,027 meters	179 meters	249 meters	548 meters
Anderton Camp	944 meters	1,068 meters	223 meters	280 meters	338 meters
Moirton Camp	426 meters	547 meters	475 meters	420 meters	336 meters
Piihau Mauka Camp	Unknown	Unknown	Unknown	Unknown	Unknown
Piihau Camp	Unknown	Unknown	Unknown	Unknown	Unknown
Kalaoa Camp	Unknown	Unknown	Unknown	Unknown	Unknown
Onomea Camp	Unknown	Unknown	Unknown	Unknown	Unknown
Kainole Camp	Unknown	Unknown	Unknown	Unknown	Unknown
Unkown Camp	310 meters	441 meters	563 meters	506 meters	448 meters

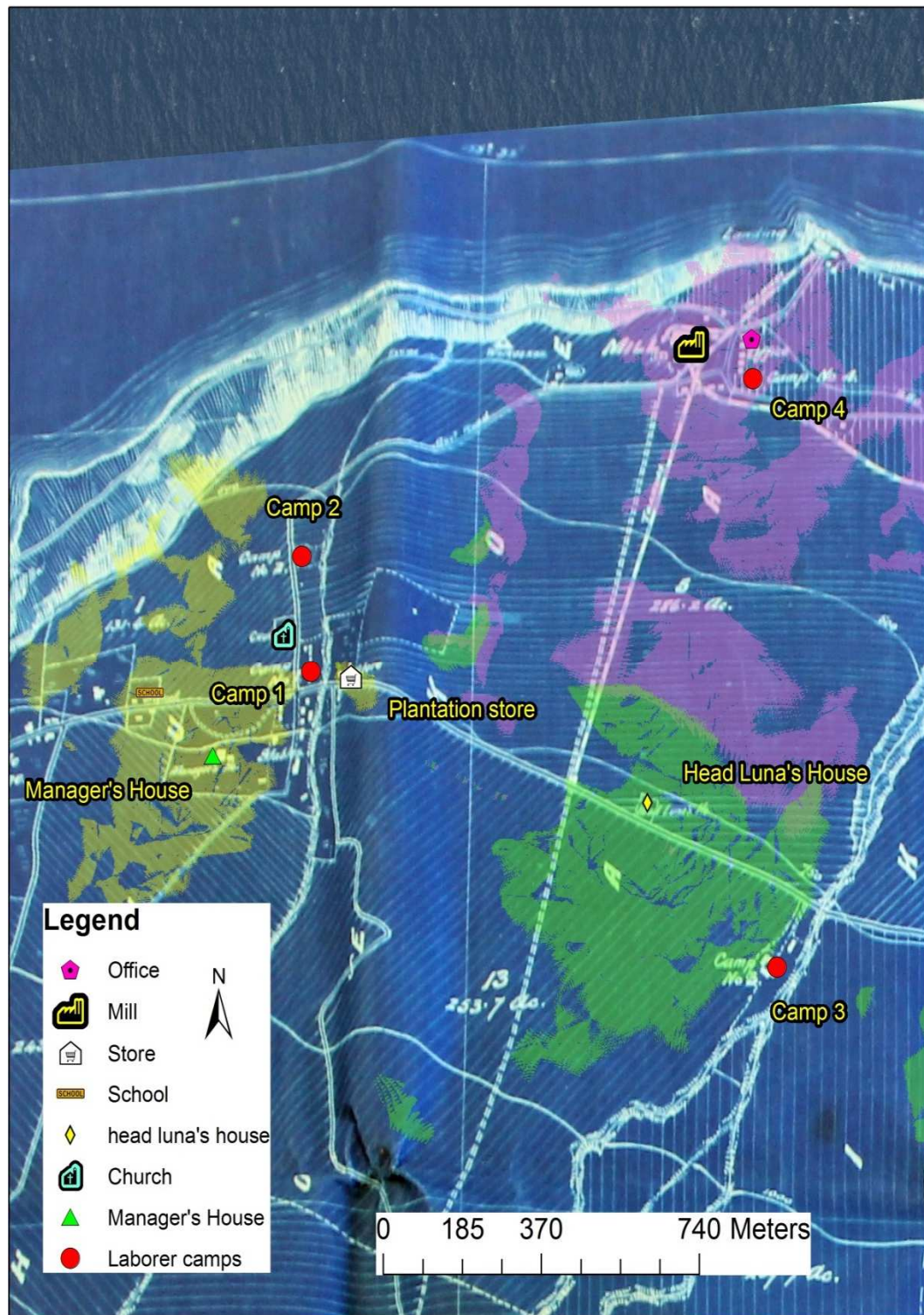
**Table 4.** Proximate Calculated distances between Laborer camps, facilities, and plantation management structures on the OSC plantation.



