

Kukao Heiau: A Glimpse at Mānoa's Past

Historical Research and an Interpretive Master Plan



by
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INTERNATIONAL ARCHAEOLOGICAL RESEARCH INSTITUTE INC.
MARCH 1998

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March 1998

ACKNOWLEDGMENTS

I sincerely thank executive director Cathy Cooke, the board of directors of the Mānoa Valley Cultural Heritage Foundation and the board's museum consultant Barnes Riznik for their time, thoughts, and help on this project. Their enthusiasm for the preservation of Kukao Heiau was infectious, and their belief in the benefits that interpreting the *heiau* will bring to the community was inspiring. Thanks especially to Sam and Mary Cooke for their aloha and Hawaiian hospitality in inviting me into their home, which by serendipity has great personal meaning to my own family. The opportunity to share family photographs was a true joy. Appreciation also to Nathan Nāpōkā for introducing me to this project.

A number of individuals were invited to review the draft historical report and the efforts of Dorothy Barrère, Jim Bartels, Puanani Burgess, Tom Coffman, Chris Conybeare, Agnes Conrad, Keoni Fairbanks, Sam Gon, Dorothy Hazama, Charles Langlas, Daniel Martinez, Deborah Pope, Heidi Schuman, Susan Shaner, Heaton Wrenn, and Martha Yent are much appreciated.

Thanks are also extended to Mānoa residents, Pat Bacon, Beatrice Krauss, Miriam Woolsey Reed, and Mary Judd, who took the time to talk with me about the valley, and to Thomas Woolsey of Roads Photography, who took the aerial photographs of the Cooke residence and Kukao Heiau that appear in this report.

In the IARII office, the help of production manager Joan Clarke and illustrator Roger Blankfein was as always indispensable. David Tuggle and David Welch offered their usual cogent pearls of wisdom. Appreciation is extended to Steve Athens for his review of the draft report and his very concise suggestions regarding pre-human vegetation patterns and Hawaiian settlement in Mānoa.

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INTRODUCTION



Kukaoo Heiau after initial cleaning in 1993 (photograph courtesy of Mary Cooke).

INTRODUCTION

At the request of the Mānoa Valley Cultural Heritage Foundation, International Archaeological Research Institute, Inc. (IARII) has conducted historical research on Kukao¹ Heiau in Mānoa Valley on the island of O‘ahu, as part of a larger project to develop a public interpretive program for the site. The *heiau* is located at 2859 Mānoa Road on a parcel that includes the 1912 residence of Charles Montague Cooke, Jr., which is on the National Register of Historic Places (TMK 2-98-19: 35) (Fig. 1, Photo 1). Two adjacent parcels to the south, recently purchased by the Foundation, provide access to O‘ahu Avenue.

KUKAOO HEIAU

Kukao Heiau is a stone-walled enclosure situated to the southeast of the Cooke residence, on the nose of a small ridge on the western slopes of Mānoa Valley (Fig. 2; Photos 2 and 3). The enclosure measures 14 by 12.5 m, with original walls that ranged from 1.4 to 3.0 m wide and 0.7 to 1.4 m high (the site was reconstructed in 1994). The exterior of the inland wall extends down the side of the steep ridge slope, giving the appearance of a massive facing (Photo 4). An opening in the west corner of the enclosure is 1 m wide. Just to the southeast of the opening inside the enclosure was a rock concentration (including a waterworn cobble) measuring 3.2 by 2.3 m; this concentration was rebuilt as a low oval platform. The interior of the enclosure is a dirt surface with no evidence of stone paving. A detailed description of the site prior to the 1994 reconstruction is presented in Cleghorn and Anderson (1992). A report on the site reconstruction is in preparation (N. Nāpōkā, pers. comm. 1997).

Kukao Heiau is a part of the long ago Hawaiian landscape, linked by legend to a mythical past of *menehune* builders and owl gods, and to a historical past of great chiefs in the centuries just before western contact. Scientific research ties the *heiau* to a spectrum of religious sites that informs on the nature of political and social change in Hawaiian prehistory. Situated on the Cooke estate, Kukao Heiau is also part of a whole that reflects the entire evolution of the Mānoa community.

¹ The name *Kukao* as it appears in written histories and descriptions contains no diacritical marks (macrons or glottals), although an accurate spelling (and therefore translation) would require such grammatical notations. For the purposes of this report, diacritical marks are not used. A discussion of possible spellings and translations is presented in Part I.

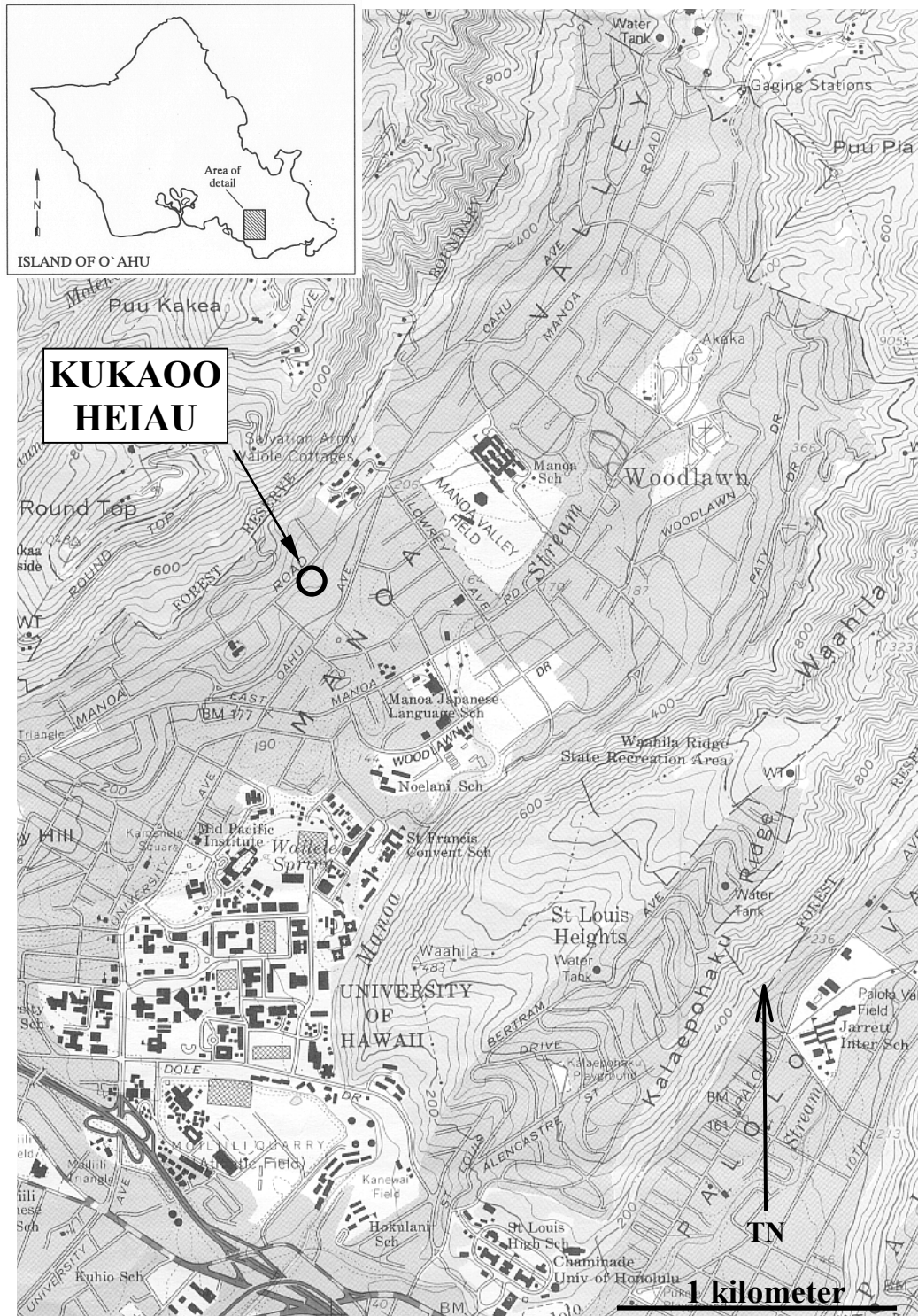


Figure 1. Project location (USGS 7.5 minute topographic quadrangle).

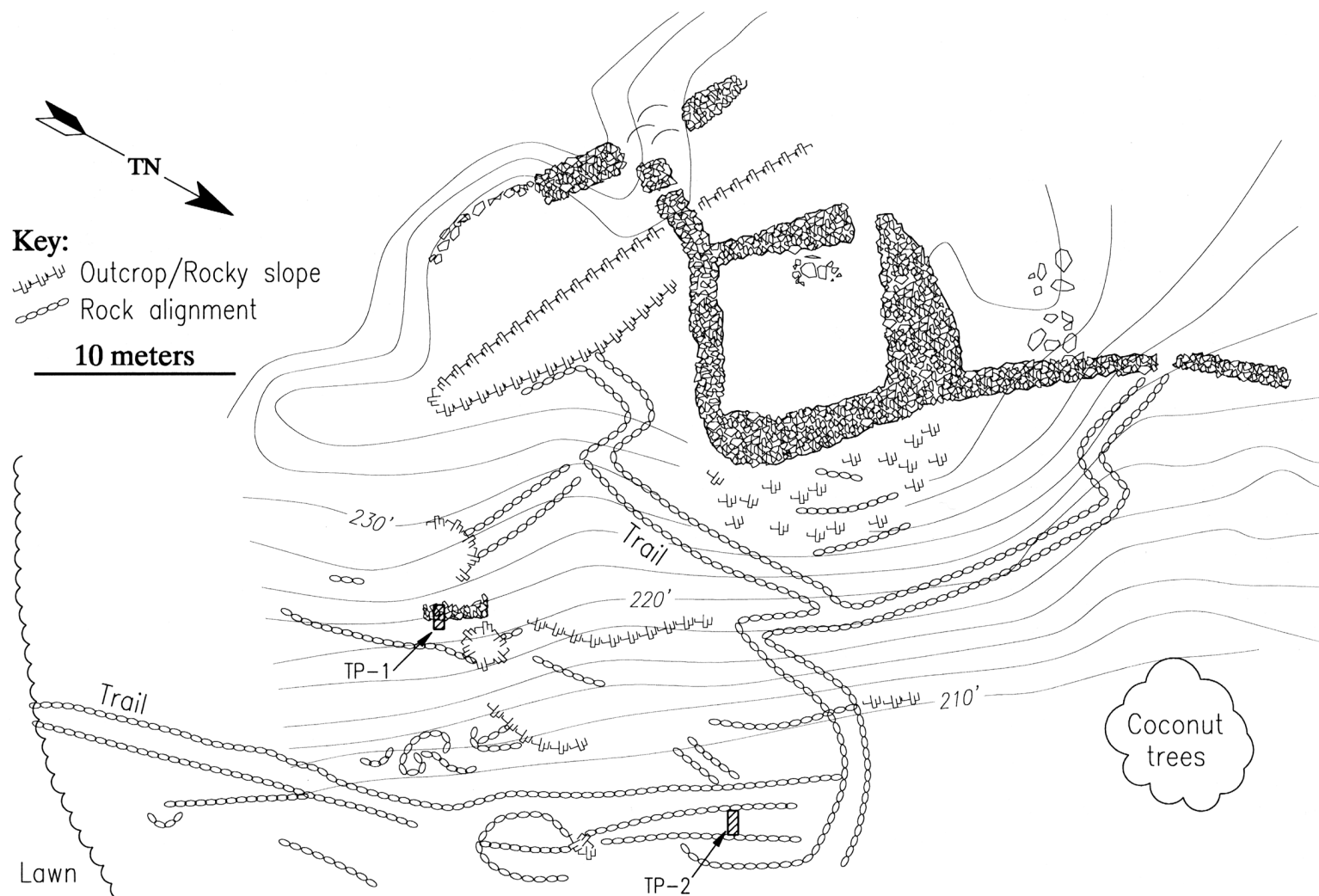


Figure 2. Composite map of Kukaoo Heiau, using data from Kennedy (1991) and Cleghorn and Anderson (1992).



Photo 1. The Cooke residence in 1912, view to north.



Photo 2. Aerial view of Kukao Heiau (photograph by Thomas Woolsey).

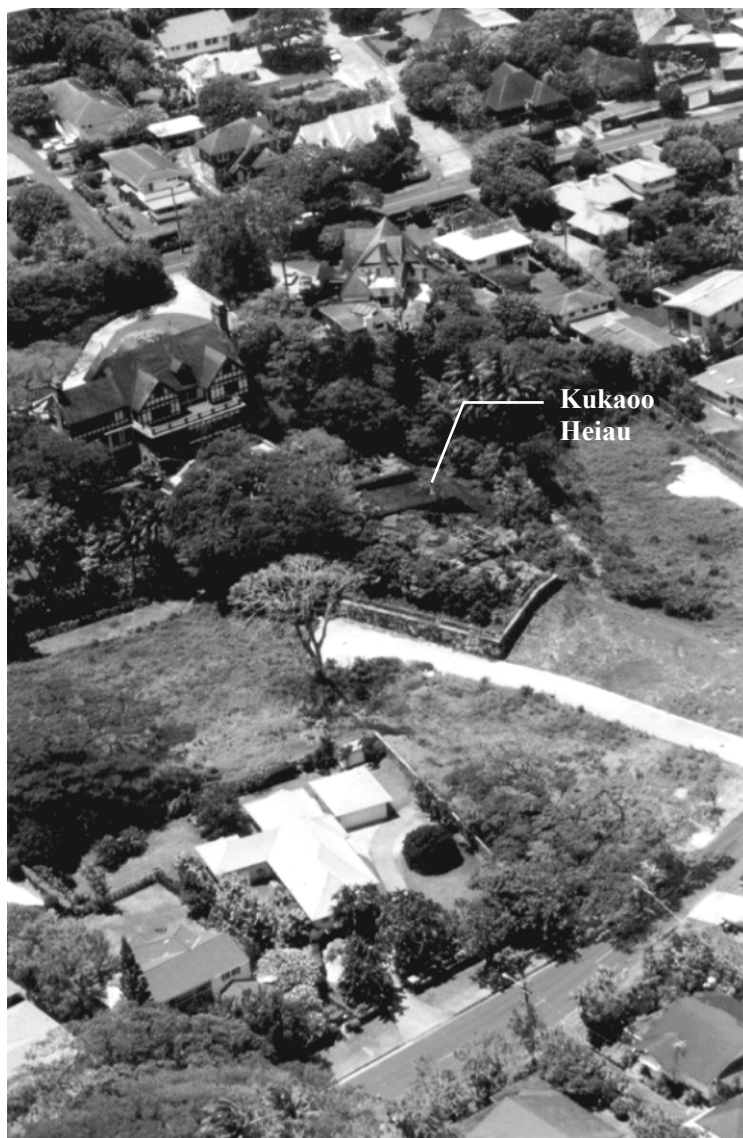


Photo 3. Aerial view of Kukao Heiau, the Cooke residence, and the surrounding neighborhood (photograph by Thomas Woolsey).



Photo 4. Inland face of the *heiau* enclosure (reconstructed in 1994).

Mānoa is the largest of the valleys that form the backdrop to urban Honolulu. It has a multi-layered identity, of which different aspects are significant to different generations of its residents. In the long ago past, the valley was an integral part of a Hawaiian landscape that focused on a chiefly center at Waikiki. In the more recent historical past of the 19th century, it was a cool retreat for the chiefs and wealthier *haole* escaping from the heat of dusty Honolulu town, as well as the site of the labors of industrious Hawaiian, Chinese, and *haole* farmers and dairy men. The 20th century saw the valley evolve into first, a setting of exclusive mansions that were neighbors to Japanese and Chinese truck farms, and then to modern neighborhoods of middle-class subdivisions. The images of Mānoa today have been built on these historical events and figures of the past. Some images are totally exclusive of others, some are a blended mix of community memories.

SCOPE-OF-WORK

The Kukao Heiau project consists of two components: historical research and development of an interpretive master plan. The purpose of the research component of the project was to gather historical, cultural, and archaeological background materials on Kukao Heiau and the general Mānoa area in which it is situated, as a basis for interpreting the *heiau*. The purpose of the interpretive component of the project was to provide a program framework for interpreter-guided public tours of the *heiau*.

The specific tasks of the historical research, for which Part I of the present report constitutes a detailed presentation of results, are as follows:

- Conduct historical and ethnographic background research as appropriate for understanding the cultural and historical setting of Kukao Heiau. The main sources of information are published descriptions of Hawaiian religious sites, syntheses of archaeological studies of Hawaiian *heiau*, and applicable Hawaiian traditions and legends. Historical documents, maps, and photographs were used to inform on land use and settlement in Mānoa Valley.
- Conduct genealogical and biographical research into the life of the chief Kūali'i, who is associated with this *heiau*. The main source of information is the published traditions related to the lives and activities of the great Hawaiian chiefs (e.g., Fornander 1917).
- Compile existing archaeological reports for this Mānoa area.
- Identify individuals who may have information relating to the activities and general context of the *heiau* or who may be interested in the public interpretation of the *heiau*.

