

**LIFE IN WAIPI'O VALLEY, HAWAII:
1880 TO 1942**

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BACKGROUND

Waipi'o Valley on the island of Hawai'i is celebrated for its important role in traditional history, its association with several of the most respected of the Hawaiian ali'i, and its agricultural capacity which defined the valley as one of the most bountiful spots in the islands (Figure 1). We begin this presentation with a brief exploration of the history of Waipi'o Valley prior to A.D. 1880. We then treat in detail the period between A.D. 1880 and 1942 through the stories of the diverse inhabitants of the valley as they pursued both subsistence and market-driven agricultural production. We conclude with thoughts on how the story of Waipi'o Valley can be further documented through additional archival and documentary research.

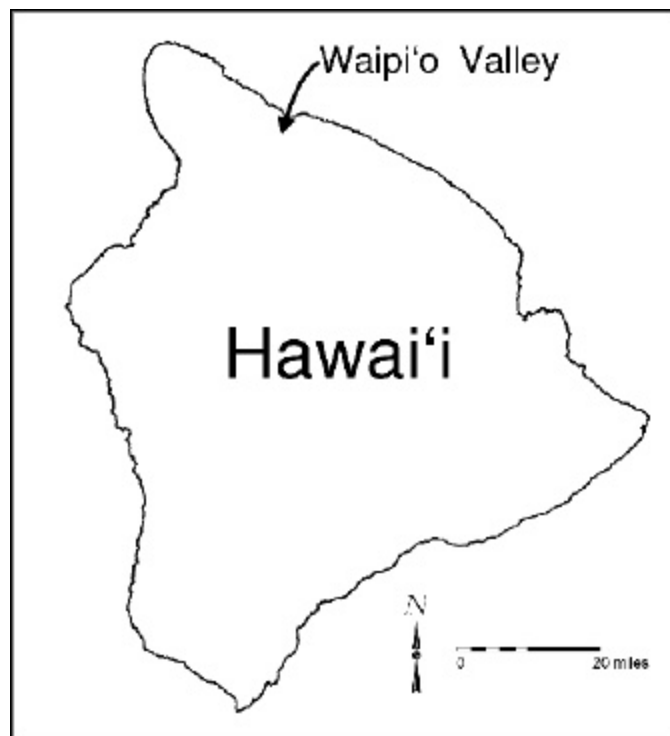


Figure 1. Waipi'o Valley on Hawai'i.

WAIPI'O PRIOR TO A.D. 1778

Traditional history is the primary source for information for this region prior to A.D. 1778; archaeological survey or testing is often an additional source, but this type of investigation has been limited in the valley. The many traditional stories record the tales of supernatural persons and other beings, significant events, influential ali'i, and prominent places. Among these individuals are Lono, Kāne, Kūka'ilimoku, Kanaloa, Māui, Wākea, Milu, Puapualenalena, Nanaue (or Nenewe), Mo'ikeha, 'Olopana, Kiha, Līloa, and 'Umi. Among the important places are at least seven heiau, the most famous of which is Pāka'alana which served as one of two pu'uhonua (or places of refuge)

on Hawai'i. The housing cluster at Nāpo'opo'o, situated where Hi'ilawe Valley joins Waipi'o Valley, and Hi'ilawe and Nanaue Falls, are other frequently mentioned places in the valley.

We present very brief excerpts about these people, beings, and places¹; these document the historic importance of Waipi'o Valley, a point which cannot be overstated.

Lonochose as his wife, Kaikilani'ali'io'opuna, who lived in a breadfruit grove near Hi'ilawe Falls. The gods Kāne and Kanaloa, along with lesser gods, are said to have resided at Alakahi in Waipi'o. Māui is supposed to have gained possession of Ipumakania La'amaomao², the "gourd of constant winds," from Kalei'olu, a kahuna in Waipi'o Valley. Māui eventually dies in Waipi'o when he tries to steal bananas from some of the gods residing there. In old age, Wākea went to live in Waipi'o Valley, where he eventually died and then established a kingdom in the land of the dead. He was succeeded as ali'i of Waipi'o by Milu. The ali'i Milu becomes the ruler of the land of the dead when he disobeys Kāne and is sent to the underworld.

There are several versions of the story of the theft of the shell trumpet, Kiha-pū, in Waipi'o Valley by the man-dog, Puapualenalena. The ali'i are unable to obtain a solid night of sleep because the spirits or gods blow the Kiha-pū all night. Puapualenalena, who is an excellent thief, is asked by an ali'i, variously reported to be Kiha or Līloa or Hākau, to steal the Kiha-pū, which he successfully accomplishes.

As the offspring of a mortal (Kalei) and a shark-god (Kamohoali'i), Nanaue lives near a waterfall on the west side of Waipi'o Valley. Mysterious disappearance of men from the valley are eventually traced to Nanaue, who has a shark's mouth on his back and has developed a taste for human flesh. He escapes to Hāna.

Two voyagers who made the trip between Kahiki and Hawai'i, 'Olopana and Moi'keha, are said to have lived in Waipi'o, until driven out by a flood. Moi'keha's son, Kila, succeeds him as ali'i of Kaua'i, but is lured away by his brothers and abandoned in Waipi'o as a slave. He is suspected to be an ali'i because he is often followed by a rainbow. He escapes to Pāka'alana after being accused of eating kapu food, and is adopted by the ruling ali'i and given the name of Lena. He establishes the kō'ele system of labor (an obligation to work a set number of days for the ali'i). Eventually Kila captures one of his brothers and forces him to confess; he saves his brothers from

¹ For more detailed information, see Beckwith (1940), Cordy (1994), Ellis (1963), Fornander (1916–1919), Hudson (1932), Kamakau (1961), Kalakaua (1888), Stokes (1991), Thrum (1907, 1923), and Westervelt (1905, 1906, 1915).

² Now housed in the collections of the Bishop Museum.

execution and later goes to Kahiki.

The well-known ali'i, Līloa, who unified the island of Hawai'i, also lived in Waipi'o Valley. His son Hākau inherited his rule, while his younger son, 'Umi, inherited Līloa's god, Kūka'ilimoku. Hākau gained a reputation as a cruel ruler, and was subsequently deposed by 'Umi. Known as a great farmer and fisherman, 'Umi is said to have laid out the large kalo patches in Waipi'o. Some accounts credit the establishment of the kō'ele system of labor to the period of 'Umi; one lo'i near the sea in Waipi'o is called Lo'i Kō'ele o 'Umi.

Of the seven heiau recorded for Waipi'o Valley, two (Pāka'alana and Honua'ula) were in the beach area to the west (Kohala side) of Wailoa Stream, where the royal residence (Ka Haunokama'ahala) was also located; one (Kahalekapapa Heiau) was to the east (Hilo side) of the stream (Figure 2). In addition, Hōkūwelowelo Heiau was situated on the cliff on the east side of the valley, Palaka and Moa'ula Heiau were along the cliff slopes on the west side of the valley just inland from the beach area, and Kūahailo (Kūwahailo or Ka'ao Nui) was on the west side of the valley near Nanaue (Neneuwe) Falls. Several fishponds were also present in the valley. These include Muliwai (west side of valley) and Lālākea (east side of valley) fishponds. There was also a royal bathing pond (Mōkapu Pond) in the beach area immediately makai of Muliwai Fishpond.

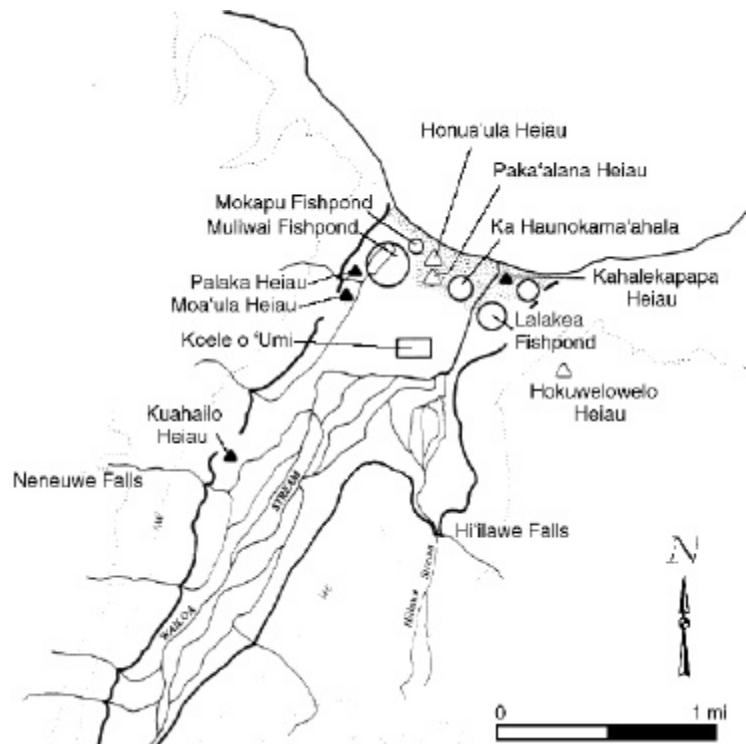


Figure 2. Important Places in Waipi'o Valley (after Cordy 1994:26).

Pāka'alana Heiau has relatively great antiquity as it is mentioned in the Kila stories during the reign of Kūnaka in either the late A.D. 1200s or early A.D. 1300s. It was refurbished on many occasions until its destruction by Ka'eokūlani of Kaua'i during a war with Kamehameha I in A.D. 1791. Pāka'alana was a luakini heiau and a pu'u honua; it also contained a structure called the Hale o Līloa which housed the remains of Līloa and possibly other ali'i. Both Honua'ula Heiau, said to be built by Līloa (A.D. 1580–1600), and Moa'ula Heiau, which was probably built by Hākau (A.D. 1600–1620) but not dedicated until 'Umi (A.D. 1600–1620), were

also luakini heiau. In about A.D. 1780, Kalani'ōpu'u refurbished and reconsecrated Moa'ula Heiau. In addition to designating his son, Kīwala'ō, as his successor, Kalani'ōpu'u gave charge of the war god Kūkā'ilimoku to his nephew, Kamehameha, who later unified all of the Hawaiian islands. The shell trumpet, Kiha-pū, is said to have been stored at Hōkūwelowelo Heiau.

As the seat of royal power and residence until the time of 'Umi, the location of one of two pu'u honua on the island of Hawai'i, and an excellent agricultural area, Waipi'o Valley was home to numerous people. The population of Waipi'o Valley is estimated to have been about 2,600 people just prior to A.D. 1778 (Cordy 1994:10).

WAIPI'O FROM A.D. 1778 TO 1880

Waipi'o Valley is described in the early post-Contact period primarily through the journals, diaries, and letters written by various foreign visitors to the valley, as well as famous battles which occurred at Waipi'o or in its vicinity. A brief overview of observations about Waipi'o Valley from A.D. 1778 to 1880 is presented³.