## Appendix B. Plantation Maps



**Figure 1.** Map of the general locations of the PSM, HSC, and OSC plantations on the island of Hawai'i.



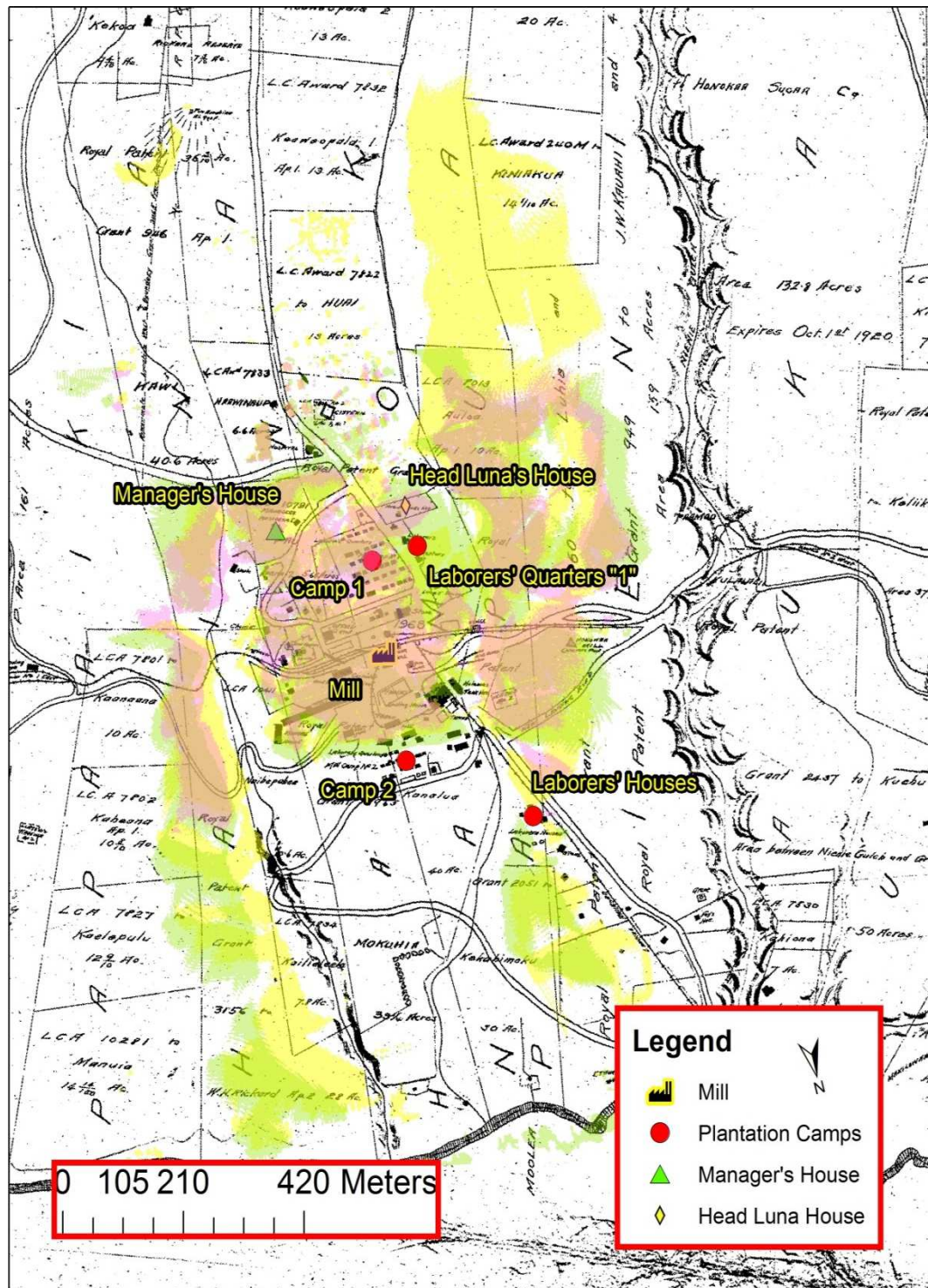
**Figure 4.** Viewshed analyses of the manager's and head *luna* houses as well as the sugar mill. The area highlighted in yellow is the manager's viewshed, the areas highlighted in green is the head *luna* viewshed, and the areas highlighted in pink is the sugar mill's viewshed. (Map originally from: HSC PSM, CR, Land Book V.117. 1876-1928)