- Compile an annotated bibliography of resources that can be used to interpret the role of Kukao Heiau within the Mānoa community (presented in Appendix A).
- Compile a source list of photographic, graphic, and cartographic materials that can be used as illustrations for public interpretation (presented in Appendix A).

Following completion of the historical research, an interpretive plan for Kukao Heiau was developed. The interpretive plan identifies a unifying theme for the tours and proposes and expands on specific topics for interpreter presentation during tours. The interpretive plan component includes the following tasks (which are addressed in Part II of this document):

- Consult with the board of directors of the Mānoa Valley Cultural Heritage Foundation regarding the findings of the historical research in the context of the board's goals and objectives for interpreting the *heiau*; summarize the results of this consultation in terms of an interpretive theme that will guide the overall interpretive program.
- Identify constraints on interpretation of the *heiau* (e.g., potential adverse impacts to the site from visitor access, the potential for alternative interpretations of the *heiau*) and means by which those constraints can be addressed.
- Develop a comprehensive plan for interpreter presentations that presents the historical research results, identifies locations in and around the *heiau* that are appropriate for interpretation and ties these locations to historical subjects, provides selected illustrations that could be used by interpreters during public tours, and anticipates questions that may be posed to docents during public tours.

PROJECT PROCESS

The historical research component of the Kukao Heiau project was carried out between April 8 and June 30, 1997. Research on general historical sources (text, maps, and photographs) was carried out at the State Survey Office, Archives, Bureau of Conveyances, and Tax Office, State library, the Hawaiian-Pacific Collection of the University of Hawai'i Hamilton Library, and the B.P. Bishop Museum Archives. The library and site files of the State Historic Preservation Division (SHPD), Department of Land and Natural Resources (DLNR), and the Bishop Museum Archives were checked for reports of previous archaeological studies within and near the project area.

Interviews that combined elements of both the historical and interpretive tasks were also carried out at this time. Discussions with the Foundation board were held individually and in group meetings, with the intent to solicit individual and communal visions for the interpretation, as well as additional sources of information, particularly names of potential historical informants. Based on these discussions, meetings or phone conversations with four Mānoa community members (Beatrice Krauss, Patricia Bacon, Miriam Woolsey Reed, and Mary Judd) were made. For information on public school protocol for field trips (e.g., class visits to the *heiau*), the principals of Manoa and Noelani Elementary Schools were contacted, as was the Hawaiian language specialist with the State Department of Education.

Preliminary interpretive ideas for Kukaoo Heiau were included in the historical report (Tomonari-Tuggle 1997:43-49), which was submitted to the Mānoa Valley Cultural Heritage Foundation board in July 1997. These ideas highlighted planning issues and identified a process and strategy for implementation. The Board subsequently sent review copies of the historical report to invited community and professional “readers” and sponsored a meeting of the readers at the site on October 26, 1997 to further discuss interpretive ideas and issues. Comments from the readers as well as the Foundation board, and a notice to proceed with the interpretive plan were provided to IARII in November 1997. Final review comments were received in March 1998 and the interpretive plan was completed shortly thereafter.

REPORT ORGANIZATION

This report is organized in three sections. The first section is this introduction. Part I presents the results of the historical research and is a revised version of Tomonari-Tuggle (1997). Part II is the interpretive master plan.

PART I.
HISTORICAL RESEARCH



Interior of Kukaoo Heiau after initial cleaning in 1993 (photograph courtesy of Mary Cooke).

I. KUKAOO HEIAU IN MĀNOA VALLEY

Kukao Heiau is located on the western slopes of Mānoa Valley. Situated at the inland edge of the Waikī coastal plain, the valley is one of Honolulu's primary residential communities, a cool, lush, and relaxed respite from the city bustle but still only minutes away from urban amenities. The *heiau* sits on the grounds of the historic Cooke residence in a well-established, single-family residential area.

This section of the report provides a description of Mānoa as a prelude to the detailed discussion of Kukao Heiau (in Section II) and thus emphasizes the legendary and prehistoric past of the valley. It does not present details of the 19th and 20th century valley history, which is ably discussed in other sources, most notably a recently published volume on Mānoa and its community (MVR 1994).

THE VALLEY ENVIRONMENT

Mānoa is a broad, deep, amphitheater-headed valley, the largest of the eastern valleys of the sharp-rigged Ko'olau range. The name Mānoa means vast (Pukui et al. 1974:146), which appropriately describes the valley. Mānoa extends north and east of the 2-mile wide Waikī plain (Fig. 3). The peak Pu'u Kōnāhuanui stands above the head of the western valley at 3,105 feet above sea level (asl); the point called Mount Olympus (a Hawaiian name is unknown) towers above the eastern valley at 2,500 feet asl.

The waters of Mānoa stream originate in small streamlets at the head of the valley: 'Aihualama, Waihi, and Waihi Iki flow from the western valley and Lua'alaea and Nāniu'apo flow from the eastern valley. Below the hill called Pu'u Pia (erroneously labeled Pu'u Pueo by MacCaughey 1917:565), the streams merge into a single permanent drainage that ribbons its way across the valley floor, exiting the valley at the base of the eastern Wa'ahila ridge (St. Louis Heights), the point of which is called Kalaepōhaku (Wentworth 1940:7). Seaward of the ridge, Mānoa and Pālolo streams join and continue a merged course southward across the level Waikī plain.

Springs along the base of the valley walls also contribute to the waters of Mānoa stream. The legend of Kāne and Kanaloa's travels through the valley is a cultural geography of freshwater sources (MVR 1994:133-138). Figure 3 shows the springs whose locations can be identified or approximated; other springs mentioned in the Kāne-Kanaloa story include Hualani and Wa'aloha.

The lower west portion of the valley (in the area of Kukao Heiau) stands above the valley floor, rising in a smooth wave from the bank of Mānoa stream to the steep valley side.

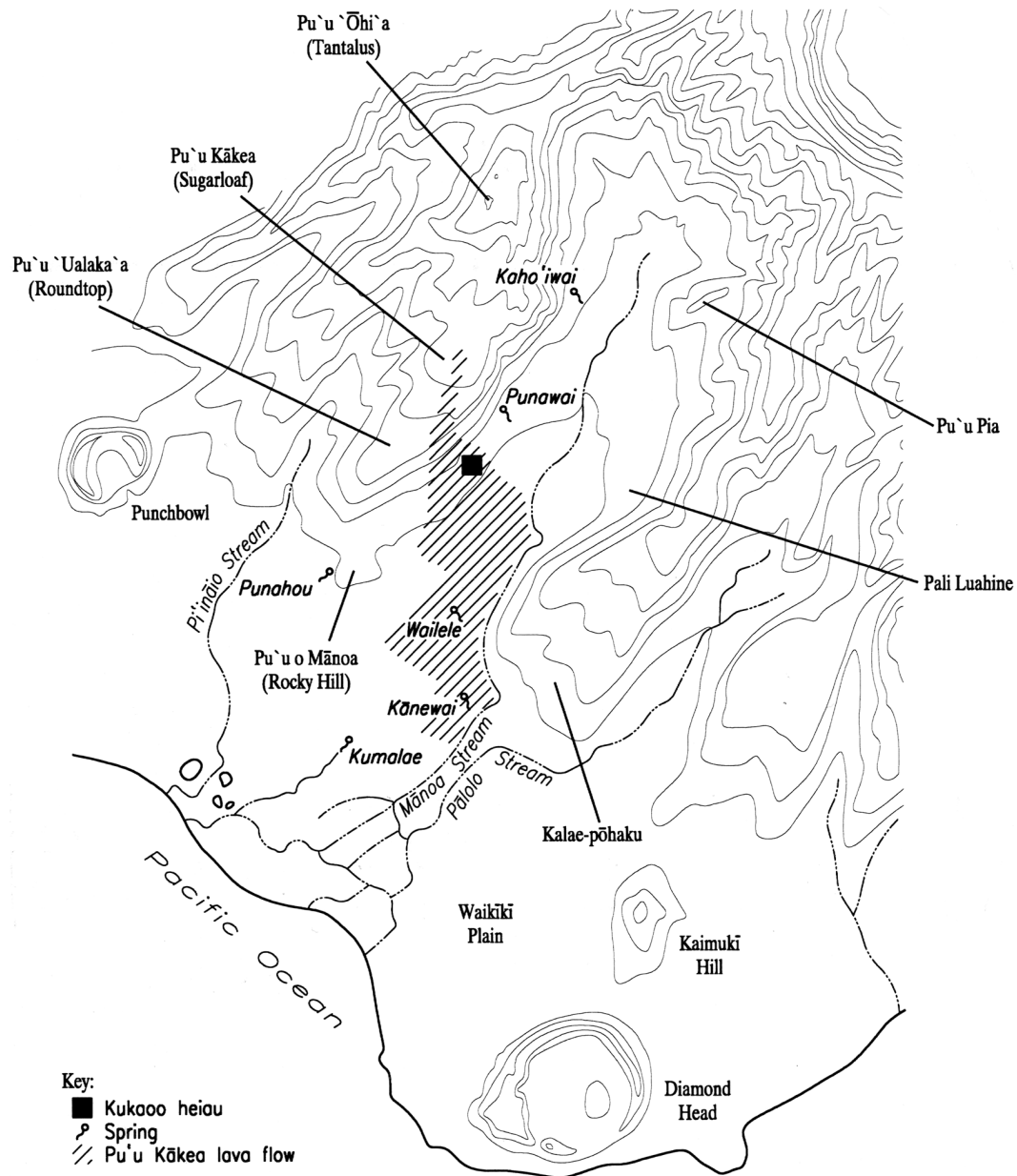


Figure 3. Natural features and Hawaiian place names of Mānoa Valley and the Waikīkī plain (combines elements of Ii 1963:93 and Davis 1989:21).

This high ground is the result of a post-Pleistocene period of volcanic activity called the Honolulu Volcanic Series, a succession of over 30 separate eruptions at the southern end of the Koʻolau range (Macdonald et al. 1983:434). One of the earliest of the eruptions was Kahakea near the mouth of Mānoa Valley; what is now called Rocky Hill (or Puʻu o Mānoa) is the highest and most prominent of the cones and craters that resulted from this eruption. During a later period of the Honolulu series, explosive eruptions at the top of the ridge west of the valley formed cinder and ash cones called Puʻu ʻUalakaʻa (Round Top), Puʻu Kākea (Sugarloaf), and Puʻu ʻŌhiʻa (Tantalus). Lavas from Puʻu Kākea (dated as 67,000 years old; Macdonald et al. 1983:447) flowed down the west wall and across the lower portion of Mānoa Valley (see Fig. 3), encircling the earlier cones of the Rocky Hill eruption and raising the floor of the valley; this ʻaʻā flow is as deep as 12 m in some places (e.g., south of the University of Hawaiʻi campus). The flow pushed the stream from its original mid-valley location to the present alignment along the base of the east valley wall. It also increased alluviation in the upper valley, as soils backed up behind the lava barricade. While the valley floor consists of alluvial soils, the western high ground is “volcanic ash and material weathered from cinders” (Foote et al. 1972:121).

There is a significant rainfall difference between the upper and lower valleys. Over a 31 year period from 1919 to 1951, a station at the present Lyon Arboretum at the head of the western valley (550 feet asl) recorded mean annual precipitation of over 156 inches (Emery 1956:25). In contrast, a station at the University of Hawaiʻi at the mouth of the valley (70-80 feet asl) recorded an annual mean of only 38.46 inches, with a distinct winter maximum, over a 26 year period from 1925 to 1950 (Emery 1956:30). Rainfall in the area of Kukao Heiau is estimated at roughly 90 inches per year (Wentworth 1940:Figure 9).

Mean annual temperatures are cooler in the upper valley by 4.5 degrees (Emery 1956:25) as compared to the lower valley.

Botanical interpretations suggest that prior to Hawaiian settlement, the valley floor was probably covered by a relatively open canopy of *kukui* (*Aleurites moluccana*; introduced to Hawaiʻi following Polynesian colonization), mixed with ʻaʻaliʻi (*Dodonaea viscosa*), *papala* (*Charpentiera ovata*), ʻōhā (*Clermontia* spp.), *māmaki* (*Pipturus albidus*), and other lower elevation forest vegetation (see MacCaughey 1917). Recent paleoenvironmental studies (Athens 1997), however, now indicate that *loulou* palms (*Pritchardia* sp.) may actually have comprised a significant proportion of the arboreal growth in the lowland forests, while the shrub *Kanaloa kahoowaleensis* may have been important in the understory in the drier areas near the valley mouth (although less so in the wetter areas at the back of the valley). These types, however, quickly disappeared with Hawaiian settlement. A thick undergrowth of herbaceous plants no doubt also covered the ground.² The upper valley marked the lower edge of the montane rain forest that was probably dominated by ʻōhiʻa (*Metrosideros polymorpha*) and *loulou* palms, though small amounts of *Antidesma*, *Acacia koa*, *Dodonaea*,

² As recently as the 1960s, the hill behind the Chinese cemetery was covered in *maile* vines (*Alyxia oliviformis*), although extensive grading for an aborted development in the 1960s eradicated the plant completely (Pat Bacon, pers. comm. 1997).

Elaeocarpus bifidus, and Myrsine, along with the tree-climbing vine *Freyrcinetia arborea* would also have been present (S. Athens, pers. comm. 1997).

The vegetation of the high ground of the western valley was also a lower forest type, probably mesic in character, and may have included scrub ‘ōhi‘a lehua, ‘ōhi‘a ‘ai (*Syzygium malaccensis*), and koa (B. Krauss and S. Gon, pers. comm. 1997). Around 1900, the site of the Castle house (on the steep slopes above the Cooke estate) is said to have had “a beautiful grove of breadfruit and ohia trees where native birds congregated in great numbers” (Robb and Vicars 1982:173), suggesting that this area might be a natural habitat for these trees. Around this same time, the heiau was shaded by a spreading hau (*Hibiscus tiliaceus*) tree (Westervelt 1963:131); hau was still growing on the site as recently as the 1940s (S. Cooke, pers. comm. 1997).

MĀNOA: IN THE CONTEXT OF O‘AHU POLITICS AND SETTLEMENT

The following discussion of the evolution of Mānoa settlement is framed in the context of the island as a whole, based largely on Cordy’s (1996) analysis of oral traditions, historical documents, and archaeological investigations.

Until the last few years, the date of initial settlement of O‘ahu has been under much debate among archaeologists. Depending on what source is consulted, Polynesian colonization could have occurred anywhere between about A.D. 1 to 800 (Emory 1963; Hunt and Holson 1991; Kirch 1985; Sinoto 1970, 1983). Recently, however, new data from paleoenvironmental research (Athens 1997, Athens et al. 1997), analysis of archaeoastronomy and oral accounts (Masse and Tuggle, in press), and a critical reassessment of radiocarbon dates (Spriggs and Anderson 1993) has resulted in something of a consensus that initial settlement must have occurred after about A.D. 700, but probably not later than A.D. 800.

The earliest settlers probably made their homes on the windward shores of the islands, coming to the drier southern and western areas only for selected resources like fish and birds. But from A.D. 1000 on, Hawaiians moved outward from their original settlements, spreading into leeward areas along O‘ahu’s southern shores (Cordy 1996:597). Coastal Waikiki was almost certainly settled during this period, offering easy access to rich ocean resources, a ready freshwater supply from springs and streams, level and easily developed lands for cultivation and aquaculture, and a bounty of wild foods like ducks and other wildfowl. Some cultivation probably followed the stream courses into valleys like Mānoa, which were also sources for items like hardwood (for tools, weapons, and building materials) and birds (for feathers).

Permanent settlement of Mānoa and the other leeward valleys of the Ko‘olaus probably occurred after A.D. 1400, as an extension of the initial successful settlement of the leeward coastal areas like Waikīkī.

During the A.D. 1400s, the island probably became unified into one political unit, called the O‘ahu Kingdom by Cordy (1996:598), with the royal center initially located at Līhu‘e in inland ‘Ewa. When Mā‘ilikūkahi became high chief of the island about a century later, chosen by a council of chiefs to succeed Haka, a “bad chief and a stingy one” (Kamakau 1991:53), he moved the royal center to Waikīkī. The times were said to have been prosperous and peaceful. It was during his reign that land divisions were put into order (Kamakau 1991:54-55):

Mā‘ili-kūkahi ordered the chiefs, *ali‘i*, the lesser chiefs, *kaukau ali‘i*, the warrior chiefs, *pū‘ali ali‘i*, and the overseers, *luna* to divide all of O‘ahu into *moku* and *ahupua‘a*, ‘*ili kūpono*, ‘*ili ‘āina*, and *mo‘o ‘āina*. There were six districts, *moku*, and six district chiefs, *ali‘i nui ‘ai moku*. Chiefs were assigned to the *ahupua‘a* – if it was a large *ahupua‘a*, a high chief, an *ali‘i nui*, was assigned to it. Lesser chiefs, *kaukau ali‘i*, were placed over the *kūpono* lands, and warrior chiefs over ‘*ili ‘āina*. Lands were given to the *maka ‘āinana* all over O‘ahu.