During the time of Kamehameha I, Waipi'o Valley was ransacked during wars on at least two occasions. In 1790, Keoua of Ka'ū destroyed the fishponds, including Muliwai and Lālākea, and the kalo fields. A year later, in 1791, as mentioned above, several important heiau and other sites of Waipi'o were reputedly destroyed by Ka'eokūlani of Kaua'i. The ravages of these destructive events were certainly repaired, as later visitors to the valley commented on the presence of several of the heiau and on the richness of the agricultural system. The heiau appear to have remained in use until at least 1819 and the end of the kapu system.

One of the first of the foreign visitors to Waipi'o Valley was the missionary, William Ellis, in 1823; he was accompanied by fellow missionary Asa Thurston and a guide, Makoa. They described the valley from the cliffs above:

".....the charming valley, spread out beneath us like a map, with its numerous inhabitants, cottages, plantations, fishponds, and meandering streams (on the surface of which the light canoe was moving to and fro), appeared in beautiful miniature" (Ellis 1963:254).

Ellis and Thurston stayed in the valley for several days. Thurston walked back into the valley for several miles on both the east and west sides. Both the main lower valley, as well as the upper valleys of Waimā, Ko'iawa, Alakahi, and Kawainui, appear to have been in use for cultivation at

³ For more detailed information, see Bates (1854), Bingham (1969), Bird (1964), Cordy (1994), Damon (1927), Ellis (1823), Hill (1856), Hudson (1932), Judd (1967), Kamakau (1961), Thrum (1908).

this time. They noted four villages or housing clusters in the lower valley, the largest of which was Nāpo'opo'o with 43 houses. There were also houses dispersed among the fields. Both Ellis and Thurston commented on how well-cultivated the valley was, and described the crops as including kalo, mai'a (bananas), kō (sugar-cane), and other cultivated plants. Ellis estimated a total of 265 houses in the valley, sufficient to house about 1,325 people.

Pāka'alana Heiau was also visited by Ellis, an indication that it had been rebuilt following its destruction by Ka'eokūlani some thirty-two years earlier. His description also shows the maintenance of tradition:

"It was a large enclosure, less extensive, however, than that at Honaunau....In the midst of the enclosure, under a wide-spreading pandanus, was a small house, called Ke Hale o Riroa (The House of Riroa), from the circumstance of its containing the bones of a king of that name.....We tried, but could not gain admittance to the pahu tabu, or sacred enclosure. We also endeavored to obtain a sight of the bones of Riroa, but the man who had charge of the house told us we must offer a hog before we could be admitted; that Tamehameha, whenever he entered, had always sent offerings; that Rihoriho, since he had become king, had done the same.....Fin[d]ing us unwilling to comply.....they directed us to a rudely carved stone image, about six feet high, standing at one corner of the wall, which they said was a tii, or image of Riroa" (Ellis 1963:260-261).

The description provided by Ellis documents the continued importance of Waipi'o Valley as an extremely productive agricultural area with sacred sites and as a population center. The difference in the number of people living in Waipi'o, a loss of about 51% of the valley population in less than four decades, however, is striking. Two major explanations are the effects of European introduced diseases, which ravaged Native Hawaiians, and the exodus of people from the valley to ports and political centers such as Kona (Cordy 1994:10).

Waipi'o Valley was also briefly visited by Laura Judd, who recorded the visit in a letter written in 1829. She did not, unfortunately, describe much in the way of the activities or places in the valley. Her group entered by descending on sledges of leaves that were used to slide down a precipitous grassy incline. She spent the night in her host's thatched hut, was served a meal of fish and kalo, and slept on a bed of kapa.

In 1830, Hiram Bingham, like Ellis before him, described Waipi'o as a lush agricultural area, relatively densely populated:

"From the lofty precipice on the south-east of Waipio, I had an enchanting view of a Hawaiian landscape of singular beauty and grandeur.....the dwelling-place of twelve or fifteen hundred inhabitants.....The numerous garden-like plantations of

bananas, sugar cane, potatoes, the cloth plant, and the *kalo*, in the different stages of advancement, from recent planting to maturity, some with narrow, and some with broad green leaves of different shade, embossed upon the silvery water.....the unruffled fish ponds; the quiet hamlets near the cliffs, the small scattered thatched huts of the inhabitants....the tents of the travelling chiefs, pitched near the sand banks, at the sea shore....Scarcely a sound was heard from the valley at that soft hour, as the sun was retiring behind the western heights, except the repeated and reverberating strokes of the cloth mallet, on the bark-beater's beam" (Bingham 1969:379–380).

A census by the missionaries in 1831–1832 using the Waimea station estimated the population of Waipi'o Valley at about 1,200 people (Cordy 1994:10). These documents also identify four housing clusters in the valley, Nāpo'opo'o, Keone, Nā'ālapa, and Kouka (Koauka), which probably correspond to the villages observed by Ellis in 1823.

During the Great Māhele of 1848–1851, a relatively large number of Land Commission Awards (LCAs) were granted in Waipi'o, just over 100 total (Cordy 1994:30). All awards were in the lower valley, which suggests that cultivation of the upper valleys had been abandoned sometime after Ellis' 1823 visit. Numerous houses, lo'i, fishponds, 'auwai, trails, and other features are recorded in these awards. In addition to pondfield *kalo*, dryland crops included *kō*, *mai'a*, *kalo*, *pi'a* (arrowroot), coffee, 'awa, 'ulu (breadfruit), *niu* (coconut), *wauke*, *māmaki*, *kou*, and *hala* (Cordy 1994:31). Housing tended to be along the footslopes of the pali or in the sand area at the mouth of the valley. Housing was particularly dense in the area of Napo'opo'o and along the west side of the valley as far inland as Nanaue Falls.

Just over twenty years after the 1830s census, Bates described his visit to Waipi'o. As with the majority of visitors to the valley, he was struck by its scenery and beauty:

"The Valley of Wai-pio may justly be termed the Eden of the Hawaiian Islands. Long before I saw it, I had heard it frequently spoken of in terms of the warmest admiration.....On reaching the brink of the tremendous bank by which its southern limit was bounded, the scene was truly magnificent.....The dwellings of the natives dwindled away nearly to the size of ant-hills. The numerous herds of cattle which were quietly grazing in the everlasting pastures were hardly discernible. (Bates 1854:383).

Like Laura Judd before him, he entered the valley by sliding down a grassy incline. According to his observations, Waipi'o had undergone dramatic changes in the years between the early 1830s and the early 1850s:

"My explorations in this valley convinced me that it once teemed with a large and busy population. The boundaries of ancient fish-ponds, *taro*-beds, and village-sites were very numerous. At different periods in its history, there was not a single square rod which does not seem to have been well cultivated. The population is rapidly decreasing; in fact, it is nearly extinct.....The present population does not exceed two hundred and sixty. (Bates (1854:384-385).

Ellis had found active use of heiau such as Pāka'alana in 1823, but by 1853, Bates did not. He looked for Pāka'alana and the other heiau, but was unsuccessful in locating them. He hypothesizes that the stones of the heiau were being used for enclosures around cottages and for the fishponds.

There is some uncertainty about how many people were living in Waipi'o at this time. Some sources, such as Coulter (1931:30), believe the population of Waipi'o to have been about 700-800; others, such as Hill (1856:344), were told that the population was somewhere between 300 and 400 people. In 1867, Father Elias Bond gave a figure of 670 people (Damon 1927:143). If Bond's count was reasonably accurate, then Coulter's estimate for the decade of the 1850s is probably likely.

Isabella Bird visited Waipi'o in 1873. Just as earlier visitors, she paused on the pali above and observed kalo patches, meadowlands, orange and coffee trees, fishponds, figs, breadfruit, palm trees, and a number of thatched houses in the valley below. She stayed at the home of Halemanu, which was situated in the beach area and included a frame-house and a cook-house. She remarks on its proximity to a heiau, although there was little left of the heiau. She visits the base of Hi'ilawe Falls and rides up and down both sides of the valley, where she notes in particular the fig trees, castor-oil plants, kalo fields, and fishponds. Bird also mentions canoes on Wailoa River and men floating bunches of kalo as they wade in it. Unfortunately, she does not remark on households other than that of her host. Her estimate of the valley population is "not more than 200" (Bird 1964:96).

WAIPI'O BETWEEN A.D. 1880 AND 1942

The decline in valley population over time influenced which areas of the valley were used for agriculture and housing. By 1880, a moderate number of valley residents were Hawaiian, but new groups had begun to reside in the valley. These included Chinese and Portuguese, who were followed by Japanese, and in the early twentieth century by Filipinos; few Japanese settled in Waipi'o. Agricultural fields and residences were concentrated in the lower and middle valleys (Figure 3).



Figure 3. Looking from beach area into lower valley of Waipi'o ca. 1880s. Note walled enclosure in right foreground and reflections of houses in Läläkea Fishpond in left middle ground (Hawaiian Mission Children's Society, Negative N. 1970).

Housing was particularly dense in the area where Hi'ilawe Valley joins the main valley at Näpo'opo'o (Figure 4). The influx of new groups into Waipi'o brought some inevitable changes, but many aspects of life continued much as before. The information that follows is from the Hawaii Business Directories and various oral interviews and other remembrances (Char and Char 1983; Käne 1994; Kodama-Nishimoto et al 1984; UH Ethnic Studies 1978).



Figure 4. View from Hi'ilawe Valley toward mouth of Waipi'o Valley ca. 1880s. Note Nāpo'opo'o buildings in left middle ground (Hawaiian Mission Children's Society, Negative N. 1968).

RICE

Changes are seen with the introduction of rice farming and water buffaloes (to work the rice patches)⁴ and the several rice mills, which appear on the 1881 map of Waipi'o Valley completed by J. S. Emerson, a surveyor of the Kingdom of Hawai'i (Emerson 1881) (Figures 5–9). The Akoi and Akina rice mills are in the vicinity of Nāpo'opo'o. Rice agriculture in the valley continued into the early twentieth century. It was dominated by Chinese rice farmers and mill owners, and to a lesser extent by Hawaiian, Japanese, and other groups in the valley. Many of the Chinese and Japanese immigrants came to Hawai'i as indentured laborers (Char and Char 1983:90; Peterson 1970:26) and later moved into Waipi'o Valley to begin intensive rice agriculture after completing their periods of servitude. Prior to 1914 rice agriculture in Waipi'o was a common economic pursuit and generally there were two crops a year (Char and Char 1983:91).

⁴ Kāne's father recalled that water buffalo were introduced by Akaka (Leong Hut) (Kāne 1994:25).