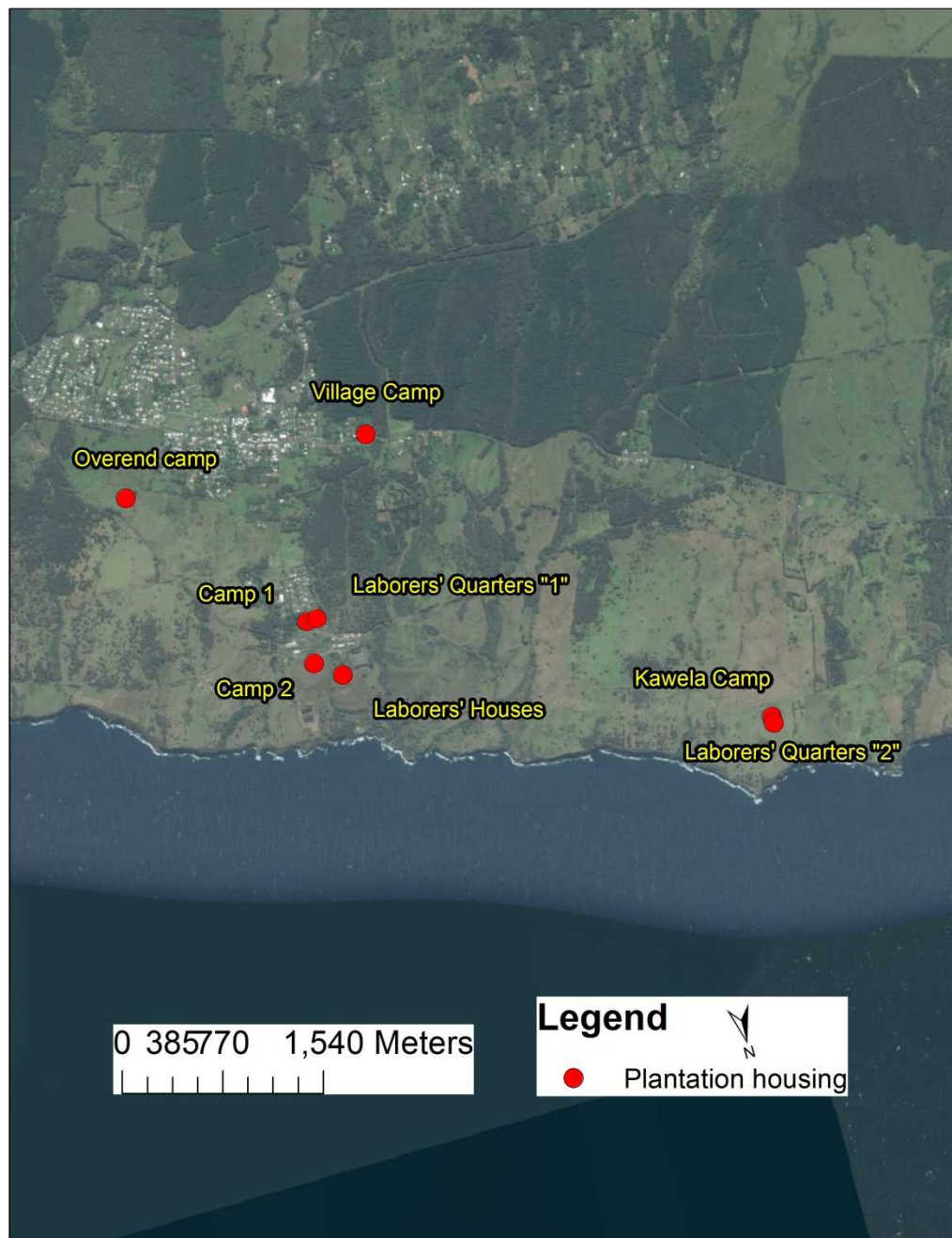


**Figure 5.** Distribution of laborer camps on the PSM landscape. (Map originally from: HSC PSM, CR, Land Book V.117. 1876-1928)