The 15th and 16th centuries saw the Hawaiian political system change, as political power gradually replaced kinship as the means of legitimizing rule (Kolb 1991; Hommon 1986). One way that chiefs expressed their power was through construction of monumental architecture including *heiau*, irrigation systems, and fishponds (Cordy 1996:599-600), all requiring the ability to mobilize enormous expenditures of labor. Traditions say the taro fields (and presumably the fishponds) of the Waikīkī plain were built by the chief Kalamakua at this time. When the coastal fields were expanded into the valleys behind the plain is uncertain, although archaeological data from an excavation along Mānoa stream below Kalaepōhaku gives a date for irrigation agriculture as early as the mid-A.D. 1400s (Liston and Burtchard 1996). Archaeological work in other valley locales such as upper Mākaha (Yen et al. 1972) and Anahulu (Kirch 1992) on O‘ahu, and Hālawa on Moloka‘i (Riley 1975) indicates a comparable date for the development of complex irrigation agricultural systems in valley environments.

From the 17th century on, the O‘ahu Kingdom evolved into the form witnessed by western explorers at contact. This century saw a disintegration of the unified kingdom, replaced by warring factions among district chiefs. It also saw the intensification of existing settlements and expansion into more remote (and thus probably less desirable) locales. Cordy (1996:602) summarizes archaeological data that indicate permanent residences being built in upper Mākaha, Nānākuli, and Lualualei valleys on the dry leeward Wai‘anae district, in upper Hālawa in ‘Ewa district, and in upland Kāne‘ohe on the windward side of the island. Irrigation systems were pushed into comparatively more remote and difficult localities.

In the early A.D. 1700s, the chief Kūali‘i came to power and re-established the primacy of the island ruler. He also ventured into the political dominions of neighboring islands, gaining windward Kaua‘i and making war against chiefs on Moloka‘i, Lāna‘i, and Hawai‘i (Cordy 1996:601).

Kūali‘i is a noted chief in the line of O‘ahu rulers, called “one of the last great chiefs” by Pukui and Elbert (1971:389). His name can be literally translated as “royal Kū,”

Kū referring to one of the predominant Hawaiian gods. In a 610-line chant, Kūali‘i is praised as a mortal (*kanaka*), a god (*akua*), a messenger from heaven (one who flies from heaven; *ulele ... mai ka lani*), and a foreigner (*haole*) from Tahiti (Fornander 1917:394-395). Beckwith (1970:394), quoting an unidentified Hawaiian chronologist, reiterates Kūali‘i’s extraordinary qualities: he “was called a God, one of supernatural power, a soldier, a runner, swift of foot. Five times he ran around Oahu in a single day ... He is said to have lived long, (until) he walked with a cane; four times forty years and fifteen he lived, that is 175 years” (the age is surely apocryphal).

Kūali‘i was born at Kalapawai in Kailua, where ceremonies commemorating the birth were carried out at the *heiau* of Alala (Beckwith 1970:395; Thrum 1906:60). In his first great battle (at Nu‘uanu), he defeated the army of Lono-ikaika and assumed control of the southern O‘ahu district of Kona stretching from Moanalua in the west to Maunaloa in the east. Later, he and two companions vanquished an army of 12,000 that had gathered at Līhu‘e on the central plateau of the island; two more battles concluded the subjugation of the entire island. His exploits extended to a rout of a Hawai‘i island chief, Ha‘alilo, and to the conquest of Moloka‘i and Lāna‘i. Beckwith (1970:395) writes that “Kauai, hearing of his conquests, also hastens to make peace with him, and thus the whole group acknowledges Kūali‘i as lord.”

On his deathbed, he called his most trusted friend to his side, charging him with the task of caring for his bones after his death to ensure that they would not be desecrated by his enemies (Fornander 1969:280). Westervelt (1903:151; brackets added) writes:

The friend pointed to his mouth, and the chief [Kūali‘i] was satisfied. After the body had been dissected and the flesh burned, the friend took the bones away and secretly pounded them into a fine powder. Then he returned and called the chiefs from far and near to attend the funeral feast. In the night, he mixed the powder thoroughly through the poi upon which the chiefs were to be fed. When, as a matter of courtesy, they asked him if he had faithfully carried out the dying wishes of Kūali‘i, he pointed with thorough satisfaction to their stomachs and informed them that the bones of the dead chief were well buried.

Beckwith (1970:399) describes the Kūali‘i story as a “semimythical legend ... that concludes the legendary history of Hawaiian chiefs up to the eighteenth century.” She (1970:396) further suggests that:

Certain elements in the Kūali‘i tradition give the impression that we have here the legend not of a single chief but of a political movement led in the name of a god, perhaps belonging to the ancient Ku line and directed against the Lono worshipers.

She continues by noting that the four chiefs of O‘ahu whom Kūali‘i defeated all bear Lono names: Lono-huli-lani, Lono-ikaika, Lono-kukaelekoa, and Lono-huli-moku (Beckwith 1970:397).

Historically (rather than mythically), Kūaliʻi is important as a representative of the Oʻahu line of chiefs that was eventually deposed by first the Maui chief Kahekili and then by Kamehameha in the late A.D. 1700s. Although Kūaliʻi's successors initially expanded Oʻahu's territory to its greatest extent, they were unsuccessful in fending off the incursions of Kahekili, who conquered the Oʻahu Kingdom around 1783, only decades after the noted chief's death. A subsequent revolt by Oʻahu chiefs was crushed and Kahekili commenced a war of retaliation, of which Fornander (1969:226; brackets added) writes:

Gathering his forces together, he [Kahekili] overran the districts of Kona and ʻEwa, and a war of extermination ensued. Men, women, and children were killed without discrimination and without mercy. The streams of Makaho and Niuhelewai [at Kapalama] in Kona, and that of Hoaiai [near Waipahu] in Ewa, are said to have been literally choked with the corpses of the slain. The native Oʻahu aristocracy were [sic] almost entirely extirpated.

Although there is neither oral historical nor archaeological evidence, one can surmise that the wide-ranging revenge wrought by Kahekili affected Waikīkī, the chiefly center of Kona district, and possibly extended into Mānoa as well.

A little more than a decade later, the Maui chiefs were beaten by Kamehameha at the battle of Nuʻuanu. Kamehameha replaced the entire hierarchy of island chiefs with his own followers, rewarding them for their help in the conquest. Thus, the figures of political importance recorded by western explorers and other visitors to Oʻahu in the early post-contact period are those of Kamehameha's Hawaiʻi lineage, the Oʻahu ruling chiefs having fallen into the shadow of conquest and defeat. Fornander (1917:406) writes:

It is, however, told that the genealogical tree to which Kane is the head, and the genealogical tree of Kapapaiakea, were handed down by those who had the keeping of the Oahu genealogy, and these divisions are seen in the history of Kualii; and the genealogical tree from Opuukahonua to Wakea and Wakea to Kamehameha had been handed down by the Hawaii genealogy keepers, and this genealogical tree is seen in the history of Moikeha ... In trying to ascertain the truth of the different divisions of these genealogical trees one is left in doubt as to their correctness, but in looking them over one cannot help seeing that each island had a separate tree.

The lands that were distributed to Kamehameha's supporters were called *panalāʻau* or conquered lands. Four Kona chiefs, Keaweahueulu, Kamanawa, Kameʻeiamoku, and Keʻeaumoku, had served as Kamehameha's main advisors in his wars of conquest and they received extensive holdings on Oʻahu, along with the unusual right to pass their lands on to their successors. Other chiefs also received lands but under the traditional condition of the lands reverting to the ruling chief upon their deaths (Kameʻeleihiwa 1992:58). Large portions of Mānoa were given to Keʻeaumoku and Kameʻeiamoku, including Kānewai (near the mouth of the valley) and Kapunahou (the area of the present Punahou School) (Li 1963:69).

MĀNOA VALLEY AT CONTACT

When Captain James Cook made landfall in Hawai‘i in 1778, he found a group of islands ruled by an elite corps of chiefs, serviced by a multi-layered hierarchy of lower *ali‘i* and a body of *maka‘āinana* (or commoners). On O‘ahu, Waikīkī was the chiefly center of the southern O‘ahu coast, home to the ruling chief and his subordinate *ali‘i* (Cordy 1996; Nāpōkā 1986; Tomonari-Tuggle 1994). Ii (1963:69) writes that “the chiefs like to live [at Waikīkī] because of the surfing.” Houses clustered among the coconut trees on the shoreline from Kālia to the base of Diamond Head. Several large *heiau*, including ‘Āpuakēhau (also called Helumoa) and Papa‘ena‘ena, were the focus of chiefly religious ceremonies.

The village at Waikīkī was supported by agriculture and aquaculture. Freshwater fishponds were clustered at the western end of the beach (Fig. 4). McAllister (1933:76) quotes early visitor Andrew Bloxam:

The whole distance to the village of Whyteete is taken up with innumerable artificial fishponds extending a mile inland from the shore. In these the fish taken by nets in the sea are put, and through most of the ponds are fresh water, yet the fish seem to thrive and fatten. Most of these fish belong to the chiefs, and are caught as wanted. The ponds are several hundred in number and are the resort of wild ducks and other water fowl.

Behind the ponds, the coastal plain was extensively developed in taro fields that extended up into Mānoa Valley. British explorer George Vancouver (1798:I, 161-164, quoted in McAllister 1933:75; brackets added) writes:

This opened to our view a spacious plain, which, in the immediate vicinity of the village [Waikiki], had the appearance of the open common fields in England; but, on advancing, the major part appeared to be divided into fields of regular shape and figure, which were separated from each other by low stone walls ...

We found the land in a high state of cultivation, mostly under immediate crops of taro; and abounding with a variety of wild fowl, chiefly of the duck kind ... The sides of the hills, which were at some distance, seemed rocky and barren; the intermediate vallies, which were all inhabited, produced some large trees, and made a pleasing appearance. The plains, however, if we may judge from the labour bestowed on their cultivation seemed to afford the principal proportion of the different vegetable productions on which the inhabitants depended for their subsistence.

In regard to Mānoa specifically, little is known as to when it was first settled, nor how that settlement grew and expanded to what was evident at the end of the 18th century. But conjecture suggests that the well-watered valley was the site of an extensive system of taro fields and farm shelters, probably with concentrations or clusters of permanent homes. Ethnographers Handy et al. (1972:479-480) use conditions in Mānoa in the 1930s to extrapolate back to Hawaiian times:

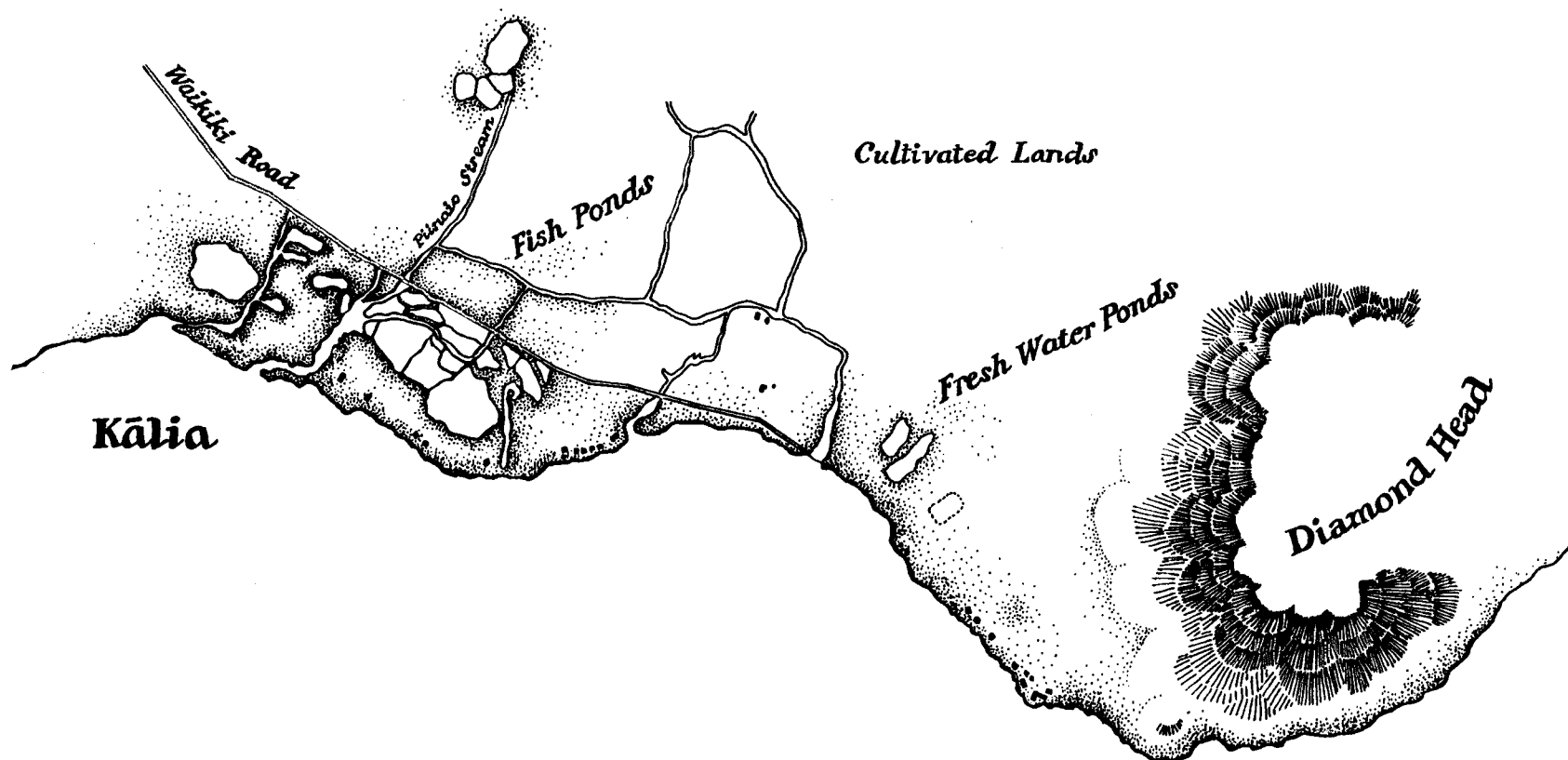


Figure 4. Composite map of Waikīkī in the 1800s, showing the fishponds and cultivated lands (after Malden 1825 and Wall 1887).

Manoa Valley had much well-watered level land ... In the upper valley all the bottom land was terraced. In 1931 much of this land was abandoned, covered with grass; now it is mostly in residences. In 1931, however, there were still about 100 terraces in which wet taro was planted, although these represented less than a tenth of the area that was once planted by Hawaiians.

Recent archaeological work in taro pondfields at Kānewai just below the nose of Wa‘ahila ridge produced radiocarbon dates suggesting that pondfield cultivation began in this area sometime between A.D. 1443 and 1681 (Liston and Burtchard 1996:61), consistent with Hawaiian genealogical traditions that attribute the vast Waikīkī irrigation system to Kalamakua who is said to have ruled in the 15th century (Nāpōkā 1986:2)

In addition to irrigated taro on the valley floor, dryland crops like sweet potato and dry taro were probably cultivated in the cindery, rich soils of the high ground of the western valley, below Pu‘u ‘Ualaka‘a and Pu‘u Kākea. In fact, ‘Ualaka‘a (literally, “rolling sweet potato”) is the site of several legends with sweet potato as a prominent feature (Pukui et al. 1974:214). Ii (1963:69) writes that Kamehameha also had a farm and house at Pu‘u Pueo, “directly below Ualakaa” (the hill that is historically called Pu‘u Pueo is located just seaward of the project area). The upland forest, which certainly extended further into the valley than at present, continued to be a ready source of forest resources like hardwoods and birds.

Mary Pukui (in Sterling and Summers 1978:283) describes a separation of settlement in the valley along a line drawn from Pu‘u o Mānoa (Rocky Hill) to Pu‘u Pia (see Fig. 3). The valley to the west of the line was called Mānoa-ali‘i and the area to the east was called Mānoa-kanaka. The boundary itself follows a line of small *pu‘u* located at (going northeast) present day Beckwith Place, Alaula Way, and the UH Press building on Woodlawn Drive, with Mānoa-ali‘i being the high ground of the Pu‘u Kākea lava flow and Mānoa-kanaka being the flat lands of the stream course. The promontories on the Mānoa-ali‘i side of the valley (including the ridge on which Kukao Heiau is built) would have afforded views of not only the sweep of the valley but also the expanse of taro fields on the coastal plain and the beaches at Waikīkī at the far horizon; thus Mānoa-ali‘i designates a not unlikely location for chiefly residences.