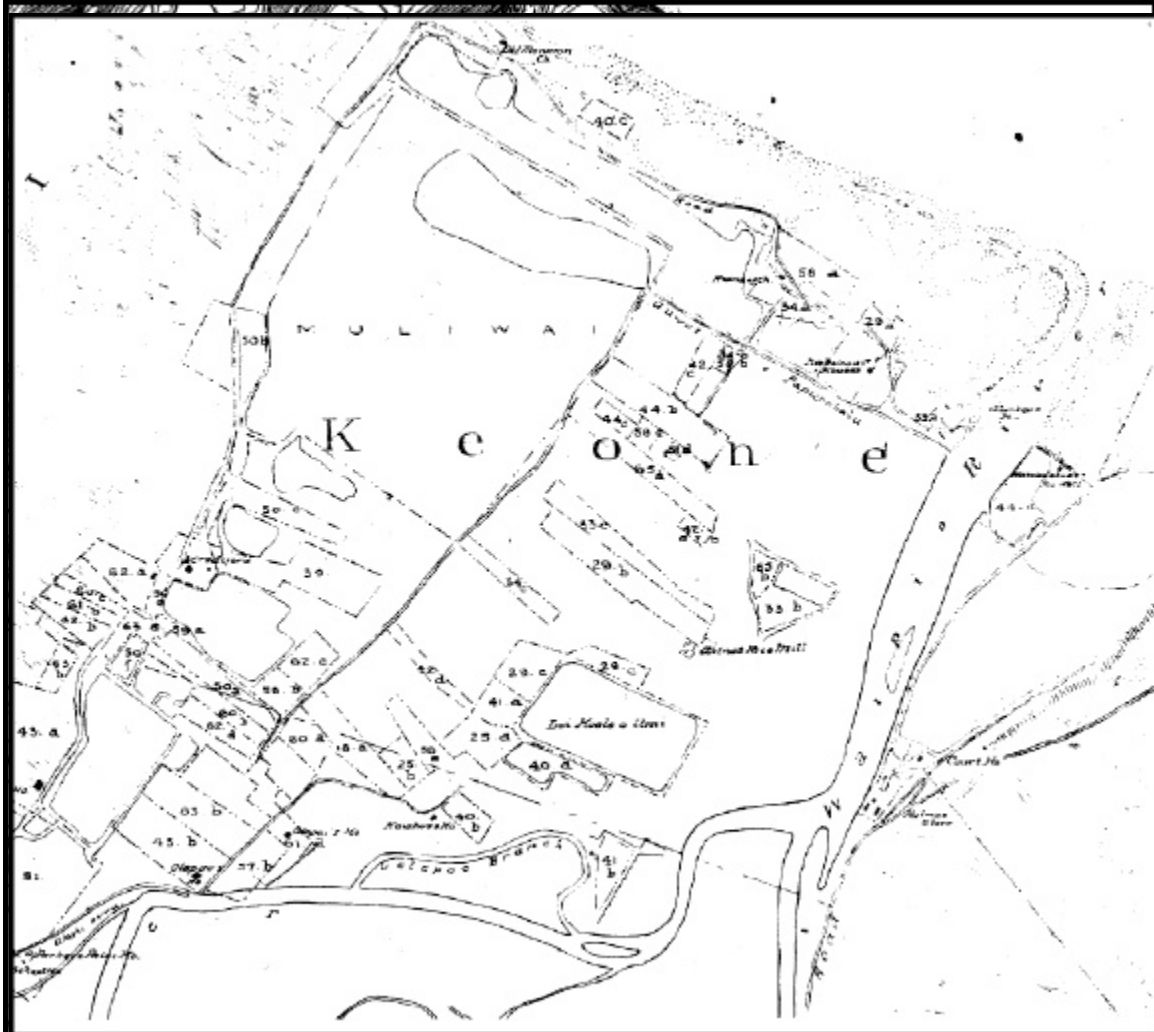


Figure 6. Keone Section of the 1881 Emerson Waipi'o Map. Note Rice Mill on Right-Center.

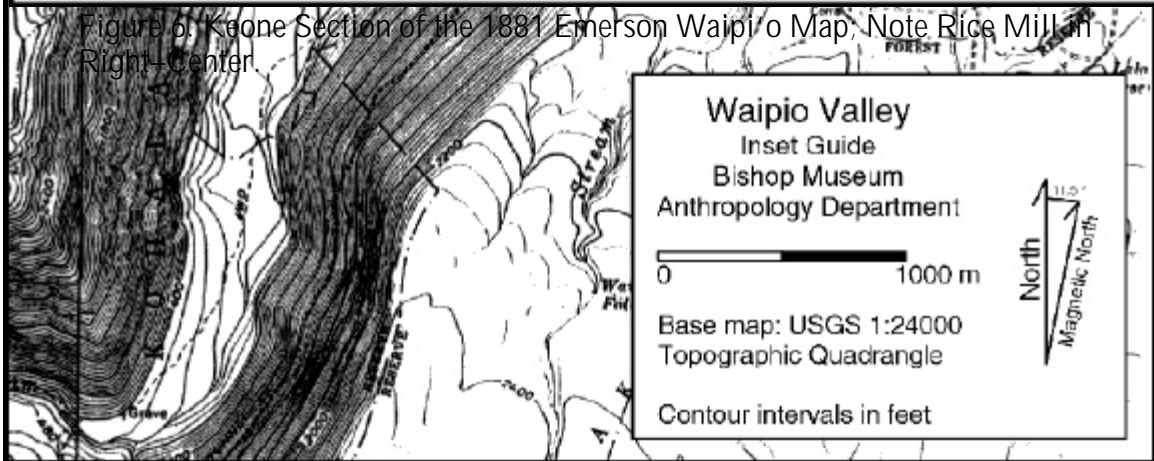


Figure 5. Topographic Map Showing Location of Inset Figures for Waipi'o Valley.

Rice planters are identified in Waipi'o Valley in the business directories available between 1880–1881 and 1942. Rice cultivation covered much of the agricultural floor of the valley in the 1890s and all of the lower valley in 1906 (UH Ethnic Studies 1978:C–24, C–25). There are no individuals listed as rice planters after 1914, when rice production, as in other areas of Hawai'i, declined in Waipi'o (Armstrong and Lewis 1970). Oral interviews with Nelson Ah Hoy Chun⁵ reveal that he produced the last crop of rice in the valley about 1928. Like Chun, many rice farmers converted to kalo farming. In addition to competitive pricing for rice from California and the cost

⁵ For oral interviews of Nelson Ah Hoy Chun, see Char and Char (1983:90–91) and Kodama–Nishimoto et al (1984: 19–21). Additional interview information from Nelson Chun is available in UH Ethnic Studies (1978).

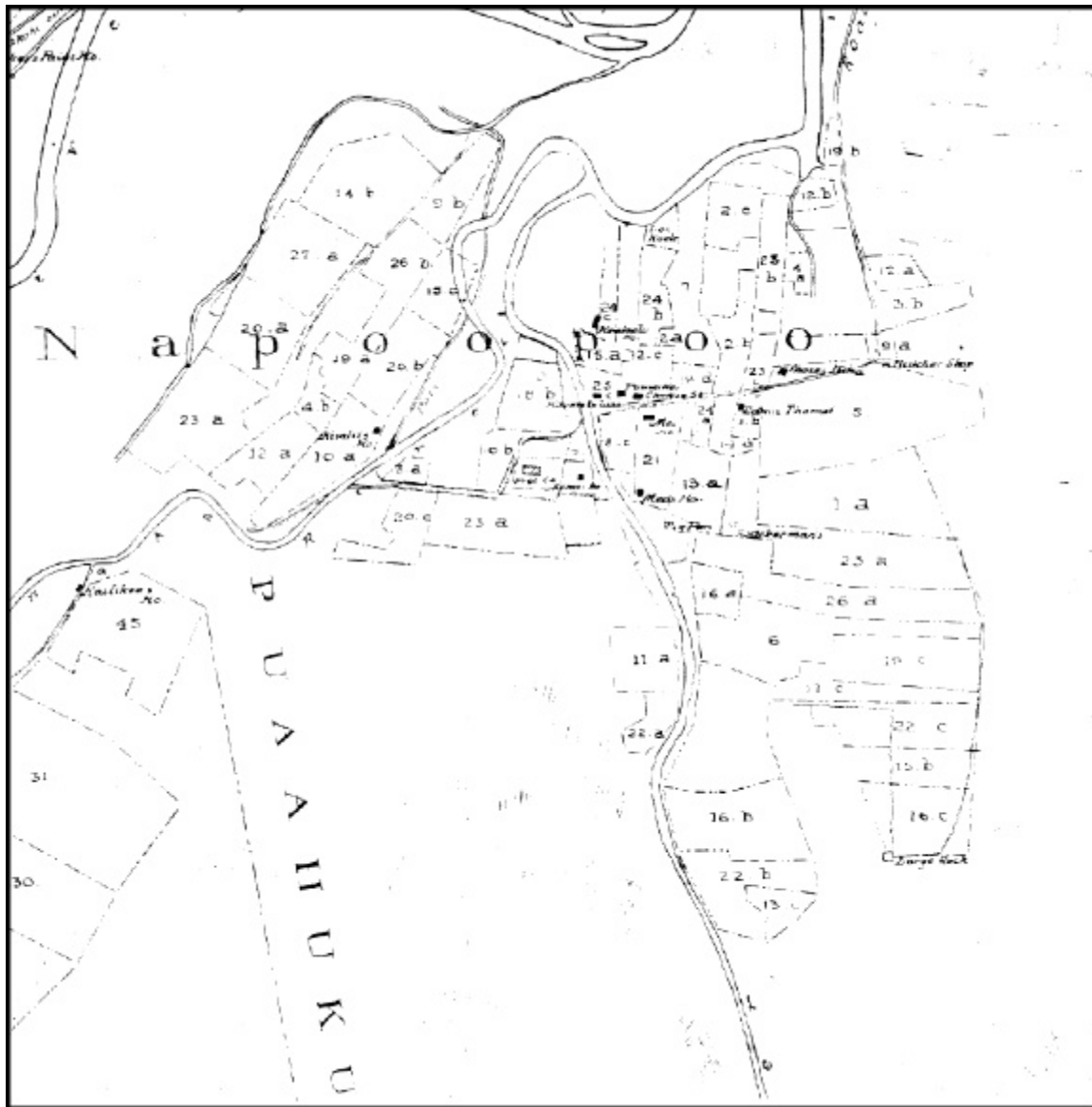


Figure 7. Nāpo'opo'o Section of the 1881 Emerson Waipi'o Map.