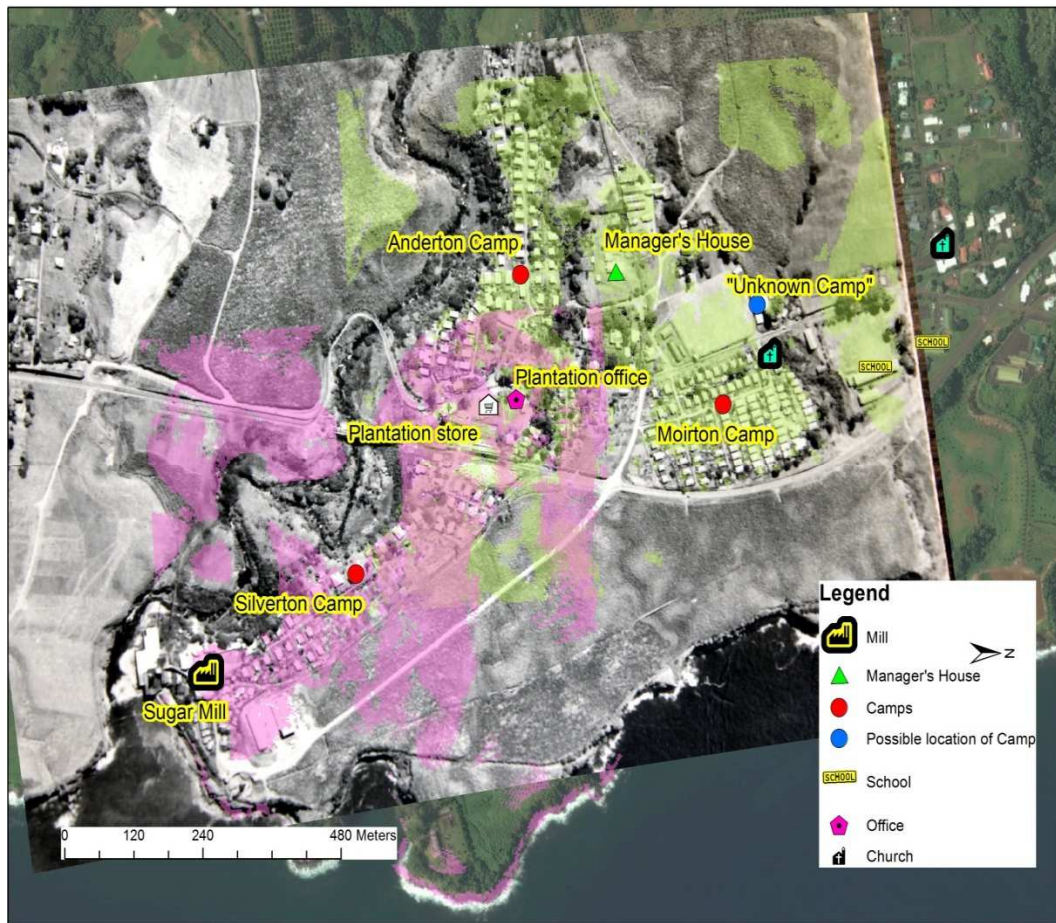


**Figure 6.** Viewshed analysis results for the manager's house (green), head luna house (yellow), and mill (pink) on the HSC plantation. (Dove, Charles V.E. "Title Map of the Lands of the Plantation, Survey and Map for the Honokaa Sugar Company," 1904. Hawai'i State Archives. (hgs map 2267))