Although discussing modern residential patterns in the valley, Emery’s (1956:31) comments on climate and settlement can be easily applied to an *ali‘i* preference for living on the high ground:

...many people choose to have homes on this [western] side due to sunlight conditions. The west half receives the first rays of the morning sun. This evaporates the dew, and during winter months takes away any chill in the air as contrasted to the opposite side of Manoa which is still shaded by the easterly ridge. In late afternoon the westerly slopes are shaded while long slanting rays of the sun heat the easterly side of the valley. This makes a difference during summer months in house temperature and body comfort.

Mānoa in the early years of the 19th century was a vital and thriving adjunct to the chiefly center at Waikīkī. It is interesting that the *ahupuaʻa* of Waikīkī, of which Mānoa was a part, encompassed the entire eastern half of Kona district (the seven valleys from Mānoa to Kuliʻouʻou); in contrast, the western half of the district consisted of smaller *ahupuaʻa* whose boundaries were generally coterminous with valley areas (e.g., Nuʻuanu, Kalihi, Kahauiki, and Moanalua) (Fig. 5). The reasoning behind this difference in *ahupuaʻa* size is unknown, although the political prominence of Waikīkī and the concentration of chiefs who came to live and play in this area may have been a factor.

Mānoa figures only slightly in the recorded accounts of the early 19th century writers. Kamehameha is said to have planted sweet potato gardens at Puʻu Pueo near Kukaoo Heiau (Ii 1963:69). The chief Boki and his wife Liliha controlled large portions of the valley (she was the heir to the lands of Kameʻeiamoku). Kamehameha's favorite wife Kaʻahumanu also controlled portions of the valley, as heir to Keʻeaumoku's legacy as well as being a powerful chief in her own right; she built a house in upper Mānoa in the early 1820s at a place called Pukaʻōmaʻomaʻo.

The history of Mānoa Valley as it pertains to Kukaoo Heiau came to an end in 1819 with the overthrow of the *kapu* and the collapse of the Hawaiian religious system. Kaʻahumanu affirmed her political power upon Kamehameha's death by orchestrating *ʻainoa* wherein she and other women high chiefs freely ate with their male counterparts including the new king Liholiho. This was an overt defilement of the symbolic separation of the divine (male) from the base and impure (female), and a direct challenge to the core of the religious system. Kameʻeleihiwa (1992:74) writes: "after this act, the *ʻAikapu* was declared no more and the wooden *Akua* on the *heiau* from Hawaiʻi island to Kauaʻi were overturned or burned." Traditionalists led by Kekuaokalani, Kamehameha's heir to the war god Kūkāilimoku, failed to defeat the adherents of *ʻainoa* in battle, the final blow in showing that the old gods had lost their power.

From this point, Kukaoo Heiau became a relic of times past, and the historical events of Mānoa passed it by. Land owners and land use in the valley changed with the times. Pastures replaced sweet potato gardens, roads made linear swaths across the valley floor, truck farms supplanted taro pondfields. Eventually stone and wooden houses covered over even the farms and pastures. Stores and other commercial businesses clustered in the middle of the valley. Of all the Hawaiian temples in Mānoa Valley, only Kukaoo Heiau remained, remembered in name and legend on its pinnacle of a ridge.

ARCHAEOLOGICAL STUDIES IN MĀNOA VALLEY

There has been relatively little archaeological work in Mānoa Valley that can help to expand on the prehistory of the valley. All of the studies have been limited in scope and area. Many are focused on the recording of inadvertent discoveries of human remains (part of the responsibility of the State Historic Preservation Division). The remaining projects include brief surveys of the area around Puʻu Pia (Smith 1988) and at St. Francis High School

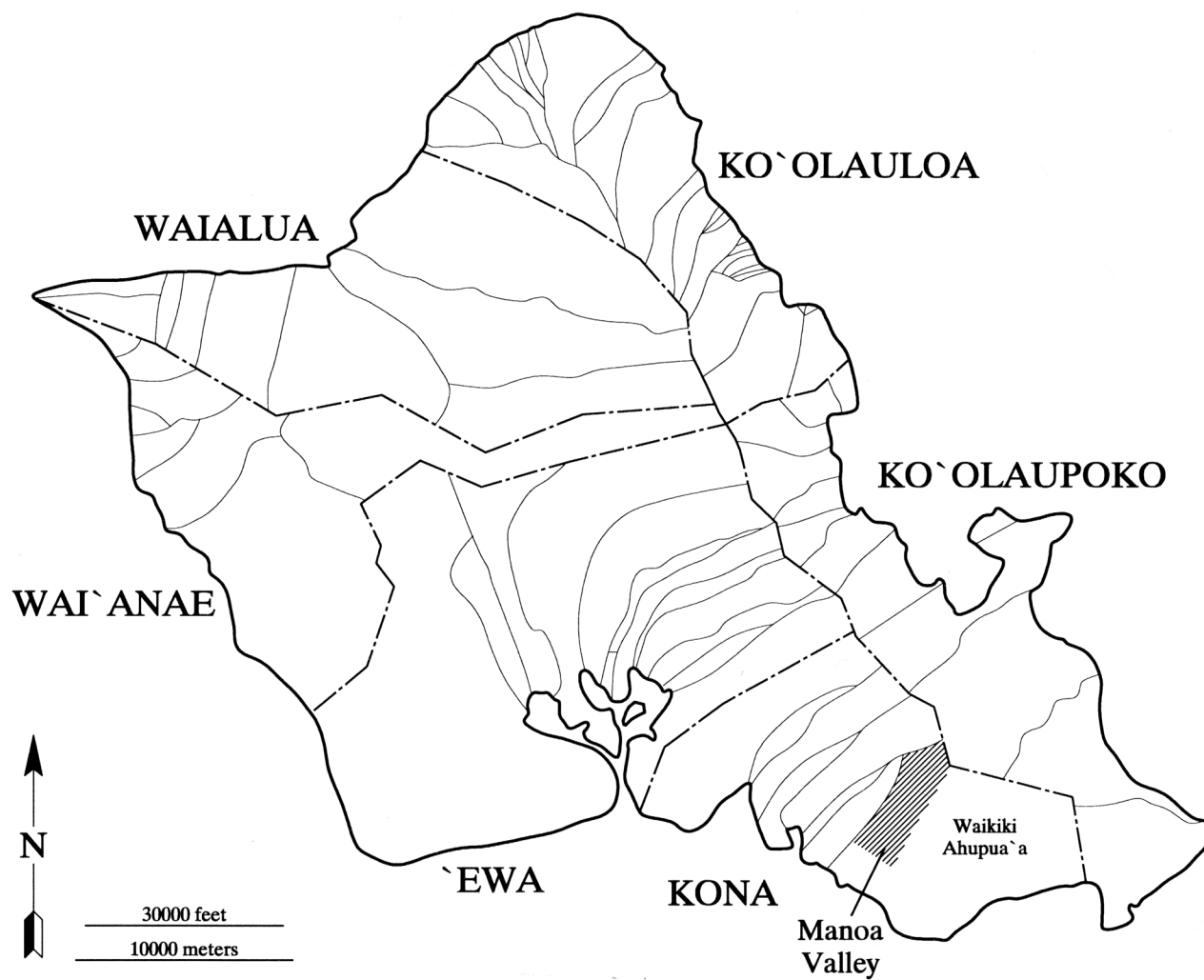


Figure 5. Districts and *ahupua'a* of the island of O'ahu.

(Kawachi 1988), and an excavation of taro fields at Kānewai at the mouth of the valley (Liston and Burtchard 1996). Of particular interest for the present project are Cleghorn and Anderson (1992), Kennedy (1991), and Luscomb (1975) which discuss Kukaoo and Kawapopo Heiau; these are presented in detail in Section III.

Table 1 is a list of known archaeological sites (including Kukaoo Heiau) in Mānoa. It is taken largely from Grune (1992), who summarizes archaeological studies in Mānoa in the context of its place in the *ahupuaʻa* of Waikīkī. She also discusses the environment of the valley and proposes the likely Hawaiian settlement pattern and the probable existing site distribution based on the archaeological work to date.

This small collection of archaeological data reinforces the picture of valley settlement that is drawn from oral traditions. It also highlights the vulnerable nature of archaeological remains in light of the extensive and intensive modern development of Mānoa; that is, very little of the physical remains of Hawaiian settlement remain intact. What is most interesting is the number of burials that have been found; and the fact that, except for a burial cave (Site 4658), all the interments were recovered in developed areas, even the landscaped grounds of the University of Hawaiʻi³.

THE HEIAU OF MĀNOA VALLEY

Only two extant sites in Mānoa Valley are defined as *heiau*: Kukaoo Heiau and a site at 2626 Anuenue Avenue, which is interpreted to be Kawapopo Heiau.

The story of Kūaliʻi relates how he defeated the *menehune* of Mānoa and set up a system of *heiau* and forts in the valley, including the *menehune* fort of ʻUlumalu, and the *heiau* of “Mauoki, Puahia luna and lalo, Kumuohia, Kaualaa, Wailele, and one or two other points between Kaualaa and Kukaoo” (Thrum 1891:112; McAllister 1933:79). Thrum (1906:45) also lists the *heiau* of Kawapopo (in upper Manoa, on the property of Haʻalilio), Hakika (at Pali Luahine on the east side of valley), and Hipawai (seaward of the Protestant church).

While Kukaoo and possibly Kawapopo Heiau still remain, the locations of the others can only be approximated. Although destroyed in the late 1800s, Mauoki Heiau is said to have been located at the foot of Waʻahila ridge (McAllister 1933). Puahia, Kaualaa (or Kauwalaa), Wailele, and Hipawai are place names identified on the 1882 Baldwin map of the valley. There is no record of any places called Kumuohia or Hakika, although the latter is said to be at Pali Luahine which is an identifiable locality (a bench mark on the Baldwin map). Figure 6 shows the temples whose locations are known or can be reasonably

³ Reference to another burial in Mānoa was found in the tax records in the Real Property Assessment Division of the State Tax Office. A note in the records for TMK 1-2-9-20:26 (2861 Oahu Avenue)(Bk 2877, page 185) refers to “the small portion thereof now used as the burial place of Maria Coffin.” The disposition of Maria Coffin’s remains (i.e., whether they remain on the property) is unclear.

Table 1. Known Archaeological Sites in Mānoa Valley.

Site No.	Name/Description	Structure Type	Inferred Function	Comment	Location (TMK)	Information Source*
64	Kukao Heiau	enclosure	religious		1-2-9-19:035	Cleghorn and Anderson 1992
1170	Manoa mound complex	mounds	agricultural?	east of Pu'u Pia	1-2-9-51:002	Smith 1988
3726	Pu'u Pia trail site	platform, mound, trail	agricultural?	east of Pu'u Pia	1-2-8-54:000	Smith 1988
3874	St. Francis High School	terraces	religious?	said to be identified as <i>heiau</i> on 1909 map but source could not be found	1-2-9-04:001	Kawachi 1988
3953	Inland West Manoa	terraces	agricultural?	below Lyon Arboretum	n/a	no report**
3986	2626 Anuenue St. <i>heiau</i>	dirt-surfaced platform with interior platform	religious	Kawapopo Heiau?	1-2-9-20:022	Luscomb 1975
4119	2857 Oahu Ave. burial	burial	burial	stone-lined pit burial; no surface indications; probable post-contact	1-2-9-20:093	Bath and Kawachi 1990
4191	UH Keller Hall burial	burial	burial	single, flexed burial; probable young adult	1-2-8-23:003	Smith and Kawachi 1989
4266	Dole St. burials	burials	burial	18 individuals; interpreted to be a 15 th century cemetery	n/a	Hammatt and Shideler 1990
4273	Sonoma Rd. burial	burial	burial		1-2-9-08:042	Kawachi 1991
4498	Kāpapa Lo'i 'o Kānewai	terraces, ' <i>auwai</i>	agricultural	below nose of Wa'ahila ridge; RC date suggests irrigation agriculture as early as mid-1400s	n/a	Liston and Burtchard 1996
4529	Judd Hillside burial	burial	burial		n/a	
4658	Burial cave	cave w/ multiple burials	burial		1-2-9-25:001	Dagher 1993a
4659	Bottle cache	artifacts	historic cache	not related to burials?	1-2-9-25:001	Dagher 1993b

* lists the most recent source

** described in Bath and Kawachi (1990) as having been recorded by B.P. Bishop Museum in 1963.

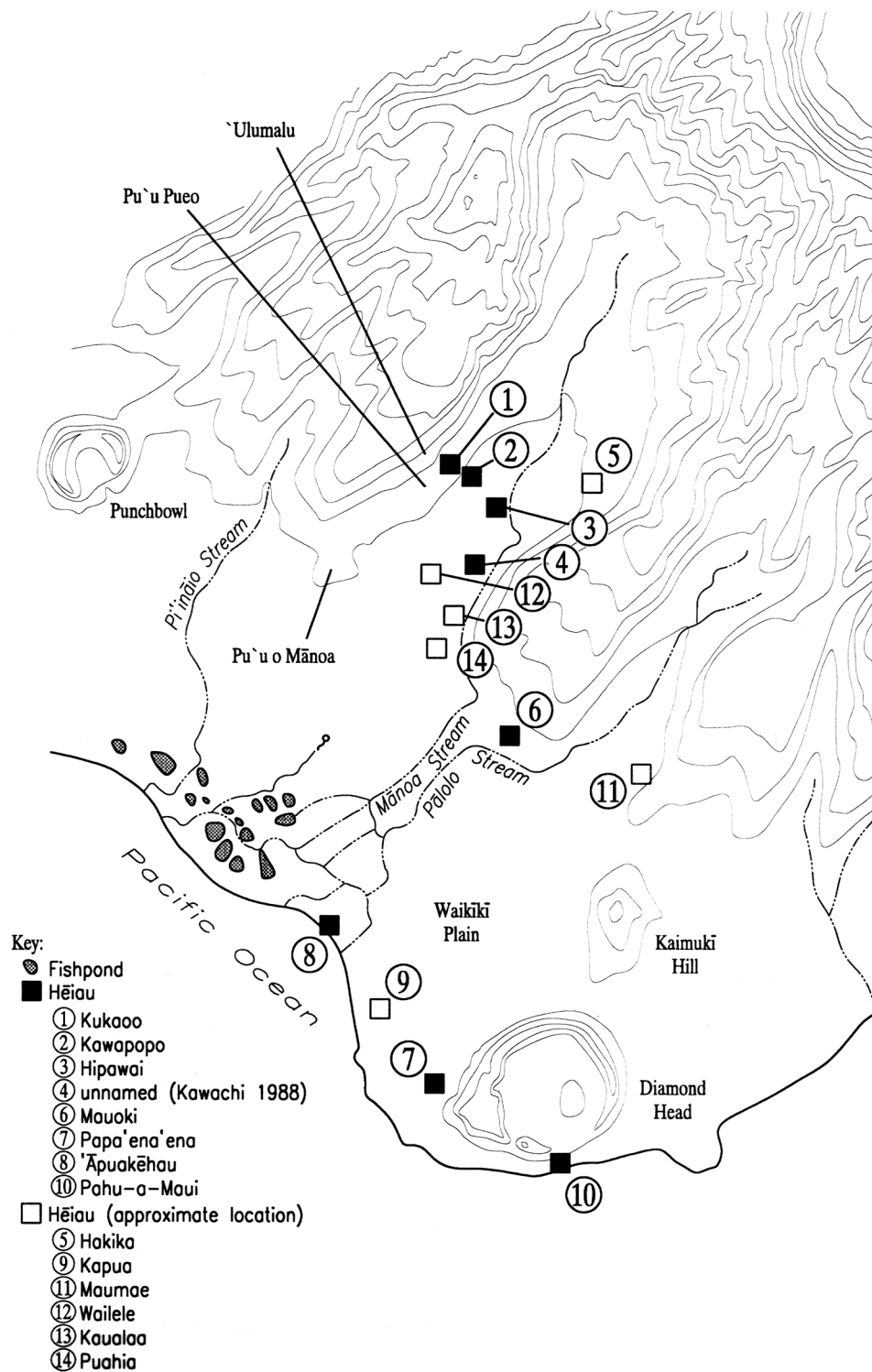


Figure 6. Heiau in Mānoa and Waikīkī (taken from McAllister 1933 and Sterling and Summers 1978, unless otherwise noted).

conjectured (note that all of the *heiau*, except for Hakika, occur on the Pu‘u Kākea lava flow; compare with Fig. 3).

Although said by Thrum (1906) to have been destroyed before 1850, Kawapopo Heiau may have survived into modern times. The remains of a platform that could be this *heiau* were archaeologically identified in 1975 on Anuenue Avenue, on the east side of Oahu Avenue below Kukaoo Heiau (Luscomb 1975). In clearing their backyard of *koa haole* (*Leucaena glauca*) and brush, new residents of the home at this address exposed a platform, from which taro plants shortly thereafter appeared to spontaneously emerge, suggesting that corms may have been dormant in the structure for years (Beatrice Krauss, pers. comm. 1997). The residents called the Bishop Museum and asked for an archaeological evaluation. The feature is described by archaeologist Luscomb (1975):

... a raised platform, measures approximately 6.5 meters (E-W) by 7 meters (N-S). It is defined by retaining walls on the W, N, and E sides and possibly by a collapsed wall on the S. The S area gradually slopes to ground surface from the wall. The property boundary extends out to include the entire feature, but the outer face of the N wall is collapsing onto a neighbor's garden. A small platform (3 by 3 meters) is situated on the NW corner and has pieces of coral on its surface.