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alley, natural disasters such as floods produced unrecoverable losses which made rice agriculture unprofitable. Other reasons given for the end of rice agriculture in Waipi'o Valley were recounted by Nelson Chun; these included wind and rain and labor intensity. High winds knocked seeds off the rice plants and rains made it difficult to harvest rice at an efficient rate. Rice planting also required both plowing and harrowing, but with kalo only harrowing was involved. Cheaper prices

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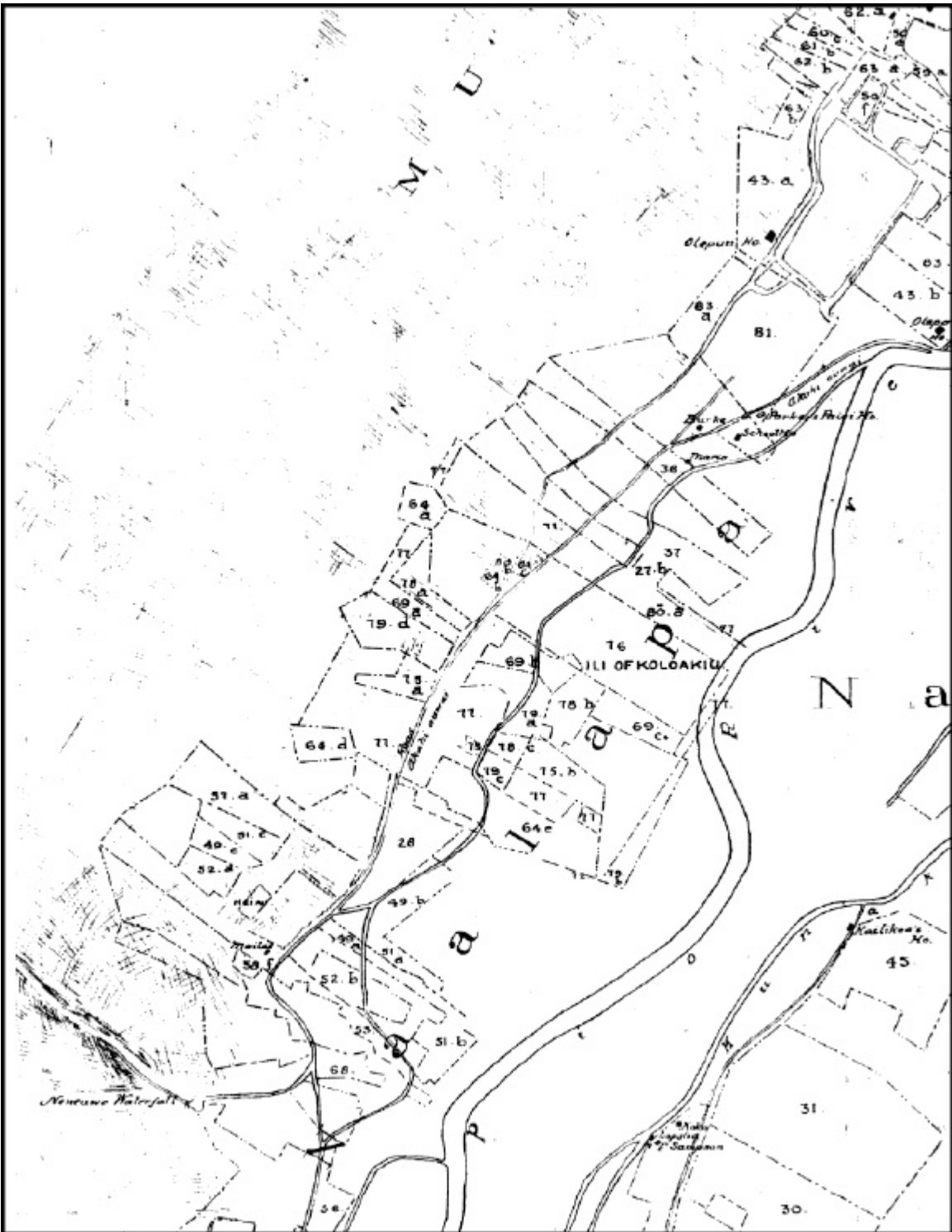


Figure 8. Na'alapa Section of the 1881 Emerson Waipi'o Map.

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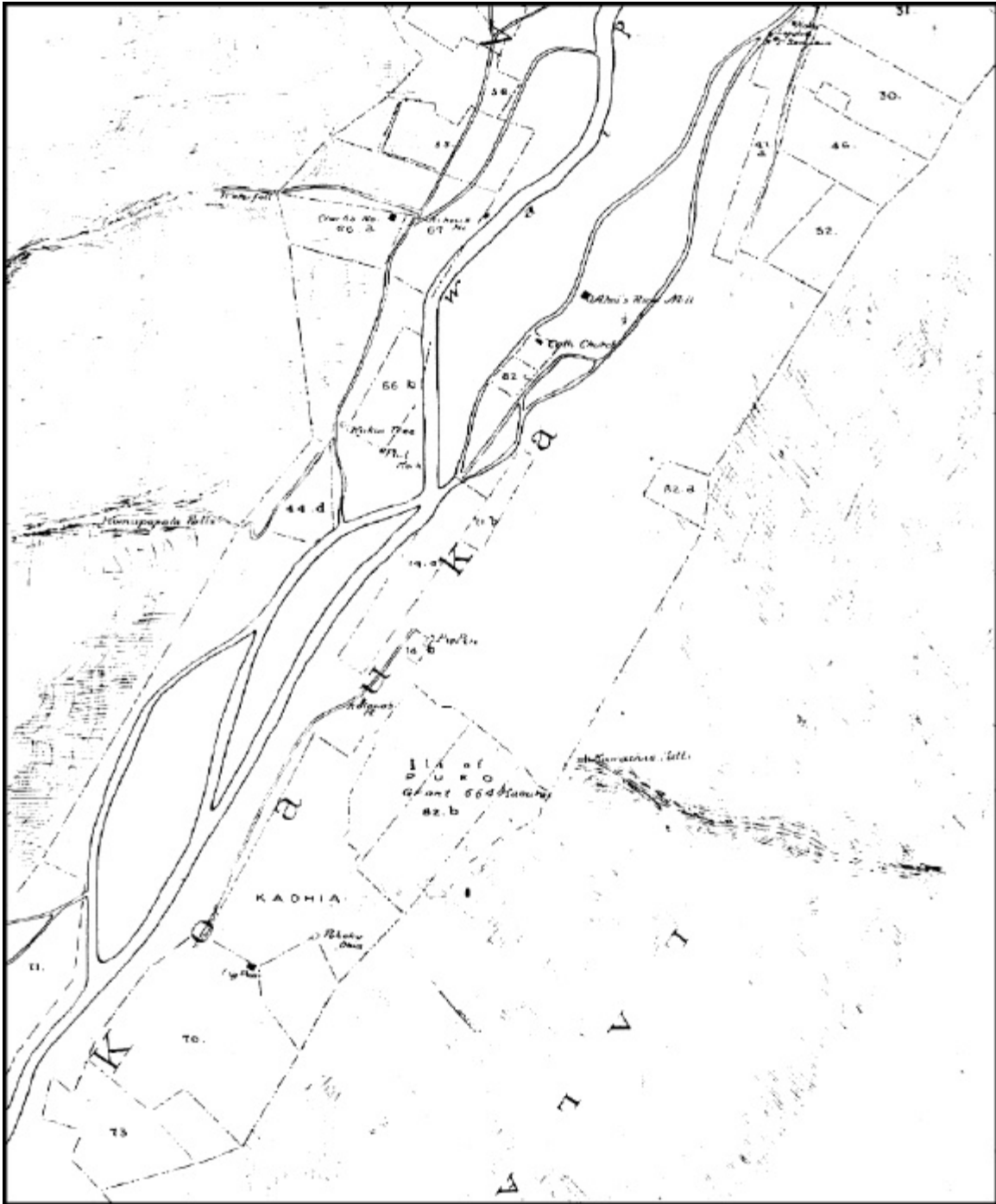


Figure 9. Koauka Section of the 1881 Emerson Waipi'o Map. Note Rice Mill in Upper Center.

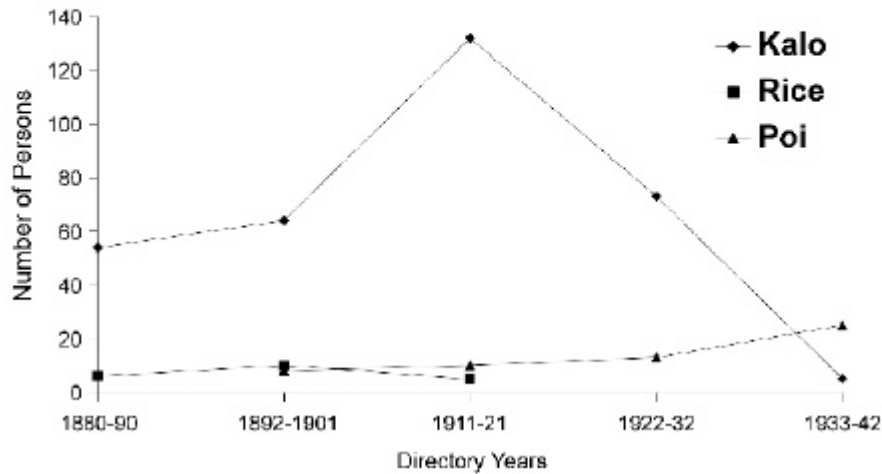


Figure 10. Number of Persons Engaged in Kalo, Rice, and Poi Production in Waipi'o.

Hawaii Business Directories only sporadically list rice planting as an economic pursuit in Waipi'o Valley, even though the coverage for the years 1880–1881 until 1900–1901 is good. In the period up to 1941–1942, seventeen individuals are listed as rice planters, with fourteen listed between 1880–1881 and 1900–1901 (Figure 10). Four of these individuals planted both rice

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and kalo in the same years. The single rice mill owner identified in the directories is an individual named L. A. Akaka, who also had a general store in Waipi'o Valley⁶. According to Nelson Chun, Akaka is a Hawaiianized name given to a Chinese man named Leong Kut or Gut. Prior to 1912, Akaka is listed in the directories as a rice planter⁷. Akaka also managed the Hui Nui for which many of the valley rice farmers worked. There is some indication that the rice mill may have been constructed between the late 1890s and 1898 (Char and Char 1983:90–91). Akaka's general merchandise store is listed in the 1900–1901 directory and Akaka is also listed as an Ah Chiu manager for this year. He was identified by some as having been a poi factory owner (UH Ethnic Studies 1978:C–15), but is not listed this way in the Hawaii Business Directories.

Although fewer in number than the Chinese, some Hawaiians farmed rice on their small parcels (UH Ethnic Studies 1978:119). Nelson Chun recalled that in the early 1900s, Akaka's water-powered rice mill was the only one operating in the area. It was fed by a flume, which was constructed to provide water to the ditch, the mill, and four poi factories. The flume provided water from Hi'ilawe Stream in the interior of the valley (UH Ethnic Studies 1978:132, 244, 601). The mill is shown on LCA 10782 in Nāpo'opo'o on the 1914 map of Waipi'o Valley prepared by G. F. Wright, surveyor for Bishop Estate (Figure 11); the valley is shown in three sections: makai, middle, and mauka.⁸

Nāpo'opo'o is in the makai section of Waipi'o Valley. Features illustrated on these map sections include parcels under rice cultivation, rice floors, kalo cultivation, and structures such as schools, churches, dwellings, and businesses, as well as cemeteries, heiau, bridges, trails, and streams. Labeled structures include poi factories, a rice mill, a motel, a blacksmith shop, pig pens, a stable, and dwellings. Some structures, thought to be dwellings, are unlabeled. Of the lands, different colors are used to indicate "inferior land," "hillside," "rice and taro," "purchased LCA," and "arable land," as well as "roads and trails" and "streams, auwai, and ponds." Of these lands, parcels under "rice or taro" cultivation were studied by Woo and Murray (1994).