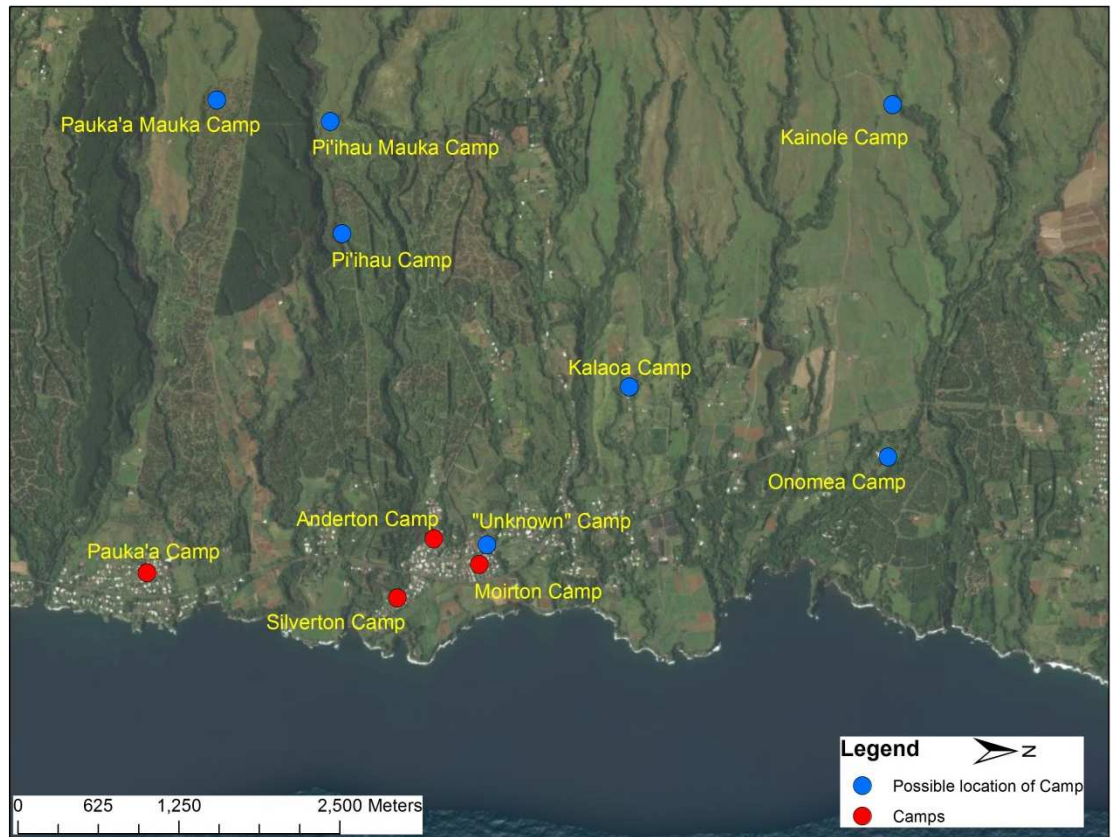


**Figure 7.** Distribution of laborer camps on the HSC landscape.





**Figure 8.** Viewshed analyses of the manager's house and the sugar mill. The area highlighted in yellow is the manager's viewshed while the areas highlighted in pink highlight the sugar mill's viewshed. Both were layered on top of an aerial photograph from the 1950s to indicate where their viewsheds would have been. (Olson Trust II archives, Aerial Photograph of Papa'ikou circa 1946-1949)



**Figure 9.** Distribution of laborer camps on the OSC landscape.

## Glossary of Hawaiian Terms

*Ali'i*: Refers to a hereditary line of rulers or position of power such as a “chief.”

*Ali'i 'Ai Ahupua'a*: A very specific type of *ali'i*; a chief who controlled large tracts of artificially divided land known as *ahupua'a*.

*Haole*: Hawaiian name for foreigner. Since the 19<sup>th</sup> century, this term has taken on a derogatory meaning aimed at white, non-local peoples.

*Maka'ainana*: A word in Hawaiian that refers to Hawaiian commoners and laborers.

The Great *Mahele*: Act passed by the Kingdom of Hawai'i that divided the land into three categories: Crown lands, *ali'i* lands, and *Kuleana* lands. This shift from traditional Hawaiian land management to Western practices also allowed the acquisition of properties through fee-simple transactions (a permanent tenure of an estate in land with the freedom to use or dispose of it at will). It also allowed for the purchase of Hawaiian land by foreigners.

*Luna*: A type of foreman or supervisor on Hawaiian sugar plantations