The archaeological site lies in an area that is a portion of RPG 638 to Hana Ha‘alilio, which is consistent with McAllister's (1933:80) description of Kawapopo as being “on premises formerly of Haalilio.” A footnote to the archaeology report states “this is labeled ‘heiau’ on the early tax maps but I have no further information” (Luscomb 1975:1).

Hipawai was said to be “of large size and pookanaka class, partly destroyed many years ago, then used as a place of burial” (McAllister 1933:78). This “place of burial” is presumably the Hawaiian cemetery on East Manoa Road (the location of the former Mānoa Chapel of Kawaiaha‘o Church; the present Manoa Valley Theater). As a *po‘okanaka heiau*, this temple was reserved for the *ali‘i nui*, that is “the temple where human sacrifices, which only the king and his delegates may consecrate, are made. It is therefore in the luakini that the principal royal rituals take place” (Valeri 1985:179). Hipawai is also a place name identified on Baldwin's 1882 map, but this locality is at the base of Wa‘ahila ridge near the present St. Francis High School, not the cemetery on East Manoa Road.

Westervelt (1963) describes a *pu‘uhonua* (place of refuge) on the site of the Castle home at ‘Ulumalu above Kukaoo, but McAllister (1933:79) questions whether this was a *heiau*.

Mauoki Heiau, at the foot of Kalaepōhaku (the nose of Wa‘ahila ridge), is said to have been built, like Kukaoo, by the *menehune* (McAllister 1933:78). It was torn down in 1883.

Other than Thrum's general description (1891:112), there is no detailed information on the other *heiau* of Kūali‘i's temple complex.

II. THE HEIAU KUKAO

This section of the report focuses on Kukao Heiau, placing it in its context within the valley as well as part of the cultural and historical use of the Cooke estate.

THE VIEW FROM KUKAO HEIAU: THE HEIAU IN ITS NATURAL ENVIRONS

The modern surroundings of Kukao Heiau confuse the picture of how it might have fit into a Hawaiian landscape of long ago. Houses now shape the landscape, obscuring hills and rocky outcrops. Landscaped and irrigated yards filled with exotic plants suggest a lushness that belies the natural dry conditions of the area. Paved roads give an artificial or imposed sense of direction and destination; where people on foot (as Hawaiians certainly traveled) would have found easy but winding paths along natural contours, roads now direct vehicles along straight alignments.

In times before modern trappings covered the valley, Kukao Heiau would have been a commanding sight, prominently set on the point of a marked ridge (see Fig. 2) at the inland edge of the Pu'u Kākea lava flow, the high ground of the western valley. The inland wall of the *heiau* would have been an imposing facade of set rock, emphasizing its height above the gardens of taro and other crops that would have come to the base of the hill. All around Kukao, the high ground of the western valley would have been covered in native plants like *'ilima* and *'a'ali'i*, interspersed among cultivated gardens of sweet potato and other dryland crops. Breadfruit trees would have covered the hill slope above the *heiau*, as the place name *'Ulumalu* (shade of the breadfruit) and later historical descriptions suggest.

What would have been the view from this place? Inland would be the dark green of the rain forest on the steep mountain slopes of the leeward Ko'olaus; Pu'u Kōnāhuanui towers over the head of the valley. Sweeping seaward onto the valley floor, the view would be the expansive pondfields lining Mānoa stream. Pale yellow thatched houses would be seemingly random dots against the ordered geometric fields of myriad greens of young taro and taro ready to harvest, with here and there reflecting glass-like squares of fields with only unfurled *keiki*. Moving further seaward would be the panorama of the lower valley and the Waikī coastal plain, with the ocean as backdrop to Lē'ahi (alternatively Lae'ahi, or Diamond Head as it is now called) in the far distance.

KUKAOO: WHAT DOES IT MEAN?

The translation of Hawaiian names of antiquity is a difficult task, given the temporal distance from when the name was first applied and used (since all language evolves over time), the mystery of its social, political, and religious context, and the ambiguities raised by the use (or absence) of diacritical marks (glottals and macrons).

In recorded histories such as Thrum (1891, 1906) and McAllister (1933), the name *Kukaoo* (without diacritical marks) is given for the *heiau* on the Cooke estate. The meaning of the name, however, is not clear. The verb *ku* means “to stand, stop, halt, anchor; to rise, as dust; to hit, strike; to park, as a car; to stay, remain, exist; to reach, extend, arrive; upright, standing, parked” (Pukui and Elbert 1971:154). Alternatively, *Kū* (with a macron) refers to one of the four major gods of the Hawaiian pantheon and is a not uncommon component of *heiau* names. Similarly, *kaoo* can be translated in any number of ways, among others, as a noun referring to a digging stick (*ka* ‘ō‘ō) or a verb referring to ripening or maturing as a fruit (*o* ‘o).

Several translations make an obvious association with agriculture. Pukui and Elbert (1971:390) give the spelling *Kū-ka-‘ō‘ō* for “a farmers’ god also known as *Kū-ke-olowalu*” and translate it as “*Kū* the digging stick.” An alternative spelling is *Ku-ka-o‘o*, translated roughly as “the coming or appearance of the mature fruit” as in a harvest (N. Nāpōkā, pers. comm. 1997). Malo (1951:82) describes *Ku-ka-oo* (no diacritical marks) as “the god of husbandmen.” Wichman (1931:15) describes a farmer’s solicitation to the gods in preparing his wood tools:

On the selected day the farmer, wearing a lei in honor of laka, whose homeland he was entering, went off to the forest to the tree he had selected. Here he offered a prayer to the god Ku, or Ku-ka-oo as he was sometimes called, patron of forest trees, and god of the implement makers.

“Ku of the far-stretched hillside, Ku of the mountain, Ku the watcher, Ku giver of strong and twisted branches! Behold the hewing of our implements! Sharp cut the o-o for the fields, for fields of sweet potato, yams, and dry-land taro, these vegetables for dry-land planting!”

The spelling *Kū-ka-‘ō‘ō* is seductive as a link between the god *Kū* and agriculture. *Kū* is said to be one of the first gods to reach Hawai‘i and is best known as the god of war (Pukui and Elbert 1971:389). Agriculture or farming is usually represented by the god Lono, who was the last of the gods to come to Hawai‘i (Pukui and Elbert 1971:392). This seeming opposition or contrast parallels the tradition of the chief *Kūali‘i* who, as noted above in reference to Beckwith (1970), is seen as a representation of the emerging *Kū* cult against the Lono chiefs.

In his discussion of *luakini heiau*, Valeri (1985:180) argues that, while the rituals of the temples of war would seem to be in clear opposition to those of the temples of peace, this opposition is only relative and that the opposites of “war and peace, destruction and

fertilization, life and death are two moments, two phases that are necessarily present in any performance of the royal ritual.” He (1985:184) further clarifies that:

...Ku and his temples are not associated exclusively with war and that they also function to ensure the prosperity and fertility of the kingdom. In reality, war ... is the necessary condition for all other activities. Consequently, Kū, precisely because of his privileged relationship to war, contains *in potentia* all peaceful activities that are made possible by conquest and victory. Thus he can be invoked to ensure the fertility of women and the land, to “stabilize” the kingdom and give it peace, to ward off disease, and so forth.

Thus, it is not unrealistic to link Kū with the activities of agriculture and fertility.

WHAT MAKES A HEIAU?

Heiau are places where Hawaiians offered sacrifices to appease the gods and to ask for assistance and blessings in planned ventures (from the daily action of food collection to the mounting of great battles)⁴. Kolb (1991:265; brackets added) writes:

Thus, sacrifices would be prescribed for a variety of events during the course of a sacrificer’s [the subject who benefits from the sacrifice] life. These include rites of passage like birth, marriage, and death; the desire for purification from sickness or a state of sin; the desire for propitiation in order to avoid calamities such as famine or illnesses; divination before an undertaking such as war; or the presentation of first fruits.

Kirch (1985:257) notes that the remains of *heiau* occur in “a bewildering variety of forms, sizes, and locations throughout the islands,” but adds that it is not so much the physical structure of a *heiau* that is sacred, but the act of making the sacrifice that makes the place sacred. Therefore, a *heiau* can be a single upright rock, a clearing in the forest, a mound of rock, or a massive, multi-tiered platform enclosure. Valeri (1985:180) notes further that it is the intent of the ritual and the “mobile and perishable superstructures (houses, wooden statues, etc.)” that defines the type of *heiau*, not the fixed structure itself; he (1985:173) notes that the concept of the *heiau* (or *haiiau*) is that it is “the place of sacrifice... [and] is therefore defined by its function, not its material aspect.”

Thus, the use or function of a *heiau* may vary, depending on the ceremony, and it can certainly evolve over a period of centuries. Cachola-Abad (1996:14) notes that “Hawaiian oral traditions relate that many [*heiau*] were committed to multiple functions which often cross what are stereotypically perceived as functional class boundaries” and that:

⁴ The alternative spelling for *heiau* is *haiiau*, derived from the word *hai*, meaning “a sacrifice” or “to sacrifice” (Pukui and Elbert 1971:44).

... the boundaries separating heiau functional classes are not distinct. This is not surprising when one considers that Hawaiians worshipped countless deities whose genealogies, histories, domains, and worshippers were interrelated. Indeed, why would we expect Hawaiians across time and space to compartmentalize their religious sites into neatly delineated and unique types based on physical traits ...

Heiau could not only evolve in purpose over time, they could also evolve in form. Kolb's excavations of eight *heiau* on the island of Maui clearly show that temple structures were remodeled and rebuilt (e.g., from platform to enclosure, or with the addition of new elements). Such changes could reflect a change in use or a change in chiefly power. For example, Kolb (1991:379) reports that historic accounts document "temple modification [that] was linked to a significant political event such as a military conquest or the ascendancy of a ruler."

Given its relatively small size, its aspect overlooking the rich Mānoa bottomlands, and its location within an area noted for sweet potato cultivation, Kukao Heiau easily fits the interpretation of an agricultural temple. However, its association in legend with the chief Kūali'i, particularly in the context of his allegorical defeat of the *menehune*, suggests a political purpose, at least at that particular moment in time. The fact that Kūali'i is said to have "rebuilt" the *heiau* after his successful battle suggests that he was affirming his conquest, in line with Kolb's assertion noted above. However, chiefs were not limited in their ceremonial activities to only those *heiau* associated with warfare, but also to *heiau* dedicated to fertility, growth, and production (i.e., agriculture, fishing, and rain)(Valeri 1985:183) and it is possible that the rebuilding of the *heiau* represented Kūali'i's rededication to agricultural productivity following the war (see quote from Valeri 1985:184, above).

The idea that Kukao Heiau may have served both economic and political purposes is not inconceivable and in fact, makes the *heiau* an intriguing structure. The passage of time as related to the use of the *heiau* is a concept that cannot be emphasized more. If the chief Kūali'i is used as the time marker for the *heiau*, then its construction by those preceding him (i.e., the allegorical *menehune*) would have occurred at the very latest in the early 18th century, over 100 years before the overthrow of the traditional religious system in 1819. It is thus possible, and certainly probable, that the activities in and around Kukao Heiau changed over the course of time.

As to the ceremonies that would have taken place in a *heiau* such as Kukao, little can be said with certainty given the ambiguity in its function. Even if it could be clearly determined that Kukao was an agricultural *heiau*, the exact rituals and protocols for such temples are not definitively known and probably were highly variable depending on the specific use of the temple, whether for increasing crops, bringing rain, or any number of other productivity-related needs⁵. Handy et al. (1972:580-581) describe a "Heiau Ho'o-ulu-ulu-'ai

⁵ This uncertainty in regard to ritual in agricultural *heiau* contrasts with what is known of the *luakini* temple ceremonies, most notably analyzed by Valeri (1985). *Luakini* were *heiau* of the ruling chiefs, where human sacrifices were offered.

(Shrine-for-increasing-food), dedicated to Kane” in the *ahupua‘a* of Pakini on the island of Hawai‘i; the *heiau* appears remarkably similar to Kukaoo Heiau in shape (square), size (30 feet across), and location (on the edge of a promontory):

The shrine was in the midst of old taro fields, now given over to pasture. It was the custom of the planters to lay the first taro on the platform with a prayer for increase of the crop. There was no priest attached to the temple, and no house or shelter. The farmers knew the prayers that were required.

In contrast, Malo (1951:206-207) describes a more formal ceremony related to agriculture:

21. It was the custom with all farmers, when a crop of food had ripened, to perform a religious service to the gods. Those who worshipped Ku built their fire during the tabu period of Ku; those who worshipped Kane, built the fire during the tabu of Kane. If Lono was the god they worshipped, they built the fire on his day; if Kanaloa was their god, they built the fire in Kaloa.

22. While they were rubbing for fire and kindling it, no noise or disturbance must be made, but this tabu was removed so soon as fire was obtained. The contents of the oven were made up of vegetables and some sort of meat or fish as well.

23. When the food was cooked, the whole company were seated in a circle, the food was divided out and each man’s portion was placed before him. Then the idol was brought forth and set in the midst of them all, and about its neck was hung the *ipu o Lono*.

24. Then the *kahuna* took of the food and offered it to heaven (*lani*), not to the idol, because it was believed that the deity was in the heavens and that the carved image standing before them all was only a remembrancer.

25. When the priest had offered the food all the people ate until they were satisfied, after which what was left was returned to the owner of it. ...

26. After this ceremony of fire-lighting the man’s farm was *noa*, and he might help himself to the food at any time without again kindling a fire. But every time the farmer cooked an oven of food, he offered to the deity a potato or *taro* before eating of it, laying it on the altar or putting it on a tree.

A VERY ANCIENT TEMPLE: KUKAOO HEIAU IN MYTH AND LEGEND

In legends, the construction of Kukaoo is attributed to the *menehune*, a group of mythical people who are thought of as “former inhabitants of the islands, sometimes as aborigines but more often as introduced from abroad and living in upland forests. ... To the Menehune ... is ascribed the building of old heiaus, fishponds, and other stonework found about the island” (Beckwith 1970:324); further, “Hawaiian families count the Menehune as

their ancestral spirits and helpers, and these little people play the part of benevolent godparents to their descendants.” As for their relationship to Kukaoo Heiau, Westervelt (1963:131) says:

The legends say that the fairy people, the Menehunes, built a temple and a fort a little farther up the valley above Puu-pueo, at a place called Kukaoo, where even now a spreading hau-tree shelters under its branches the remaining walls and scattered stone of the Kukaoo Temple. It is a very ancient and very noted temple site.

Although Thrum (1891) and McAllister (1933) also reiterate the *menehune* origin, they diverge from Westervelt in regard to the vanquishing of these ancestral people. Westervelt (1963:131-132; brackets added) attributes their defeat to the owl god⁶ Pueo (or Pueo-ali‘i) who lived at the hill Pu‘u Pueo just seaward of Kukaoo:

Some people say that the owl-god and the fairies [menehune] became enemies and waged bitter war against each other. At last the owl-god beat the drum of the owl clan and called the owl-gods from Kauai to give him aid. They flew across the channel in a great cloud and reinforced the owl-god. Then came a fierce struggle between the owls and the little people. The fort and the temple were captured and the Menehunes driven out of the valley.

Thrum (1891:112), on the other hand, credits the chief Kūali‘i with defeating the *menehune*:

Its erection is credited to the Menehune’s ... but was rebuilt during the reign of Kualii, who wrested it from them after a hard fought battle. The Menehune’s fort was on the rocky hill, Ulumalu, on the opposite side of the road, just above Kukaoo. Previous to the battle, they had control of all upper Manoa. After Kualii obtained possession, he made it the principal temple fort of a system of heiaus, extending from Mauoki, Puahia luna and lalo, Kumuohia, Kauaalaa, Waialele, and one or two other points between Kauaalaa and Kukaoo. There were also several Muas⁷ in the system they controlled — sacred picketed trench enclosures, and altogether, the scene must have been one of priest-ridden despotism.

Kukaoo Heiau and the hill on which it sits is also connected in legend with Punahou spring as the place where the twin brother and sister Kauawaahila and Kauakahine obtained temporary shelter from the persecutions of a cruel step-mother (Saturday Press 1884):

The children went to the head of Manoa Valley, but were driven away and told to return to Kaala, but they ran and hid themselves in a small cave on the side of the

⁶ Owls figure in several legends of Mānoa. They are guardian gods, among the oldest of this type of family protectors; they act as special protectors in battle or danger and “those who worshipped owls, worshipped them under special names” (Beckwith 1970:124-125).