⁶ Directory listings for the Akaka rice mill include the years 1912 and 1914.

⁷ Hawaii Business Directory for 1900–1901.

⁸ The makai and middle sections are approximately 4 ½' by 5', while the mauka section is about half the size of the other two map sections. The original colorized version of G. F. Wright's Waipi'o maps are on file at Kamehameha Schools, Bishop Estate, King Street, Honolulu.

Woo and Murray summarized four types of data from Wright's Waipi'o Valley maps: rice lands, rice floors, kalo or kalo lands, and structures. No data were provided on the actual number of farmers for rice or kalo, but individual parcels are shown. Their study indicates that rice farming was limited to the makai portion of the valley by 1914; no rice lands are identified for the middle or mauka sections. A total of 134 acres were under rice cultivation. Rice fields ranged from 0.25 acres to 24.2 acres. Only four of 34 parcels were over 4.0 acres in size.

In contrast to rice acreage, only 57.47 acres were used for kalo farming. Of the kalo fields, 37.01 acres were in the makai valley area, 19.31 in the middle, and 1.15 acres in the mauka section of the valley. Twenty-three kalo parcels were identified for the makai section, ranging from 0.20 to 5.75 acres. Of these, only three parcels were larger than 4.0 acres. In the middle section, the 14 parcels ranged from 0.10 to 5.9 acres. Only two of these were greater than 4.0 acres in size. The two kalo parcels in the mauka valley section were each less than 1 acre.

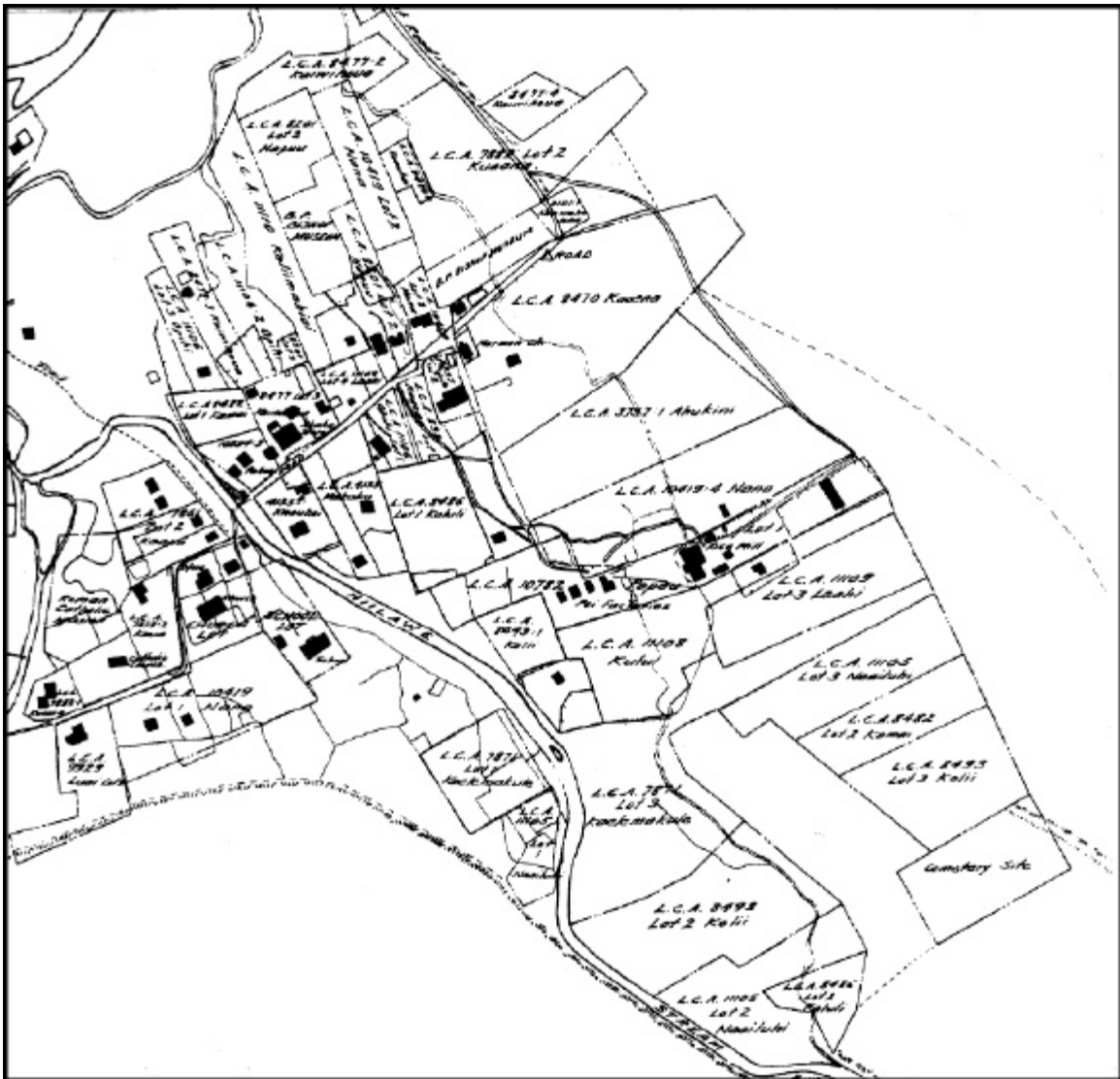


Figure 11. Close-up of the Napo'opo'o Section of the 1914 Wright Waipi'o Map.

Eleven rice floors, areas used for spreading rice out to dry, were identified in the makai valley section. Another two rice floors were in the middle valley section. Nelson Chun recalled that rice was grown in lower Waipi'o Valley, while kalo was grown just below the Chinese temple to the upper valley reaches (UH Ethnic Studies 1978:152). Napo'opo'o was situated within the region where rice and kalo cultivation and mill production overlapped.

No rice planters are identified after 1912 even though the last crop of rice in the valley was in 1928. Additional data on rice cultivation and rice planters is available from the oral histories conducted by the University of Hawai'i at Mānoa (UH Ethnic Studies 1978).

KALO

Kalo was always a mainstay of the diet of many local residents in Waipi'o Valley. Kalo in the lo'i were fed by ditches that diverted the water from nearby lo'i or the streams at higher elevations. Lo'i were cultivated and harvested by residents in the valley, as well as by individuals or families that lived "up top" or out of the valley. Seiko Kaneshiro recalled that his family owned a store and lived in Kukuihaele, while working a small kalo patch in Waipi'o (UH Ethnic Studies:730). Similar mentions of kalo farming by individuals living "up top" serves to emphasize how strongly individuals and families in the region were tied to kalo farming and Waipi'o Valley, whether they lived there full-time, part-time, or simply worked land there.

More than 300 varieties of kalo have been grown in Hawai'i at some time in the past.⁹ In 1933, about 32 varieties of Hawaiian kalo and 15 varieties of Japanese kalo were thought to be cultivated in Hawai'i (Allen and Allen 1933:4). Among the varieties of kalo grown in Waipi'o are: 'äpi'i, lehua, and uaua; George Farm grew 'äpi'i and lehua, while Ted Kaaekuahiwi's family grew 'äpi'i, lehua, and uaua.

Kalo varieties differ in desirability, whether in growing season, taste, texture, or color. John Loo recalled that his father had several kalo patches. He grew different varieties in each patch; the different varieties had different growing requirements. Others indicated that variety was less important than the quality. Waterlogged kalo was less desirable, as were types that tended to rot quickly. Later, disease impacted kalo planting choices and techniques, as well as availability and prices. Kalo variety and quality also affected price, as did preferences among customers and shops (UH Ethnic Studies 1978:98, 107-8, 181, 341-2, 366, 402, 789).

Some in Waipi'o raised kalo for their own use, while others grew it for sale to poi mills or worked for kalo planters. For example, Ted Kaaekuahiwi, born in Waipi'o in 1928, recalled that his father was the principal of the Waipio elementary school and that his family raised kalo for their own use on their three acres (UH Ethnic Studies 1978:400). Families residing "up top" also raised kalo on small parcels in the valley. Some of these families may have previously resided in the valley. Many Chinese involved in kalo farming were single men who worked for major kalo farmers or poi manufacturers in Waipi'o. They planted, harvested, cleaned the fields, packed kalo to the factories, or worked in the factories or poi shops. Araki remembered paying laborers harvesting kalo 25 cents a bag (averaging 100 pounds) in the 1940s or 1950s. Each bag was tagged so that when it arrived at the poi factory it was possible to track whose kalo it was (UH Ethnic Studies 1978:50).

⁹ See Handy (1940), MacCaughy and Emerson (1913: 186-193, 225-231, 280-288, 315-323, 349-358, 371-375, and Wang (1983) for details.

Between 1880–1881 and 1941–1942, there are 154 residents of Waipi'o Valley identified as kalo planters. The majority (81.8%; n=126) are recorded for a period of only one to two years but an unknown number of these individuals may have begun farming prior to the 1880–1881 directory; for some years, census takers failed to distinguish among those cultivating rice and kalo, identifying most simply as "farmer" or "laborer." Individuals identified as kalo "planters" over a three to six year period represent 13.7% (n=4) of all listings for kalo planters, while those engaged as kalo planters for seven to eight years represent 2.7% (n=4). One individual each is recorded in the directories for totals of ten, eleven, and fourteen years (1.8%; n=3). These periods of time are not necessarily sequential years, but represent the total number of years that an individual is listed (Figure 12).