⁷ Thrum’s use of the term *mua* for “a sacred picketed trench enclosure” is unique. *Mua* generally refers to men’s eating houses (see, for example, Malo 1951:27-29).

hill of Kukaoo, whose top is crowned by the temple of the Menehunes. Here they lived for some time and cultivated a patch of potatoes, their food meanwhile being grass-hoppers and greens. The latter were the tender shoots of the popolo, aheahea, pakai, laulele and potato vines, cooked by rolling hot stones around among them in a covered gourd. When the potatoes were fit to be eaten, the brother made a double imu, or oven, having a kapu, or sacred, side for his food and a noa, or free, side for his sister. The little cave was also divided in two, a sacred and a free part for brother and sister. The cave, with its wall of stone dividing it in two was still intact a few years ago, and the double imu was also to be seen.

KUKAOO HEIAU AFTER WESTERN CONTACT

Cook's landfall in Hawai'i began an inalterable process of massive cultural, social, and political change. The main effect on Kukaoo Heiau was the collapse of the traditional religious system in 1819 and shortly thereafter, the introduction of Christianity. With that combination of events, the temple lost its purpose and it became a stone-walled enclosure, the intimate knowledge of why and how it was used suppressed if not forgotten, although the fact that it was a "heathen" temple was made known to Protestant missionaries who described Mānoa in the 1820s (Damon 1941).

Only supposition can be made about what exactly happened to the *heiau* and its near environs in the decades after western contact. Given the proximity of Mānoa to Waikīkī and to the growing Honolulu urb, the commercial activities that changed the face of other parts of the island likely also had an impact on this Mānoa area (see Cuddihy and Stone 1990:37-40 for a discussion of the effect of early post-contact period activities on native vegetation). The supply demands of foreign vessels laying over in Honolulu Harbor reoriented cultivation from subsistence production to the commercial crops desired by western sailors (e.g., Irish potatoes and fresh vegetables, as well as fresh and salted beef); development of a foreign market in California in the early and mid-1800s added to the demand. As early as 1825, the high ground around Pu'u Pueo was the site of a brief attempt at commercial sugar cane (Thrum 1891:111), replacing Kamehameha's sweet potato gardens of the preceding decades.

Feral cattle may have had an even greater effect on the immediate environs of the *heiau*. Cattle were introduced to the islands in 1793 and 1794 by Captain George Vancouver. Kamehameha's 10-year *kapu* on these animals ensured their survival, and in fact the cattle flourished in the wild, becoming destructive to Hawaiian farms and the native forests. The chief Boki who controlled much of Mānoa in the 1820s, is said to have built stone walls to contain (or exclude) the foraging cattle (MVR 1994:21). In 1847, a claimant to land near Kukaoo Heiau (Neki for LCA 3906) describes walls on the parcel that "were from my makuas [parents] – they expended a great deal of revenue in making these fences" (Native Register 4:187); if one assumes a generation being 25 years duration, then it could be supposed that Neki's parents built the "fences" encircling their parcel around the same time that Boki built his walls. The field book for an 1882 survey of the valley (Baldwin and Alexander 1882) shows a network of walled enclosures in the vicinity of Kukaoo Heiau; this is also graphically illustrated on Wall's 1887 map of Honolulu, which includes Mānoa.

MID-CENTURY LAND RECORDS

The most detailed documentation of land use in the general area of the *heiau* comes from land records of the mid-19th century, of which Neki's claim is just one.

In the mid-19th century division of lands called the Mahele, Mānoa as an entity was not claimed by an individual chief. Rather, sections within the valley, such as Kānewai and Pāmoa, were claimed by different *ali'i* (Victoria Kamāmalu and Charles Kana'ina, respectively). Other areas, like Kahalauluahine (the area of Kukao Heiau), Halelena, and Kaneloa, were designated Crown lands for the king (Indices of Awards 1929). Kamāmalu's lands in Mānoa reflect the lineage of Kamehameha's advisor Ke'eumoku (through his heir Ka'ahumanu and her successor Kīna'u who was Kamāmalu's mother); Barrère (1997:5) notes that "most, if not all, of Ka'ahumanu's lands became 'kuhina' lands, and were inherited by her successive *kuhina nui*⁸: her nieces Kīna'u, Kekauluohi, and (grandniece) Victoria Kamamalu. The lands did not descend as personal property, but through the office of *kuhina nui*." Kana'ina was an *ali'i* of lesser rank who had married the high chief Kekāuluohi and was the father of Lunalilo (king of Hawai'i from 1873-1874). Kapunahou, the Mānoa lands given to Kame'eiamoku by Kamehameha in the late 1700s, had gone to Liliha (through her father Ulumaheihei Hoapili, Kame'eiamoku's son), but in 1829, Liliha's husband, the chief Boki, gave the lands to the Protestant mission.

Smaller parcels of land were awarded to *maka'āinana* as Land Commission awards (LCAs). Descriptions of land use in the LCA documentation indicate that most of the awards were for taro lands, with some sweet potato fields, houselots, and pasture (Grune 1992:Figure 8).

A considerable portion of the valley was set aside as government lands during the Mahele. As early as 1847, 30 parcels of these lands were sold as grants, some of the first sales of lands to individuals in the islands (Alexander 1891; Moffat and Fitzpatrick 1995:92). Two of the grants encompass the portion of the Cooke estate that includes Kukao: Royal Patent Grant (RPG) 201 to Kapoahualahaina and RPG 203 to Moo (Fig. 7). Table 2 details the land transactions from the original award of these grants in 1850 until the purchase by Charles Montague Cooke, Sr., who gave it to his son, C.M. Cooke, Jr. in 1902 as a wedding present. In 1912, the younger Cooke built his home Kūali'i on this property, which also extended west to include a portion of RPG 256 to Richard Armstrong, south into LCA 3322 to Tute, southeast into RPG 638 to Hana Hooper Ha'alilio (also noted as LCA 3906 to Neki), and inland across several LCAs and grants to the area now called "Five Corners."

⁸ *Kuhina nui* is translated as "prime minister" or "premier" but is generally understood to have been a position with much greater authority, sharing power with the king (Pukui and Elbert 1971:160).

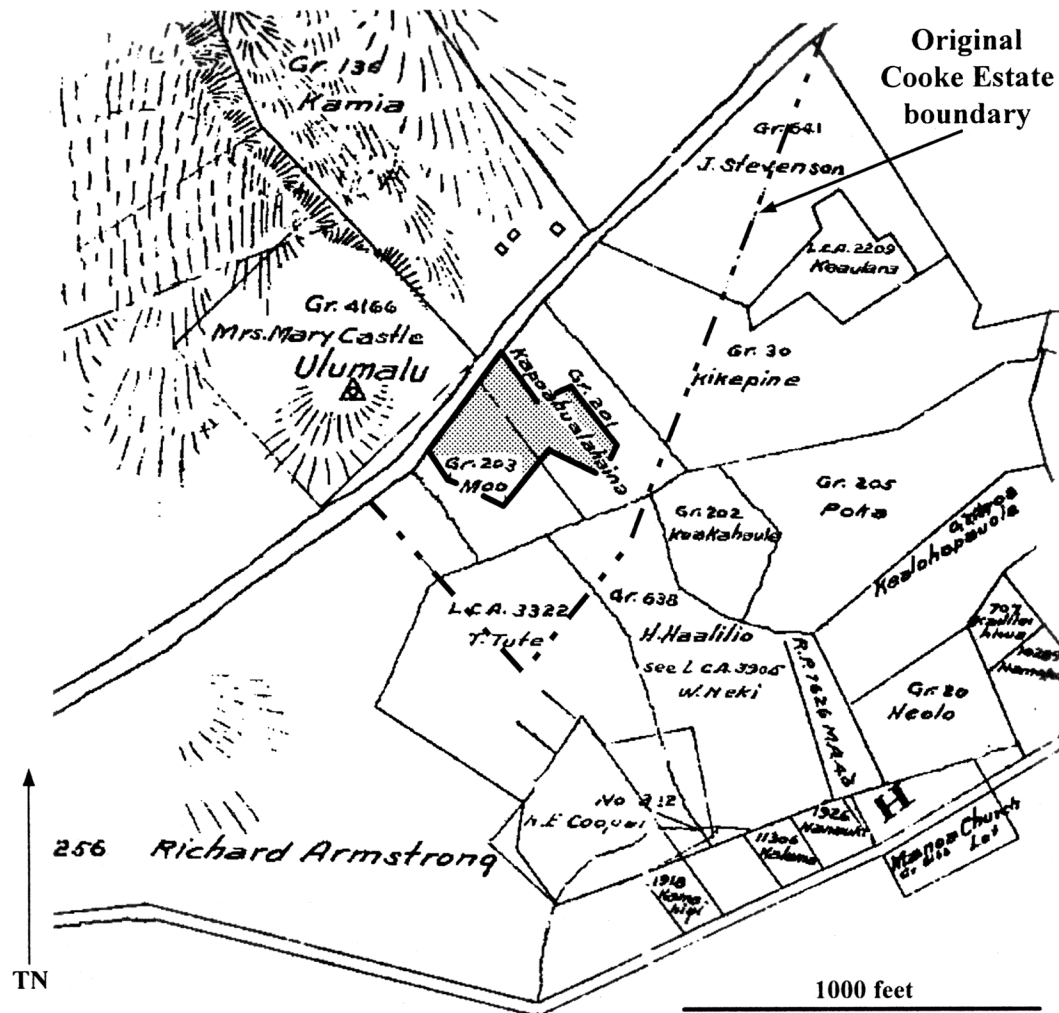


Figure 7. Overlay of the project area on E.D. Baldwin's 1882 map of Mānoa, showing grants and Land Commission awards in the vicinity of Kukao Heiau.

The southern corner of the larger Cooke estate extended into LCA 3322 (RP 2240) to T. Tute. Located in the land called Kahalauluahine, this LCA covered 7.87 acres and encompassed several taro fields (Native Register 4:126). Tute was a Tahitian Christian who came to Hawai'i as a missionary of the London Missionary Society in 1823 (other sources give the date as 1825 or 1826) and was instrumental in converting Keōpūolani (Kamehameha's sacred wife) to Christianity (Kame'eleihiwa 1992:143). In 1827, he became tutor and chaplain to Kauikēauoli (Kamehameha III) (Barrère and Sahlins 1979:23). He died in Wai'anae in 1859. The chief Boki gave the Mānoa land to Tute in 1828 (Barrère 1994:559).

Table 2. Transactions Relating to Royal Patent Grants (RPG) 201 and 203.

RPG No.	Seller	Purchaser	Date	Bureau of Conveyance	Comment
201		Kapoahualahaina	1850		RPG award of 3.67 acres
	Kapoahualahaina	Nathan Sayres	1-5-1852	Liber 5:75	deed; sold for \$130.00; including “all the potato patches more or less”
	N. Sayres	Charles Marshall	8-14-1852	Liber 5:628	deed; sold for \$500
	C. Marshall	Joseph Pratt	1853	Liber 5:628	deed; sold for \$800; including building
	J. Pratt	Thomas Thrum	1859	Liber 12:82	deed; sold for \$650.00
203		Moo	1850		RPG award of 3.12 acres
	Moo	George Augustus	1854	Liber 6:236	house lot; portion of RPG 203?
	Moo	Daniela Lima	1857	Liber 9:457	deed
	D. Lima	Thomas Thrum	1859	Liber 12:180	deed; sold for \$100.00
201/203	T. Thrum	L.H. Gulick	1867	Liber 23:78	deed; combined RPGs 201 and 203
	L.H. Gulick	Frank Silva	1878	Liber 55:211	deed
	F. Silva	F. Andrade and Olaf Sorenson	1898	Liber 181:466	deed to interest in pieces of land, livestock
	Andrade/Sorenson	C.M. Cooke	1898	Liber 180:344	\$9,000 mortgage on RPGs 200, 201, 203, portion of R.P. 4520, Mahele Award 12, and 1/6 acre land (Augustus’ house lot); buildings, livestock (50 head), rent
	Andrade et al.	George Castle	12-9-1899	Liber 188:130	deed to RPGs 201 and 203; includes the “house lot deeded by Moo to Augustus;” states that land is free and clear of encumbrances except the Cooke mortgage
	G. Castle	C.M. Cooke	12-9-1899	Liber 188:130?	
	Andrade et al.	C.M. Cooke	2-28-1900	Liber 203:423	deed to RPGs 201 and 203

Kuakahaule, who was awarded land to the southeast of the Cooke estate (RPG 202 for 2.75 acres), testified on behalf of Tute’s claim. His testimony details the stone wall that marked the boundary of Tute’s land, which Kuakahaule says was a “garden farm” (Native Testimony 3:671; brackets original):

After he had received this land, he had hired help which he compensated with his personal property such as 2 lau [400 per lau] Weke fish; 1 lau of Uhu; 1 lau Kahala and Ulu and 3 hogs, 1 large, the other middle size and a small hog. I think the cash price of these items in money would probably have been \$342.00. The purpose for this was the building of this stone wall.

Tute sold this parcel to Alexander McGuire in 1850. In 1855, McGuire transferred the property to his wife (through her agent, Joseph Booth, Jr.) as part of a divorce settlement; in 1871, Catherine [McGuire] Smith sold the parcel to Narcisse Perry. Perry sold the parcel, along with several others, to H.E. Cooper in 1894 and Cooper subsequently sold a portion of his property to C.M. Cooke, Jr. in 1912. Cooper's home was located atop Pu'u Pueo, the crown of an estate that covered 126 acres of Mānoa (MVR 1994:82).

The southeast portion of the larger Cooke estate extended into RPG 638 to Hana Hooper Ha'alilio. Wall (1882) identifies a single parcel as "Gr. 638 H. Haalilio see LCA 3906 W. Neki." Barrère (1997:3), on the other hand, notes that RPG 638 and LCA 3906 are adjacent parcels and that Hana Hooper Ha'alilio and Neki were sister and brother. The parcel (or parcels) was located in the land of Kaloiki and covered a total of 7.25 acres. In the Native Register of the Land Commission, Neki states (*italics added*):

I Neki hereby state my claims [at] the land fence, mauka in Manoa, *at the heiau of Kukao* on the side below the heiau. These two fences of which I tell you were from my makuas -- they expended a great deal of revenue in making these fences, and I also did, and they are mine at this time -- no else has a right to them.⁹

It is interesting that Neki specifically comments on Kukao Heiau, but not on Kawapopo, which may have fallen in either his parcel or the adjacent one belonging to Kuakahaule. The parcel was part of the purchase by N. Perry and subsequent transactions to C.M. Cooke, Jr.

KUKAO HEIAU IN MODERN TIMES

The second half of the 19th century saw the Kukao area transformed from sweet potato gardens into country retreats from the hustle of urban Honolulu. Joseph Pratt purchased RPG 201 in 1853 and lived in "a spacious and comfortable dwelling" (Thrum 1891:112) on Manoa Road, just above Kukao Heiau. The publisher and historian Thomas Thrum bought Pratt's property as well as the adjacent RPG 203 in 1859 and for a period of seven years, it served as "a summer retreat, and after enlargement of dwelling and grounds, became a point of interest for various riding parties (which were much more frequent in those days than they are of late), and successive sojourners, as events and limited space allowed" (Thrum 1891:112). Thrum (1891:112) describes the Heiau Kukao from his country home:

⁹ It is apparent from the testimonies and claims that Tute and Neki were both claiming ownership of the stone wall.

A few hundred feet from the house [built by J.R. Pratt], on a vast rock pile, still stands a walled enclosure known as the *heiau* of Kukao, now overgrown with lantana and night blooming cereus. This old heathen temple dates back many hundred years.

Given that the lands around Kukao Heiau had largely fallen out of native Hawaiian hands by 1860, it is unlikely that subsistence cultivation continued at any great scale.¹⁰ Thrum's (1891:112) description of his family house as "a summer retreat" implies a pastoral use of the land. A photograph from the Castle home at 'Ulumalu in 1900 shows grazing cows in pastures marked by stone walls, presumably those built by Neki, Tute, and other residents of the area from 50 years previous; Figure 8 shows the walls in the vicinity of the *heiau*. Photo 5 shows the pasture area below the Cooke residence in 1911.

As the new century opened, changes came to the area. Charles Montague Cooke, Sr., president of two of the biggest corporations in Honolulu, gave his son Charles Montague Cooke, Jr., the large tract of Mānoa land including the *heiau* as a wedding present (MVR 1994:96). Cooke raised dairy cows on the property for nine years before he constructed a Tudor revival style mansion on the rising ground above the *heiau* (Photos 6 and 7; see Photo 1), calling the estate Kūali'i after the noted O'ahu chief. Dairy cows continued to graze on the hill slopes of the estate until 1936, when the farm was moved to the windward side of the island (MVR 1994:97).

Four generations of the Cooke family have lived on the estate since its inception, seeing changes come to the house, to the grounds, and to the valley. The founding Cooke passed away in 1948 after a brilliant career as staff malacologist, often acting director, and trustee of the B.P. Bishop Museum (Kondo and Clench 1952). His wife, Lila Lefferts Cooke, continued to live in the house until her death in 1970, at which time their grandson Samuel Cooke took over the house and a portion of the grounds. The gardens and the portion of the grounds containing the *heiau* were bequeathed to daughter Caroline Cooke Wrenn. Samuel Cooke purchased the *heiau* in 1992. Ownership of the *heiau* was transferred to the Kūali'i Foundation, the companion arm of the Mānoa Valley Cultural Heritage Foundation, in 1997.