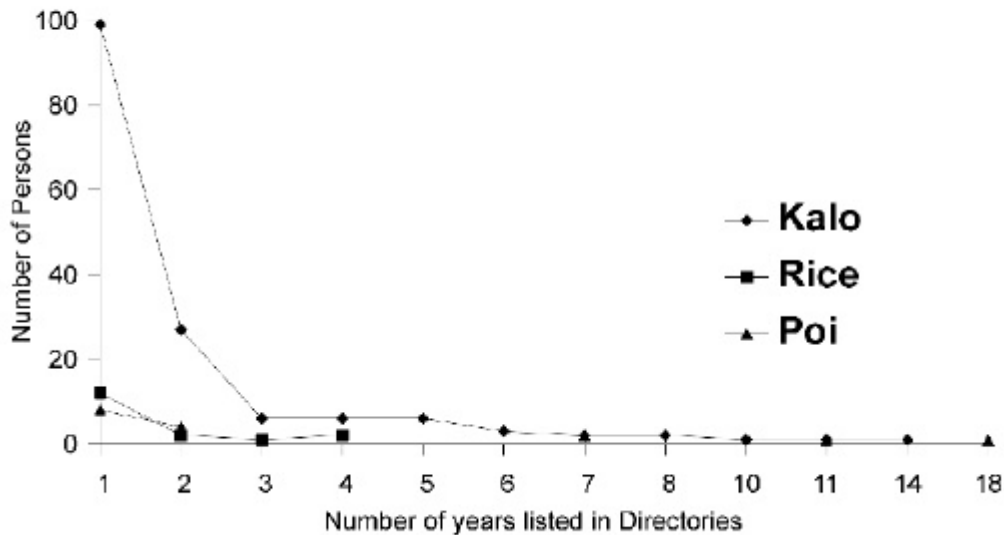
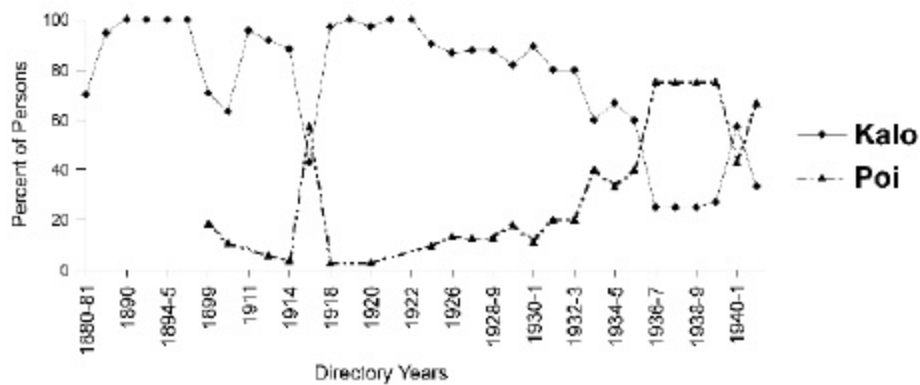


Figure 12. Years Persons are Listed in the Directories for Certain Occupations.

percentage of individuals identified as "taro planters" in any one year fluctuates throughout the

The number and

1880–1942 period (Figure 13)¹⁰. These figures reflect multiple factors including localized natural disasters such as floods (see Käne 1994:26). The number of absentee landowners or farmers who resided “up top” and therefore were not included in these figures remains unknown. It is clear that despite the decades when rice was also planted in the valley and fewer acres were being planted in kalo, most individual farmers planted kalo.



In Figure 13. Percentage of Persons Engaged in Kalo and Poi Production. S O
m e

years, such as 1890, several individuals are listed as laborers. Some of these people may have been employed in rice fields owned by individuals not reported by the census takers. In the 1911 directory, W. G. Saffery is identified as a manager of the Lau Taro Co., while L. Akaka managed the Waipio Rice Mill. Individuals involved in cultivation in 1912 include 32 farmers, a rice planter, and two laborers; a comparison of names with other years indicates many of the farmers were kalo planters. Lau Kong is reported as having a general store, while L. A. Akaka owned both a general store and a rice mill. Mika Kalehuawehe and Mock Chew are identified as poi manufacturers.

The directory data for 1914 are quite interesting because no individuals are identified as rice planters even though rice cultivation was shown as including considerably more acreage and food production than kalo by G. F. Wright on his maps of Waipi’o Valley (Woo and Murray 1994). Ten individuals are listed as kalo planters, twelve are recorded under the generic heading “farmer,” and two are laborers. This suggests that some rice planters may be included under the general term of

¹⁰ There is a gap in the directories between 1900–1901 and 1911.

"farmer" and that others may be unreported because they were overlooked in the census, they resided outside Waipi'o Valley, or that fields were changed over from rice to kalo after Wright gathered data for his map; this latter possibility may reflect a lag between when the survey began and its completion. Akaka's rice mill is still listed in the 1914 directory and is shown on the 1914 map, but is not in the subsequent directory for 1916.

Agricultural pursuits listed for the 1916–1942 period are kalo planters, kalo farmers, generic occupations of "farmer" or "laborer," and poi manufacturers. Numerous poi manufacturers are identified for 1917. Kalo continued to increase in commercial significance as rice fields were converted to kalo cultivation over time. The number of fields brought into kalo production increased at least as late as the 1930s. For example, Handy and Handy (1995:533) remarked that more terraces were planted in kalo in 1935 than in 1931. The last person listed as a kalo planter is in the 1934–1935 directory, although we know that kalo was grown later than this because poi manufacture is listed in the directories until 1942.

POI

Poi was the mainstay of the Hawaiian diet in the valley from ancient times and its manufacture eventually became an important economic pursuit in Waipi'o¹¹. Based on the directories and the ethnographic/historical data we know that production within the valley can be divided into two periods—a time when the majority of poi was produced by traditional methods for home use and a time when poi production was a commercial enterprise. Even after the introduction of commercial poi manufacturing, hand pounded poi was preferred (UH Ethnic Studies 1978:255). Sometime during the first half of the twentieth century, the making of poi at home became too expensive for many families and they began to purchase their poi from factories.

Large wooden poi boards, on which two people pounded, were common in households and in the early twentieth-century poi factories (e.g., Akioka) in Waipi'o (Käne 1994; UH Ethnic Studies 1978:251, 400). Some families had several poi boards. Albert Kalani, born in 1908, recalled that he and his wife's family made their own poi using poi boards and poi pounders. Their board was made of 'öhi'a wood. John Loo's grandfather used a poi pounder to make poi for the family. Grinders later replaced poi boards in some homes (UH Ethnic Studies 1978:341, 658, 785).

The making of poi was a family undertaking. Women and children peeled kalo and assisted in pounding poi. Water was used to continually wet the poi pounder to prevent the kalo paste from

¹¹ The poi industry in Hawai'i and Waipi'o Valley has been briefly discussed in various sources (e.g., Char and Char 1983:86–87; Käne 1994:7; Pollock 1992:37, 99, 167; UH Ethnic Studies 1978).

adhering to the stone. The poi was placed in crocks or wooden barrels. Crocks were preferable because they were easier to clean (UH Ethnic Studies 1978: 251, 400–403, 663).

Kalo varieties were generally not mixed in making poi. Some people reported that 'ulu was mixed by some in the valley with kalo. Käne stated that mixed poi of this type was made in Puna, but not in Waipi'o, but David Makaioi recalled his family made 'ulu poi, while Ted Kaaekuahiwi said his family mixed kalo and 'ulu in making poi (Käne 1994:7; UH Ethnic Studies 1978: 402–403, 844).

A type of hard poi called pa'i'ai or 'ai pa'a has a long history of being produced in the Valley¹². Albert Kalani recalled pa'i'ai being made at the Akioka poi factory. He described pa'i'ai is a poi paste made of flour and poi, which was wrapped in a ki leaf and eaten. Cornstarch was used as a substitute when flour was not readily available (UH Ethnic Studies 1978:661–663). Pa'i'ai, traditionally made without flour, is cooked kalo corms pressed together in ki leaves, which undergoes little fermentation, but with the addition of water and a period of incubation ferments into poi. Pa'i'ai was produced alongside other styles of poi in various commercial factories (Allen and Allen 1933:6, 9). Paniolo at the Parker Ranch reportedly ate pa'i'ai made at the Akioka poi factory (UH Ethnic Studies 1978:661–3). Käne (1994:4) reported that 'ai pa'a or hard poi was furnished to each paniolo with a piece of roasted or dried beef to take with them into the fields and that this custom may be a hangover from ancient times when Hawaiians went into the forests to hew canoes or to Mauna Kea to make stone adzes.

A ready market among the Hawaiian population of Hämäkua for poi from Waipi'o Valley appears to have developed in part because of the steady decrease in the general availability of kalo. This was the result of upland areas having been converted into sugarcane plantations and to the shift in emphasis from kalo to rice in fields in the valleys such as Waipi'o. Käne (1994) recalled that the beginning of the poi industry in Waipi'o began with the manufacture and sale of poi by his father, Herbert Mock "Akioka" Käne (1895–1970), who leased lands in the valley from Hawaiians to grow kalo. The Hawaii Business Directories indicate small-scale poi production dating to the 1890s in the valley.

The earliest directory listings for poi manufacture are Ah Chong or Ah Cong and Ahapa in 1896–1897; the late entries are C (Chang) Ahana and Ernest A. Akioka in 1941–1942 (Table 1). There are sixteen individuals listed in the directories for varying years of poi production from 1880–1881 and 1941–1942.

¹² Waipi'o produced "a great deal more taro than was consumed by its inhabitants. In the form of great rolls of *pa'i'ai* (compact *poi*), quantities of taro processed and ready to be made into soft *poi* were shipped out. The bundles were towed out from shore and transported to Hilo or Kohala, where taro was not very abundant" (Handy, Handy, and Pukui 1991:314–5).

Table 1. Individuals associated with poi production in Waipi'o Valley.

Name	Hawaiian Business Directories	Total years listed*
Ah Chong or Ah Cong	1896–1897, 1899	2
Ahapa	1896–1897, 1899	2
Ah Chock	1899	1
Ah Hop	1899	1
Ah Keona	1900–1901	1
Alika, George	1899, 1900–1901	2
See Lee Co.	1900–1901	1
Mock Chew	1912, 1913, 1916, 1918, 1919, 1920	6
Kalehuawehe, Mika	1912	1
Lum Ho (Hoe)	1917	1
Eno, John Jr.	1917	1
Leong Akona	1917	1
Thomas, Mrs. Charles	1924, 1927	2
Ahana, C. (Chang)	1933–1934, 1934–1935, 1935–1936, 1936–1937, 1937–1938, 1938–1939, 1939–1940	7
Akana, C.K. (Chang K.)	1940–1941	1
Akioka, Ernest (A.)	1924, 1926, 1928–1929, 1929–1930, 1936–1937, 1937–1938, 1938–1939, 1930–1940, 1940–1941, 1941–1942	10

* The total number of years listed represents a minimum number of years that the individual engaged in poi manufacture.

Early poi production in many late nineteenth or early twentieth-century factories involved traditional hand pounding of kalo with stone poi pounders and wooden poi boards. Nelson Chun recalled that poi was produced in this manner in Waipi'o and sold to the Parker Ranch (UH Ethnic Studies 1978:213). By 1933, most of the O'ahu factories used machine grinding, but possible improvements in the poi industry were also noted:

“. . . hand crushing and hand grinding of the taro are not uncommon. The latter method of preparation seems to have many unsanitary aspects. . . Steaming, peeling, washing, crushing and the other preparations of taro usually take place in a very small area. A division of the average factory into several rooms for development of the various stages of the poi making process would serve not only to increase the efficiency of the workmen, but also to improve the general appearance of the plant.”
Allen and Allen (1933:27–8)

The small poi factories in Waipi‘o were not elaborate. Kalo was cooked and then hand pounded in a big wooden box with an iron bottom. The box was air tight and the heat was provided by firewood gathered from the hillsides (Kāne 1994:8; UH Ethnic Studies 215). Nelson Chun recalled that while the majority of the individuals working in the lo‘i kalo were Chinese, lots of Hawaiians pounded poi. He remembered one Hawaiian man still working in Akioka’s poi factory after traditional pounding was replaced by a grinding machine. Kāne (1994:8) recalled that his father also hired individuals to pound poi in a traditional manner. When labor became hard to get¹³ and after hearing of the successful use of a sausage grinder and grist mill in a Honolulu poi factory, his father bought a water–powered grist mill for his factory. Later, he purchased a kerosene engine.