Throughout the tenure of the Cookes at Kūali'i, the *heiau* has been a tree-shrouded monument to long ago Hawaiian times, a silent feature in a seemingly wild but elegantly cultivated estate garden. Dairy cows have quietly grazed in the pastures around it, children have played within its stone walls, and in short years past, houses have edged to the base of its rocky promontory, cutting away at even the surrounding garden. But in recent years, the efforts of Sam and Mary Cooke and the Mānoa Valley Cultural Heritage Foundation have included clearing and reconstructing the *heiau*, replanting the garden in endemic and indigenous plants, and now bringing more information on the *heiau* to public light.

¹⁰ Note in Table 2 that Kapoahualahaina's transaction to Nathan Sayres dated January 5, 1852 includes "all the potato patches."

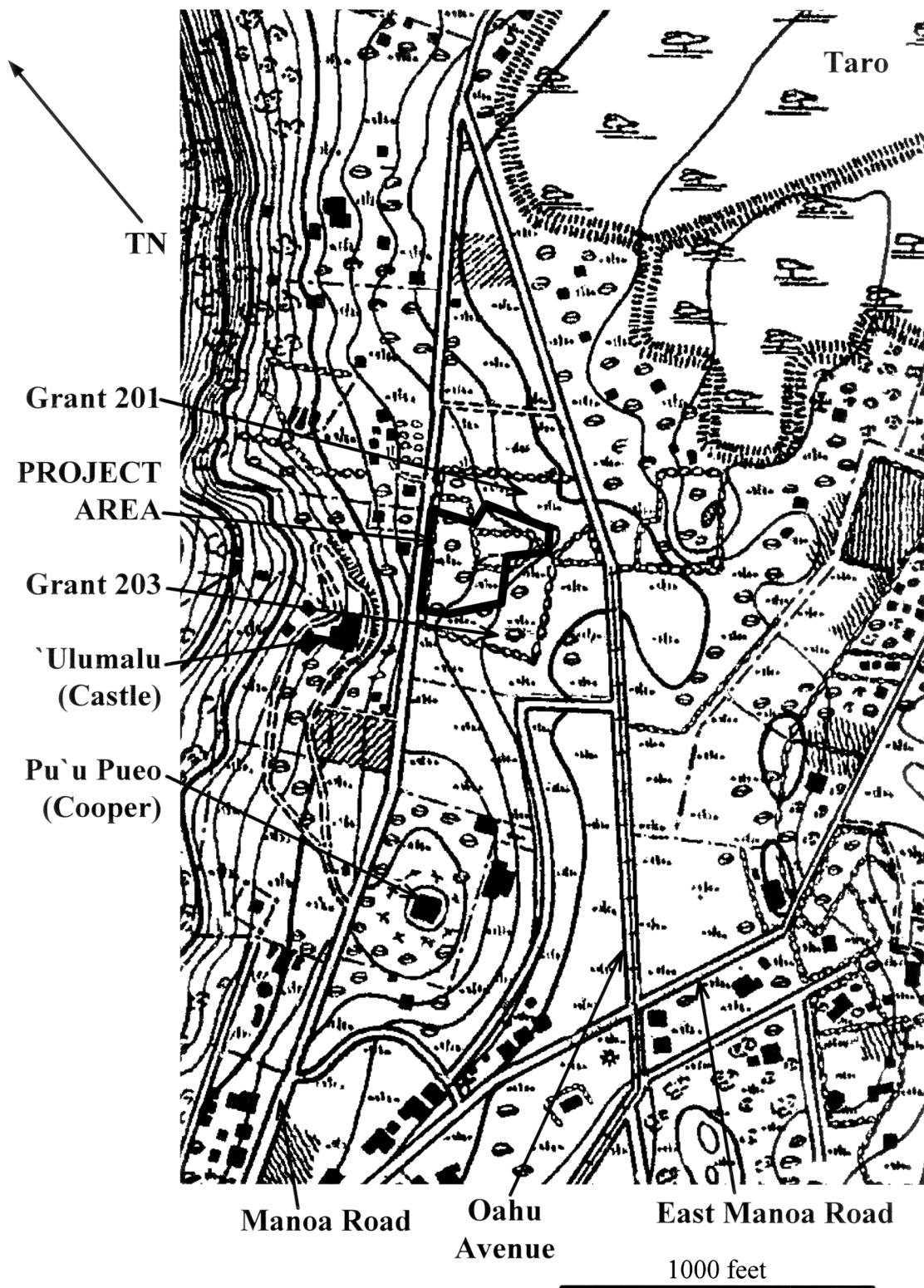


Figure 8. Overlay of the project area on a portion of a 1910 military topographic map of Honolulu (U.S. Engineers 1910).



Photo 5. Pasture area below the Cooke residence, circa 1911.



Photo 6. The Cooke residence under construction, looking west.



Photo 7. Blue stone quarried from the site, used for the house foundation and chimneys at either end of the house. (The name of the individual in the photograph is unknown.)

THE HEIAU AS AN ARCHAEOLOGICAL SITE

With the overthrow of the native Hawaiian religious system in 1819, Kukao Heiau fell into disuse, although knowledge of its original purpose continued in oral and written tradition. Missionaries on a tour of the valley in the early 1820s noted a temple that could be Kukao (Damon 1941:6; brackets added):

It [land which the missionaries were given] contains two or three acres of upland on the side of the hill called Uala-kaa and an acre and half of low taro ground in a well watered valley of 600 acres. On one side of this secluded valley they visited an old *heiao* [sic], or place of worship in Tamahamaha's time, consisting now simply of a stone wall from three to six feet thick, and from six to twelve feet high, enclosing a small area about twenty feet square.

Nearly 70 years later, historian, publisher, and Mānoa resident (briefly) Thomas Thrum (1891:112) described Kukao Heiau as “an old heathen temple [that] dates back many hundred years.” He later recorded the site in his survey of Hawaiian temples in 1906 (1906:45): a “small heiau said to have been built by the Menehunes from which it was wrested by Kualii and rebuilt about 1700. Its walls are yet standing.” It was the only one of several in Mānoa and neighboring Pauoa Valley that was thought to be extant at that time.

McAllister (1933) was the first archaeologist to formally record Kukaoo Heiau, documenting the descriptions made by earlier visitors like Thrum in 1906 and the missionaries of the 1820s. He drew the first map of the site (listed as Site 64) that details structural characteristics (Fig. 9). In 1957, a stylistically similar map and cross-sections of the *heiau* were drawn (B.P. Bishop Museum Archives, MS Anthro Group 7, 6.8); two versions (a field sketch and finished drawing) of this later map add details such as compass bearings of the walls, wall heights, and wall condition.

It was not until the 1990s that modern archaeological examinations of the site were made. Kennedy (1991) remapped the *heiau* and surveyed an adjoining area, both belonging to the Wrenn family at the time. After the *heiau* was acquired by the Cookes, Cleghorn and Anderson (1992) carried out further mapping as well as test excavations in areas adjoining the *heiau* (see Fig. 2). Based on construction characteristics of the enclosure and adjoining walls, they surmised the structure had been repaired (Cleghorn and Anderson 1992:11):

The walls of the *heiau* appear to have been repaired several times in historic times. the interior sides NW and SW walls are well constructed and may not have been repaired in historic times. The interior sides of the NE and SE walls, on the other hand, exhibit poor construction techniques, which are probably the result of historic repairing or rebuilding.

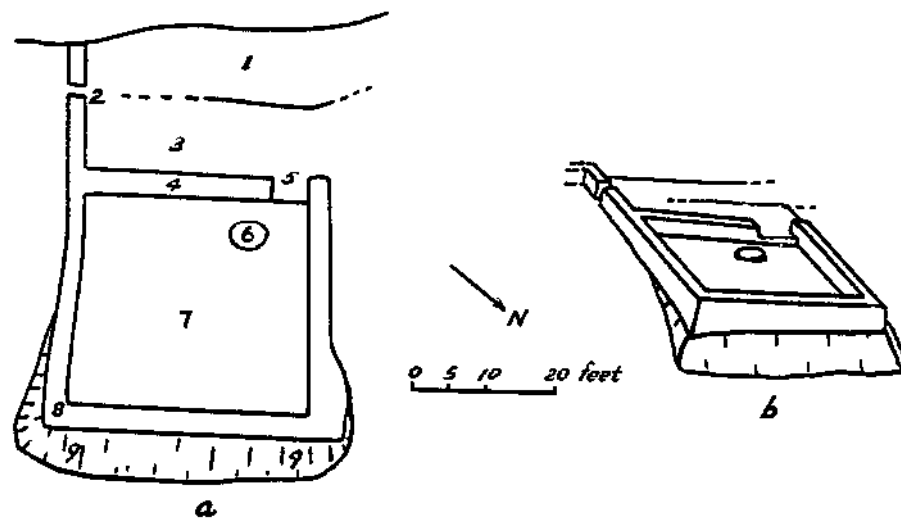


Figure 9. Map of Kukaoo Heiau as drawn by McAllister (1933:79), who describes the *heiau*: (1) small terrace ending in a steep slope; (2) entrance of recent construction; (3) terrace 11 feet wide, 2 feet higher than inclosure 7, and 1.5 feet higher than terrace 1; (4) wall 3 feet thick, 4 feet high toward inclosure 7, and 2 feet high toward terrace 3; (5) break in the wall 5 feet wide, may have been an entrance; (6) oval flooring of rocks, 5 feet across and 0.5 foot high; (7) inclosure 30 by 31 feet with walls 4 to 5 feet high inside; (8) wall almost 9 feet high; (9) embankment, reinforces wall.

The massive wall abutting the north corner of the *heiau* was interpreted to be of historic construction because it abutted (rather than bonded with) the enclosure; also, McAllister (1933) had not recorded this wall in his 1930s survey (see Fig. 9).

Test excavations in terraces on the steep slope below and inland of the *heiau* (see Fig. 2) produced two radiocarbon dates of probable late prehistoric to modern origin (A.D. 1671 to 1947; A.D. 1643 to 1955) (Cleghorn and Anderson 1992:26). Although both samples were dispersed charcoal (i.e., not from a discrete feature and therefore not dating a specific event), the latter sample was associated with traditional Hawaiian artifacts (basalt core and flakes, volcanic glass flakes) which lends some credence to the late prehistoric date. This is consistent with the genealogically defined time frame based on Kūali'i's association.

In 1994, the Cookes decided to address the deteriorating condition of the *heiau*. Through Nathan Nāpōkā of the SHPD, the Cookes contacted Billy Fields, a Hawaiian dry wall mason contractor from Kailua-Kona, and it was determined that the only way to ensure the long term stability of the site was through reconstruction. The *heiau* was cleared of the insidious damaging vegetation and a total reconstruction was carried out (Photo 8). A report on the wall rebuilding is in preparation (N. Nāpōkā, pers. comm. 1997).

THE SIGNIFICANCE OF KUKA OO HEIAU

Recent researchers (Kennedy 1991; Cleghorn and Anderson 1992) have evaluated the significance of the *heiau* in terms of National Register of Historic Places (NRHP) criteria as stipulated in title 36, part 60 of the Code of Federal Regulations. These criteria are as follows:

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- A. that are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. that are associated with the lives of persons significant in our past; or
- C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. that have yielded, or may be likely to yield, information important in prehistory or history.



Photo 8. Kukaoo Heiau after reconstruction (photograph by Mary Cooke).

The State of Hawai‘i further defines a fifth criterion that a site has important historical cultural value to an ethnic group of the State (DLNR draft rules and regulations, dated May 1989).

Kennedy (1991:6) states that the *heiau* is significant under all five criteria, namely it reflects a major trend in history (“the transfer of power from Menehune to the Kapu System”), it is associated with a significant historical individual (the chief Kūali‘i), it is an excellent example of a site type, it is likely to yield important scientific data, and it has cultural significance as a temple as well as for its mythological associations. Cleghorn and Anderson (1992:26) evaluate it to be significant based on NRHP criterion D and State of Hawai‘i criterion E.

The present research evaluates Kukaoo Heiau to meet the NRHP significance criteria. Most important is its tie to the chief Kūali‘i, who acts as a point of convergence for four of the five significance criteria. Beyond being an individual of traditional import, Kūali‘i is a symbol of a major transition in Hawaiian culture and is interpreted as a semi-mythical character who transcends the legendary history of Hawaiian chiefs, bringing Hawaiian culture and politics into the time of written histories (Beckwith 1970). Beckwith (1970:396) sees him as a political movement possibly transferring power from the Lono worshippers to the followers of Kū. The estimated time frame for the ascendancy of Kūali‘i corresponds with archaeological interpretations of changes in Hawaiian politics.

Further, the *heiau* represents one of the few traditional Hawaiian structures that exist in the urban Honolulu landscape. As a religious site, it is a spiritual tie to a Hawaiian past that is important to native Hawaiians. As a religious site that is probably related to cultivation as well as connected to the chief Kūali‘i, it reflects a spirituality that melds power and politics with the common person.

The recent preservation work at the *heiau*, by virtue of the reconstruction of virtually the entire structure, has affected the integrity of the site as an original piece of Hawaiian architecture. However, the *heiau* retains its original relationship with the natural elements of the surrounding environs, and thus maintains an integrity of place particularly in regard to its sense of location, setting, and feeling. Also, during the reconstruction, only the original stones were used.

REFERENCES

Alexander, W.D.

- 1891 *A Brief History of Land Titles in the Hawaiian Kingdom*. Pamphlet.

Athens, J. Stephen

- 1997 Hawaiian Native Lowland Vegetation in Prehistory. In P.V. Kirch and T.L. Hunt (eds.), *Historical Ecology in the Pacific Islands*, pp. 248-270. Yale University Press, New Haven, Connecticut.

Athens, J.S., J. Ward, H. D. Tuggle, and D.J. Welch

- 1997 *Environment, Vegetation Change, and Early Human Settlement on the 'Ewa Plain: A Cultural Resource Inventory of Naval Air Station, Barbers Point, O'ahu, Hawai'i. Part III: Paleoenvironmental Investigations*. Prepared for Belt Collins Hawaii. International Archaeological Research Institute, Inc., Honolulu.

Baldwin, E.D.

- 1882 Map of Manoa Valley. Scale 1:6,000. Government Register Map 1068, in the files of the State Survey Office. [tracing of GRM 1068 by H.E. Newton, dated March 1904]

Baldwin, E.D. and W.D. Alexander

- 1882 Survey of Manoa Valley, Manoa, Oahu. Field Book. Register No. 233, in the files of the State Survey Office, Honolulu.

Barrère, Dorothy B.

- 1994 The King's Mahele: the Awardees and Their Lands. Ms. In the files of the State Historic Preservation Division, Department of Land and Natural Resources, Honolulu.
- 1997 Comments on the draft of *Kukao Heiau: A Glimpse at Mānoa's Past*. Submitted to the Mānoa Valley Cultural Heritage Foundation. October 21.

Barrère, D.B. and M. Sahlins

- 1979 Tahitians in the Early History of Hawaiian Christianity: the Journal of Toketa. *The Hawaiian Journal of History* 13:19-35.

Bath, J. and C. Kawachi

- 1990 Oahu Avenue Burial Investigation, Manoa, Honolulu, Oahu. State Historic Preservation Division, Department of Land and Natural Resources, Honolulu.

Beckwith, Martha

1970 *Hawaiian Mythology*. University of Hawaii Press, Honolulu.

Cachola-Abad, C. Kēhaunani

1996 The Significance of Heiau Diversity in Site Evaluations. *CRM* 8:11-16.

Cleghorn, P.L. and L. Anderson

1992 *Archaeological Inventory Survey in Manoa Valley, O'ahu (TMK: 2-9-19-36) and Preservation Plan for Kukao'o Heiau*. Prepared for Samuel A. Cooke. Paul Cleghorn Consulting, Kailua.

Cordy, Ross

1996 The Rise and Fall of the O'ahu Kingdom: a Brief Overview of O'ahu's History. In J.M. Davidson, G. Irwin, B.F. Leach, A. Pawley, and D. Brown (eds.), *Oceanic Culture History: Essays in Honour of Roger Green*, pp. 591-613. New Zealand Journal of Archaeology Special Publication.

Cuddihy, L.W. and C.P. Stone

1990 *Alteration of Native Hawaiian Vegetation. Effects of Humans, Their Activities and Introductions*. University of Hawaii Cooperative National Park Resources Studies Unit, Honolulu.

Dagher, C.

1993a Inadvertent Discovery of Burial Cave Containing Multiple Burials in Manoa Valley (Site 50-80-14-4658), Waikiki, Kona, Oahu. TMK 2-9-25:001. State Historic Preservation Division, Department of Land and Natural Resources, Honolulu.