Leslie Chang reported that his family used a Model–T truck engine to operate the poi grinder in their factory and, because it did not work reliably, they replaced it with a gear engine; instead of removing the engine and placing it in the factory, a garage was built to house the truck and a pulley was attached to the rear wheel. An engine was purchased from Sears Roebuck in the late 1930s (UH Ethnic Studies 1978:100).

Factories produced poi by first cooking, peeling, and grinding or pounding the kalo corms. The crushed product was then incubated and fermented. This mass was steamed until the interior of the corms changed from white to dark purple in color, depending on the variety of kalo. After the kalo was cooked, it was cooled with water which removed any remaining soil. The cooled kalo was then washed, peeled, trimmed, and scraped, and the corms were pounded or ground and mixed with water to produce fresh poi (Allen and Allen 1933:6).

A law regulating poi manufacturing was passed in 1911 as Act 77 in Section 3 of the Session Laws and revised in 1925. This law was designed to regulate poi quality and production. Poi was to be manufactured only in shops meeting stringent state requirements for construction and sanitation. Stipulations included:

¹³ We do not know how early the labor shortage began because there is a gap in the business directories from 1901 to 1911 and therefore we could not trace a decrease in the number of “laborers” in the valley during this time.

"Every such shop or building shall be laid with cement floors, with cement walls to a height of at least two feet and draining to a trap connected with a cesspool, sewer, or such other means for the proper disposal of drainage, as may be approved by the board of health. No such shop or building shall be maintained, used or operated in any place where there is not available an adequate supply of water. . . . No such shop or building shall be maintained, used or operated for any other purpose than the manufacture of poi or paiai . . ." (Allen and Allen 1933:9).

Even after the passage of Act 77, some poi continued to be produced for sale on farms. Among these was the Charles K. Thomas poi factory on his dwelling site. It operated into the early 1920s and was sold by his widow in 1923 (Bureau of Conveyances 658:361).

The Akana (Leslie Chang), Mock Chew, Mock Chock (Akioka), and Lum Hoe poi factories in Nāpo'opo'o were on LCA 10782, Lot 1 (Wright 1914).¹⁴ They reportedly were established here in compliance with Act 77 and the Board of Health. Prior to this, poi was produced on individual farms (UH Ethnic Studies 1978:214). Fresh water was supplied by a flume from Hi'ilawe Stream and water wheels were used to power the factories. Later, engines were employed. Each building had a concrete foundation (UH Ethnic Studies 1978:244, 601). They were sufficiently removed from any "stable, laundry, abattoir or other place at which any business or process" might be carried out that conceivably may have served as a source of "contamination or infection to the poi or paiai manufactured thereat" (Allen and Allen 1933:9).

The number of individuals engaged in poi production in Waipi'o Valley fluctuated between one and five but seems to have been fairly consistent between one and three. The commercial production of poi appears to have been primarily controlled by a handful of producers (Table 2). One interesting aspect of the directories is that poi continues to be listed into 1941–1942 after kalo planting is no longer listed as an occupation.

¹⁴ LCA 10782 was initially awarded to Paupau (see Appendix A).

Table 2. Individuals identified with poi production in Waipi'o Valley prior to 1942.*

Name	Occupation
Ahana (Chang Hung or Leslie Chang)	Rice and kalo farmer in Waipi'o. He owned a rice mill and later a poi factory (until 1941) and a store (until 1941).
Akaka (Leong Hut)	Rice and kalo farmer, rice mill owner, poi factory owner.
Akioka (Mock Chuck or Mock Chock)	Rice and kalo farmer, rice mill owner, later poi factory.
Lum Ho	Poi factory owner; later operated Puueo Poi factory.
Mock Chew (Mock Ah Chew)	Kalo farmer in Waipi'o, cattle raiser in Waimanu Valley, poi factory owner in Waipi'o

* Identified by informants (UH Ethnic Studies 1978: 214, 222, 243, 343, 395, 848, C-15-C-21).

Nelson Chun and Fannie Duldulao reported that the largest poi producer was Akioka, while Lum Ho reportedly was the smallest (UH Ethnic Studies 1978:214, 243). The Ahana, Akana, and Akioka poi factories continued operating after 1940 (see Table 1). George Farm, interviewed in 1978, reported working at Mock Chew's factory in the 1950s. After he quit, the business dwindled and later ceased (UH Ethnic Studies 1978:343). A 1978 photo of the abandoned Mock Chew factory reveals it was a large frame building with vertical exterior planking (UH Ethnic Studies 1978:Figure 44).

Akana, Akioka, and the other factories in Waipi'o shipped poi to destinations "up top" and to other islands. The poi was placed in bags, which were wetted to keep it damp. The bags were wrapped in ki leaves and the leaves were tied with sisal, which was grown in the valley and made into cordage. The tied poi bags were then placed in burlap bags, some of which previously were used as rice bags, for loading onto mules or horses, and later onto trucks. Some of the rice, flour, or other bags used for poi were cut into different sizes, depending on the amount of poi families wished to purchase. The bags were sewn, washed, filled with poi, and delivered. Families returned the bags when the next poi purchase was delivered (UH Ethnic Studies 95, 101, 245-6, 254, 605).

Poi was delivered to homes, as well as stores along the route to the poi factories outside Waipi'o. Families paid for poi in cash or with chickens, goats, sheep, or other goods. Stores had accounts. Packers would announce that they were going to deliver poi in an area and ask who wished to purchase some. People would place orders; some were regular customers (UH Ethnic Studies 1978:91, 94, 601).

Many Chinese, who came to the valley as single men, hired on as workers in the fields or in producing poi in the factories. Some Hawaiians, Filipinos, and Japanese also carried out these

activities. Albert Kalani, as a Hawaiian youth, worked for Akioka. He recalled pulling kalo and delivering it to the poi factory on Monday, delivering poi to Waimea on Tuesday, working in the fields again on Wednesday, the factory on Thursday, and delivering again on Friday. Kalo was carried from the field in bundles held with lau hala rope and carried on a shoulder stick in Chinese fashion. The bundles were packed on mules and taken to the poi factory. This method was replaced by putting the pulled kalo in bags, taking it to the factory, and cooking the kalo in the bags (UH Ethnic Studies 1978: 174, 597, 599–600).

Women, many of them Hawaiian, were hired to clean kalo. Men often did the heavy work. Fannie Duldulao remembered her mother peeling kalo in the poi factories two days a week; she worked for both Akioka and Chang. Kalo was cleaned or peeled on the floor using a niu shell. Butter knives also were used, but were poor implements for peeling. They steamed kalo using a large wooden container with heavy steel or iron underneath and fueled by wood. Others reported men cooking and cleaning kalo, after which it was ground and packaged in bags (UH Ethnic Studies 1978: 101, 174, 243, 247–8, 597–8, 845).

Packers were men hired by middlemen to transport the bags of kalo or poi to customer's homes or to various factories outside the valley. Middlemen acted as agents between the growers and the factory owners. Among these were Seiko Kaneshiro's father, Nelson Chun, Leslie Chang, Akioka, and [Ginji] Araki. Seiko's father was an agent beginning in the 1940s. He purchased kalo and sold it to poi factories outside the valley. Leslie Chang recalled that Akioka had his poi packed by mules, his family took theirs by mule up the hill to Kukuihaele and then by truck. Akioka and Nelson Chun served as agents in the 1930s and sold surplus poi to factories such as Oahu Poi, See Wo Poi, and factories on Molokai. Ginji Araki moved to Waipi'o in the mid-1930s and started kalo farming. He was an agent for several poi factories, including Honolulu Poi, Kalihi Poi, and Waiahole Poi. He organized the first kalo farmer's cooperative in the 1950s. Nelson Chun was one of the first to ship kalo out of the valley to poi factories. This happened only after 1940 when the poi factories in Waipi'o could not take all of the local kalo and a steady market developed outside the valley (UH Ethnic Studies 1978:33, 37, 41, 50, 93, 99, 106, 441–2, 732, 791).

Many of the men hired to work in the kalo fields, the poi factories, or as poi packers, lived in worker's camps or housing. Mock Chew had two camps: a Filipino camp and a Chinese camp. A few Japanese also worked for Mock Chew. The workers raised some food, including pigs and caught fish; Mock Chew had a large fishpond. They did not catch ocean fish, which was done by Hawaiians, some using nets. Fish were also caught in the ditch that supplied water to the fishpond and the fields. Leslie Chang recalled that his family's workers lived in houses they provided behind their store (UH Ethnic Studies 1978:96, 303, 328–9, 336).

Akioka (Mock Chock) leased land for growing kalo, which was pounded into poi and delivered to Hämäkua and Waimea (Käne 1994:6). He employed a steady number of Chinese to plant, tend, harvest, and process kalo into poi. Akioka provided “a bunkhouse for the workers, a cook house separate from our house, the poi factory, a storehouse, a stable for the mules and horses, our house—the only two storey [sic] structure, chicken coops and duck pens—in all, about eight separate buildings in the compound” (Käne 1994:7). Ted Kaaekuahiwi supported this, indicating that the single workers lived in a house provided by Akioka, which had been divided into rooms. Food was prepared by the family in a big kitchen for the workers (UH Ethnic Studies 1978:406, 604).

Albert Kalani reported that he quit working for Akioka after he sold the poi factory in the late 1930s. He worked part-time for several years after that for Ahana. He delivered poi by truck from Ahana’s poi factory in Waipi’o to his shop in Hilo; trucks could not easily travel into and out of the valley. Ted Kaaekuahiwi reported having a contract to pull kalo for Ahana in the 1940s and to oversee his kalo fields. He had a second contract with Seiko Kaneshiro’s father to pack kalo out of the valley and to weed five kalo fields (UH Ethnic Studies 1978:437–40, 604–5).

The Ahana (Leslie Chang) poi factory was severely impacted in the 1941 flood. After the flood, they were unable to get water, and the engine room was damaged. Only the manufacturing and cooking rooms remained. The Puueo Poi factory, which was for sale, was purchased by the family and they moved to Hilo. The factory in Waipi’o was abandoned. Some of the equipment was later taken by others and the building was left to deteriorate. The Puueo Poi factory continued to purchase kalo from farmers in Waipi’o Valley (UH Ethnic Studies 1978:101–6).

Mock Chew had considerable land under cultivation in Waipi’o Valley. Much of this land, like those of others in the valley, was leased. Many individuals or families that left the valley sold their leases to the poi factory owners. Mock Chew reportedly acquired leases from Akioka and many that returned to China. He operated a poi factory in Waipi’o Valley and started a second one in Hilo, which was operated by his son (UH Ethnic Studies 1978:313–4).

OTHER CROPS IN WAIPI’O VALLEY

It is rare for crops other than kalo and rice to be mentioned in the business directories, however, in the 1884 business directory an individual named Silva is listed as having a peach orchard. The Land Study Bureau (1960:2–3) documents approximately 580 acres in Waipi’o Valley under rice and kalo cultivation in 1902. As of January 1960, agricultural production, based on farmer estimates, had shrunk to about 100 acres of kalo, less than five acres of lotus root, a single two-acre orchard of coffee trees, roughly eleven acres of macadamia trees, and scattered orange trees. Information on crop variety obtained from the directories can be augmented from oral history interviews. For

example, Käne's father (1994:21) recalled that by the time he was born in 1895 virtually all plant foods used by the Chinese had been introduced into the valley. Lotus lily, water chestnuts, buffalo nuts and the si ku (or Indian potato), and watercress were among those that he remembered. He also recalled seeing lai chee and lon gan, the ung nim (star apple), lo quat plum, and Chinese banana.

NON-AGRICULTURAL PURSUITS

There are several additional occupations listed for the years between 1880–1881 and 1942. These include constable, policemen, school teacher, school principal, member of the clergy, surveyor, clerk, business manager, carpenter, timekeeper, mail carrier, postmaster, attorney-at-law, lawyer, and tax assessor and overseer.

The law enforcement and legal professions are represented by seven individuals. The first policemen listed for Waipi'o Valley are Kiha and Kaumelalau in 1884. In 1890, there are four constables listed, including Edwin Thomas, Kaumelalau, Kanoahoanu, and S.N. Kaaeamoku. By 1892/1893 there is only one constable, S.N. Kaaeamoku. Also by 1892/1893, W.A. Mio is the first lawyer to be listed. Mio later became the Attorney-at-Law listed for Waipi'o Valley for the years 1894 to 1897. Charles Kaahiki became a police officer in 1896/1897. By 1911, Charles E. Thomas is the only individual listed as a police officer.

Käne's father (1994:12) recalls that there were three churches in Waipi'o at the time he was living there: a Catholic, Congregational, and a Mormon Church along with a small Chinese Temple. S. Kaili is listed as a clergyman in the 1892/1893 directory. Reverend Father Paul was listed as the pastor of the Catholic Church in 1894/1895 and 1900/1901. After the flood of 1904 the Catholic Church was washed off its foundation near Papala Falls and moved into the village in Waipi'o. Käne last saw it standing in 1922 (Käne 1994:12). A Reverend J..S.A. Lono is listed in 1911 as pastor of St. Paul's Church and in 1920 Solomon Poliahu is listed as a reverend.

WAIPI'O AFTER 1942

Many residents in Waipi'o today look to the valley's rich heritage as a guide to the future. Kalo holds a significant place in this future. In times past, the valley was a "great center of taro cultivation" (Handy, Handy, and Pukui 1991:273). Our brief study of Waipi'o Valley and the people involved in rice and kalo cultivation and the making of poi prior to 1942, reveals the heart and energy the valley's past residents contributed to sustaining its agricultural roots. The importance of this agricultural heritage and our need to understand this past as a foundation for the future cannot be overstated. The cultivation of new kalo crops in long abandoned lo'i and the building of a new poi factory are seen by some as essential to rebuilding the rich agricultural foundations of Hawaiian culture in the valley and its agricultural future.

The historical maps, diaries, business directories, and land documents reveal a complex history of commercial rice and kalo cultivation and a poi industry in the valley beginning around 1880.¹⁵ These valley activities fluctuated in viability over the past century in response to many factors. Among these are declines in the population associated with many Chinese returning to their homeland or the luring away of valley residents by economic opportunities in villages or towns "up top." Floods, tidal waves, droughts, and agricultural pests also severely impacted life in the valley, resulting in still others choosing to leave Waipi'o.

In the early 1940s, students attended a three-room school in the valley. Two stores and a Mormon church remained. The Protestant church was in ruins and the Roman Catholic church was deteriorating. About 200 people lived in valley. Many lo'i had been abandoned and served as pasture for horses. Guava and kukui covered large areas of the middle and mauka valleys, while only about 25% of the makai valley continued to sustain kalo cultivation. After the tsunami of 1946, only fifteen to twenty people remained in Waipi'o (UH Ethnic Studies 1978:C-24-C-32).

Ted Kaaekuahiwi recalled that Genji Araki started a co-op on his land in Waipi'o, which was aimed at improving the prices farmers received for their kalo by removing the middlemen.¹⁶ The co-op sought to raise enough funds through membership, dues, or donations to build a poi factory in the valley. The poi factory was designed by Araki and built by Suei, Araki, Harrison, and

¹⁵ Research was conducted at the archives and library of Bishop Museum, the Hawaii State Library, the Hawaii State Archives, Hamilton Library of University of Hawai'i at Mānoa, the Children's Mission Library, the Hawaii Historical Society, the Bureau of Conveyances and the Surveys Division of the State of Hawaii, and Kamehameha Schools, Bishop Estate.

¹⁶ Additional research is needed to determine exactly when the co-op was established. Informants gave conflicting dates in the 1950s.

Kaaekuahiwi. The building had a concrete foundation, tile works, lumber, an iron roof, and a poi grinder (UH Ethnic Studies 1978:446–466, 569–571). It cost \$100 to join the co–op and members were required to sell all of their crop to the co–op. The co–op took a percentage of the profits. Some left the co–op, which floundered and became too small to sustain. In 1974, an estimated thirty or so farmers cultivated kalo in the valley (UH Ethnic Studies 1978:C–27–32).

RESEARCH THEMES FOR WAIFI'O VALLEY

Historical documents and other archival materials offer us the potential to more completely reconstruct the agricultural systems present in the valley in the last century and earlier in this century. They also can be used to better inform us about the individual people or groups of people who were part of the story of Waipi'o Valley. The next phase of this research project, which will be accomplished by June of 2000, is to more thoroughly examine these historical documents and build a more complete story for the period beginning about the time of the Great Māhele until the 1940s.

We will use several avenues of research to accomplish this goal. Our data base currently includes information from the Hawaii Business Directories available for the years between 1880 and 1942. We will expand on this by examining the land and census records, and follow some of the suggestions mentioned by Cordy (1994:31) that will allow us to develop a better picture of the kalo systems through the use of survey maps, Māhele documents, tax maps, and aerial photographs. For example, the size of individual fields can be determined and the integration of the 'auwai network and the individual fields shown in greater detail. The land and census records will allow us to better reconstruct who was in the valley, their ethnicity, household sizes (single or multiple family, or households with laborers), and provide an informative check on the actual occupations of people living in the valley. Other properties and holdings such as the rice mills and various stores can also be examined and we will be able to determine their actual periods of operation much more clearly. The census records will help us fill in the gaps for the years that are missing in the Hawaii Business Directories.

Two other lines of evidence can be used to build this picture, the poi factories situated outside Waipi'o Valley, but owned and operated by Waipi'o residents or members of their family, and the structural remains of these factories in the valley itself. For example, we may be able to find information about the construction, internal organization, furnishings, and other details for the Waipi'o family owned poi factories outside the valley which will allow us to more accurately reconstruct how the poi factories within the valley looked. A second way to do this is to examine

the sites of the factories within the valley to see what details of their construction we can determine from the structural remains.

Ultimately, we hope to be able to provide a series of "snapshots" of life in the valley over the decades between the Great Māhele and about 1942 or so. Aside from written reports with maps and other figures, much of this information can be stored as "layers" of data in a Geographic Information System (GIS). These layers can be easily reproduced and used in educational packages and as planning tools as Waipi'o Valley residents rebuild and reconstruct the lo'i and 'auwai that once were so extensive in the valley.

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APPENDIX A

Bureau of Conveyance Records

An effort was made to identify chains of title for LCA 10782, Royal Patent 5467, on which the four poi factories in Waipi'o Valley were mapped by G. E. Wright in 1914. A fifth poi factory, on land owned by C. K. Thomas, is also discussed. Transactions are recorded by year and are referenced by Bureau of Conveyance (BC) book and page number (e.g., 208:13).

1848. LCA 10782, Royal Patent 5467, Napo'opo'o, Waipi'o, Hämäkua, Hawai'i, 4.60 acres were acquired by Paupau on October 17, 1848. They are described as 'ili land at Waipi'o, all boundaries are for the konohiki, containing two cultivated patches (Native Testimony 4:190). It was described on February 5, 1848 as a land claim at Papalahaua in Waipi'o. "There are 9 lo'i. Two are at Waipoo in the land of Opihi. 40 lo'i are at Papalinawao in the land of Kaluli. 2 lo'i planted in wauke, 1 mala of mamaki, 2 lots, 1 pig pen, and 1 house lot are there also" (Native Register 8:372).

1865. Kawahamana acquired Paupau's 4.60 acre LCA 10782, Royal Patent 5467 (BC19:208).

1883. Kawahamana and Kamahaiainui conveyed to C. K. Maguire LCA 10782, Royal Patent 5467, 4.60 acres granted to Paupau (BC 91:26).

1898. Charles K. Maguire of Huehue, North Kona, for \$210, conveyed to J. A. Maguire, also of Huehue, 4.60 acres, LCA 10782, Royal Patent 5467 granted to Paupau. This land was previously conveyed by Kawahamana and Kamahaiainui to C. K. Macguire in 1883 (BC 181:193).

1910. J. A. Macguire and his wife, Eliza Macguire conveyed to S. Kaholoaa 1.25 acres of LCA 10782, Royal Patent 5467 for \$1.00 (BC 338:178).

1911. John A. Maguire leased to Akaka the following lands (BC 353:304):

- # LCA 10782, Royal Patent 5467 of Paupau, excluding the portion previously conveyed by J. A. Maguire to Kaholoaa.
- # LCA 3736, Royal Patent 5010, Apana 1 & 2 granted to Wahahane.
- # LCA 8493, Apana 1, 2, & 3 granted to Koli.

1913. Lam Ho conveyed to Thomas Aho for \$100.00 the poi factory and all taro lands in Waipio under lease from L. Wah Chew with all improvements (BC 376:409); Wah Chew may be Mock Chew.

1915. John A. Maguire indentured to W. O. Smith, S. M. Damon, E. F. Bishop, A. F. Judd, A. W. Carter, H. Holmes, and J. M. Dowsett, Trustees of Bernice Pauahi Bishop Museum several parcels (BC 420:134) subject to a lease made by Maguire to Akaka in 1911 (BC 353:304). These parcels are:

- # LCA 10782, Royal Patent 5467 to Paupau, 4.60 acres, except part to S. Kaholoaa by deed, Aug. 6, 1910 (BC 3338:178).
- # LCA 8493, Royal Patent 7489 to Kolii, 5.89 acres.
- # Apana 1 & 2, totaling 2.65 acres of LCA 3736, Royal Patent 5010 granted to Wahakane.

1923. Charles K. Thomas and, wife, Anna Thomas conveyed to W. G. Lawson (BC 658:361) several parcels:

- # LCA 3757, Royal Patent 5238, Apana 1, 4.0 acres.
- # LCA 8470, Royal Patent 5013.
- # 0.61 acres of LCA 8474, Royal Patent deeded to C. K. Thomas in 1920.
- # 0.1 acres of LCA 4906, Royal Patent 8201, which is the dwelling site of Charles K. Thomas, as well as the machinery contained in the poi factory situated on the dwelling site of C. K. Thomas.