1993b Historic Bottle Cache in Manoa Valley Cave (Site 50-80-14-4659), Waikiki, Kona, Oahu. TMK 2-9-25:001. State Historic Preservation Division, Department of Land and Natural Resources, Honolulu.

Damon, Ethel M.

1941 From Manoa to Punahou. *Forty-Ninth Annual Report of the Hawaiian Historical Society for the Year 1940*. May.

Davis, Bertell D.

1989 *Subsurface Archaeological Reconnaissance Survey and Historical Research at Fort DeRussy, Waikiki, Island of O'ahu, Hawai'i*. Prepared for U.S. Army Engineer District, Pacific Ocean Division. International Archaeological Research Institute, Inc., Honolulu.

Emery, Byron Elwyn

1956 Intensification of Settlement and Land Utilization Since 1930 in Manoa Valley, Honolulu. M.A. Thesis, University of Hawaii, Honolulu.

Emory, Kenneth P.

- 1963 East Polynesian Relationships: Settlement Pattern and Time Involved as Indicated by Vocabulary Agreements. *Journal of the Polynesian Society* 72:78-100.

Foote, D.E., E.L. Hill, S. Nakamura, and F. Stephens

- 1972 *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawai'i*. U.S. Department of Agriculture, Soil Conservation Service, in cooperation with the University of Hawaii Agricultural Experiment Station. U.S. Government Printing Office, Washington, D.C.

Fornander, Abraham

- 1917 History of Kualii. *Fornander Collection of Hawaiian Antiquities and Folk-Lore*. B.P. Bishop Museum Memoirs IV(II):364-434. Bishop Museum Press, Honolulu.
- 1969 *An Account of the Polynesian Race. Its Origin and Migrations and the Ancient History of the Hawaiian People to the Times of Kamehameha I*. Charles E. Tuttle Company, Rutland, Vermont and Tokyo, Japan. [originally published in three volumes in 1877, 1879, and 1884]

Graves, Michael W. and David J. Addison

- 1995 The Polynesian Settlement of the Hawaiian Archipelago: Integrating Models and Method in Archaeological Interpretation. *World Archaeology* 26:380-399.

Grune, Anna Maria R.

- 1992 Archeological Synthesis of Waikiki Ahupua'a Focusing on Manoa Valley, 'Ili of Waikiki, Waikiki, Island of O'ahu, Hawai'i. Student paper, Department of Anthropology, University of Hawaii, Honolulu. In the files of the State Historic Preservation Division, Department of Land and Natural Resources, Honolulu.

Hammatt, H.H. and D.W. Shideler

- 1990 *Archaeological Disinterment of Inadvertent Finds at Site 50-80-14-4266 on Dole Street, Kanewai, Manoa, Kona District, Oahu*. Prepared for the Board of Water Supply. Cultural Surveys Hawaii, Kailua.

Handy, E.S.C., E. Handy, and M.K. Pukui

- 1972 *Native Planters in Old Hawaii*. B.P. Bishop Museum Bulletin 233. Bishop Museum Press, Honolulu.

Hommon, Robert J.

- 1986 Social Evolution in Hawaii. In P.V. Kirch (ed.), *Island Societies: Archaeological Approaches to Evolution and Transformation*, pp. 55-68. Cambridge University Press, Cambridge, England.

Hunt, Terry L. and Robert M. Holsen

- 1991 An Early Radiocarbon Chronology for the Hawaiian Islands: a Preliminary Analysis. *Asian Perspectives* 30(1):147-161.

Ii, John Papa

- 1963 *Fragments of Hawaiian History*. Bishop Museum Press, Honolulu.

Indices of Awards

- 1929 *Indices of Awards Made by the Board of Commissioners to Quiet Land Titles in the Hawaiian Islands*. Star-Bulletin Press, Honolulu.

Kamakau, Samuel M.

- 1991 *Tales and Traditions of the People of Old. Nā Mo'olelo a ka Po'e Kahiko*. Translated by Mary Kawena Pukui, edited by Dorothy B. Barrère. Bishop Museum Press, Honolulu.

Kame'eleihiwa, Lilikalā

- 1992 *Native Land and Foreign Desires*. Bishop Museum Press, Honolulu.

Kawachi, Carol

- 1988 Field Check of Terrace Facings on St. Francis High School Grounds. State Historic Preservation Division, Department of Land and Natural Resources, Honolulu.
- 1991 Burial at 2414 Sonoma Street, Lower Manoa (TMK 2-9-08:42). State Historic Preservation Division, Department of Land and Natural Resources, Honolulu.

Kennedy, Joseph

- 1991 Letter report re: archaeological examination of Kukao'o Heiau. Prepared for NAMAHE Associates. Archaeological Consultants of Hawaii, Haleiwa.

Kirch, Patrick V.

- 1985 *Feathered Gods and Fishhooks: an Introduction to Hawaiian Archaeology and Prehistory*. University of Hawaii Press, Honolulu.
- 1992 *The Archaeology of History. Volume Two of Anahulu. The Anthropology of History in the Kingdom of Hawaii*. The University of Chicago Press, Chicago.

Kolb, Michael

- 1991 *Social Power, Chiefly Authority, and Ceremonial Architecture, in an Island Polity, Maui, Hawaii*. Ph.D. dissertation, Department of Anthropology, University of California at Los Angeles.

- Kondo, Y. and W.J. Clench
1952 *Charles Montague Cooke, Jr., A Bio-Bibliography*. B.P. Bishop Museum Special Publication 42. The Museum, Honolulu.
- Liston, J. and G.C. Burtchard
1996 *Kāpapa Lo'i 'o Kānewai. Archaeology at the Center for Hawaiian Studies, University of Hawai'i at Mānoa*. Prepared for Kauahikaua & Chun Architects. International Archaeological Research Institute, Inc., Honolulu.
- Luscomb, Margaret L.K.
1975 Report on Inspection of Heiau at 2626 Anuenue St., Manoa, Oahu. Typescript on file in the State Historic Preservation Division, Department of Land and Natural Resources. July 30. [presumed to be a B.P. Bishop Museum document]
- MacCaughey, Vaughan
1917 The Phytogeography of Manoa Valley, Hawaiian Islands. *American Journal of Botany* 4:561-603. December.
- Macdonald, G.A., A.T. Abbott, and F.L. Peterson
1983 *Volcanoes in the Sea*. Second Edition. University of Hawaii Press, Honolulu.
- Malden, Charles R., Lt.
1825 Portion of map of Honolulu and Waikiki. In D. Hibbard and D. Franzen, *The View from Diamond Head. Royal Residence to Urban Resort*, end paper. Editions Limited, Honolulu.
- Malo, David
1951 *Hawaiian Antiquities*. Bishop Museum Press, Honolulu.
- Masse, Bruce and H. David Tuggle
in press The Date of Hawaiian Colonization. *Rapanui Journal*.
- McAllister, Gilbert
1933 *Archaeology of Oahu*. B.P. Bishop Museum Bulletin 104. Bishop Museum Press, Honolulu.
- Moffat, R.M. and G.L. Fitzpatrick
1995 *Surveying the Mahele*. Editions Limited, Honolulu.
- MVR (Manoa Valley Residents)
1994 *Manoa. The Story of a Valley*. Mutual Publishing, Honolulu.
- Nāpōkā, Nathan
1986 The Seat of Power. In D. Hibbard and D. Franzen, *The View from Diamond Head, Royal Residence to Urban Resort*, pp. 2-7. Editions Limited, Honolulu.

Pukui, Mary K. and Samuel H. Elbert

1971 *Hawaiian Dictionary*. University of Hawaii Press, Honolulu.

Pukui, M.K., S.H. Elbert, and E.T. Mookini

1974 *Place Names of Hawaii*. University of Hawaii Press, Honolulu.

Riley, Thomas J.

1975 Survey and Excavations of the Aboriginal Agricultural System. In P.V. Kirch and M. Kelly (eds.), *Prehistory and Ecology in a Windward Hawaiian Valley: Halawa Valley, Molokai*, pp. 79-116. Pacific Anthropological Records 24. Department of Anthropology, B.P. Bishop Museum, Honolulu.

Robb, P. and L. Vicars

1982 Manoa's "Puuhonua": the Castle Home, 1900-1941. *The Hawaiian Journal of History* 16:171-183.

Saturday Press

1884 Legend of Punahou Spring. Saturday Press, March. Quoted in Thrum 1891.

Sinoto, Yoshiko H.

1970 An Archaeologically Based Assessment of the Marquesas Islands as a Dispersal Center in East Polynesia. In R.C. Green and M. Kelly (eds.), *Studies in Oceanic Culture History* 1, pp. 105-132. Pacific Anthropological Records 11, Department of Anthropology, B. P. Bishop Museum, Honolulu.

1983 An Analysis of Polynesian Migrations Based on the Archaeological Assessments. *Journal de la Société des Océanistes* 39:57-67.

Smith, Marc

1988 Pu'u Pia Trail Site/Manoa Mounds Site, Honolulu, Oahu. TMK 2-9-51. State Historic Preservation Division, Department of Land and Natural Resources, Honolulu.

Smith, M. and C. Kawachi

1989 Burial Removal near Keller Hall, University of Hawaii-Manoa, Honolulu, Oahu. Site 50-80-14-4191. State Historic Preservation Division, Department of Land and Natural Resources, Honolulu.

Spriggs, Matthew and Atholl Anderson

1993 Late Colonization of East Polynesia. *Antiquity* 67:200-217.

Sterling, E.P. and C.C. Summers

1978 *Sites of Oahu*. Bishop Museum Press, Honolulu.

Thrum, Thomas

- 1891 Manoa Valley. Descriptive, Historic, and Legendary. *Hawaiian Almanac and Annual for 1892*, pp. 110-116. Thomas G. Thrum, Honolulu.
- 1906 Heiaus and Heiau Sites Throughout the Hawaiian Islands. *Hawaiian Almanac and Annual for 1907*, pp. 36-69. Thomas G. Thrum, Honolulu.

Tomonari-Tuggle, M.J.

- 1994 *The Ilikai: A Timeless Tradition. 1964-1994*. Prepared for the Ilikai Hotel Nikko Waikiki. M.J. Tomonari-Tuggle, Tucson, Arizona.
- 1997 [draft] *Kukao Heiau: A Glimpse of Mānoa's Past. Historical Research in Preparation for an Interpretive Master Plan*. Prepared for the Mānoa Valley Cultural Heritage Foundation. International Archaeological Research Institute, Inc. July.

U.S. Engineers

- 1910 Map of Honolulu. Scale 1 inch=1,000 feet. Company G, U.S. Engineers. In the files of the State Archives.

Valeri, Valerio

- 1985 *Kingship and Sacrifice. Ritual and Society in Ancient Hawaii*. The University of Chicago Press, Chicago.

Wall, W.A.

- 1887 Map of Honolulu and Vicinity. Scale 1:12,000. Hawaiian Government Survey. In the files of the State Survey Office, Honolulu.

Wentworth, Chester

- 1940 Geology and Ground-water Resources in the Manoa-Makiki District. Board of Water Supply, Honolulu (typescript in the Hawaiian-Pacific Collection, University of Hawaii Hamilton Library).

Westervelt, William D. (Rev.)

- 1903 Hawaiian Burial Caves. *Hawaiian Almanac and Annual for 1904*. Thomas G. Thrum, Honolulu.
- 1963 *Hawaiian Legends of Old Honolulu*. Charles E. Tuttle Company, Rutland, Vermont. [originally published in 1915]

Wichman, Juliet Rice

- 1931 *Hawaiian Planting Traditions*. Honolulu Star-Bulletin, Honolulu.

Yen, D.E., P.V. Kirch, P.H. Rosendahl, and T.J. Riley

- 1972 Prehistoric Agriculture in the Upper Valley of Makaha, Oahu. In E. Ladd and D. Yen (eds.), *Makaha Valley Historical Project: Interim Report No. 3*, pp. 59-94. Pacific Anthropological Records 18. Department of Anthropology, B.P. Bishop Museum, Honolulu.

PART II.
INTERPRETIVE MASTER PLAN



Kukao Heiau and the Cooke residence.

I. INTERPRETING KUKAO HEIAU

An interpretive master plan for Kukao Heiau in Mānoa Valley has been prepared at the request of the Mānoa Valley Cultural Heritage Foundation, one of two affiliated public, nonprofit charitable organizations created to preserve and interpret the historical collections and properties on the Kūali‘i estate in Mānoa Valley (the Kūali‘i Foundation is the sister organization). The estate includes Kukao Heiau, the surrounding botanical gardens, and the Kūali‘i house, with its Hawaiian art collections and rare book library. The Kūali‘i Foundation exists to maintain, operate, and preserve the historically significant properties. The Mānoa Valley Cultural Heritage Foundation conducts educational programs and activities to enhance the public’s understanding and appreciation of Hawai‘i’s cultural heritage.

The interpretation of Kukao Heiau is the first and primary public project of the Mānoa Valley Cultural Heritage Foundation. In the long term, the sister foundations plan to offer the entire Kūali‘i estate as a museum and educational resource center, to further community knowledge of the history, arts, environment, and cultural heritage of Hawai‘i and its people.

The goals of the Kukao Heiau interpretive program are to enhance the knowledge of and appreciation for a significant cultural site in Mānoa Valley, offer a venue for Mānoa residents to experience a part of the valley’s history, and establish a direction and focus for future educational programs of the Mānoa Valley Cultural Heritage Foundation.

The interpretive master plan addresses the essential components of the interpretive program, including the overall theme of the program, the specific content and presentation of public tours, the target audience, logistics, and staffing.

INTERPRETIVE PHILOSOPHY

Interpretation is an interactive process of asking questions, not only to solicit answers but also to generate more questions. First, what is understood of culture and history is translated into a language for the public. Then, in turn, the public is prompted to think about and even to challenge what has been interpreted, thus becoming an integral part of the interpretive process.

An interpretive master plan is the first step in the interactive process. Like a road map, it serves as a guide to reach a destination, but leaves open the possibility of alternative routes as well. The plan is flexible in offering different paths to achieve the interpretive

objectives, particularly as new information is found, as concerns are raised, and as new ideas are generated.

PLANNING ISSUES

Development of Kukao Heiau as an interpretive locale will take place in a social milieu that includes cultural and neighborhood concerns. The Foundation needs to address these concerns prior to implementation of the interpretive program, and then monitor the situation on a long-term basis.

Kukao Heiau is a traditional Hawaiian religious site. Given the concerns of modern day native Hawaiians about the preservation and interpretation of their culture, possible issues include how the site is interpreted, the content of the interpretation, and the need for appropriate cultural protocols as part of public tours (e.g., should visitors be allowed into the *heiau* enclosure). It is recommended that native Hawaiians be brought into the planning process as advisors or consultants to help in the development of the interpretive program. An emphasis of program development should be on developing a native Hawaiian networking base.

The other planning issue deals with being a good neighbor. The *heiau* is located in a long-established residential area, and it is essential to assure neighbors that their home life will not be compromised by the interpretive program. Possible concerns deal with increased traffic, increased noise, and the presence of non-residents in the neighborhood (i.e., intrusions into the quiet residential character of the neighborhood). It is recommended that neighbors (individually and formally through the Mānoa Neighborhood Board and/or other Mānoa community organizations) be informed early in the development process of the plans for the public program and be invited to comment on aspects of the program for which they have concerns. The interpretive program should be designed to keep visitor groups to a limited size and of relatively low frequency to ensure that traffic and noise will not be a neighborhood problem.

INTERPRETIVE THEME

An interpretive theme provides a conceptual framework for the interpretation, binding the variety of data about the *heiau* into a story that engages the visitor. A common thematic thread for interpreting Kukao Heiau is the concept of change, that is, the *heiau* as an artifact of a dynamic history of cultural, environmental, and archaeological change. In dealing with an historic site like Kukao Heiau, an underlying theme of the interpretation is site conservation, i.e., the concept of preserving historical sites as a manifestation of our common human past.

HISTORICAL CHANGE: THE EVENTS OF HISTORY

Kukaoo Heiau is one link in a long history of Mānoa Valley. This theme most easily incorporates the *heiau* into the Cooke estate, as part of the cultural and historical use of the property as a whole. Interpretation can present the chronological events of the valley, the social history of the Kūali‘i estate, and the present and future use of the *heiau*. It can also introduce historical individuals who were involved with the area: the chief Kūali‘i of prehistoric times, the chiefs of the early 1800s (Kamehameha, Ka‘ahumanu, Boki, and Liliha), the new residents of the late 1800s (Thrum, Cooper, and others), and of course, the Cookes.

CULTURAL CHANGE: HOW HAWAIIAN CULTURE HAS EVOLVED

The cultural theme interprets the *heiau* in terms of its function as a Hawaiian temple, placing it in the context of traditional Hawaiian culture in Mānoa and the larger island region. The chief Kūali‘i is an eminent focal point for this interpretation: as an historical individual, he brings a sense of human-ness to the site; as a legendary figure, he represents Hawaiian concepts relating to myth and mythological characters (like the *menehune*), social and political development, religion and ceremony. Through the figure of Kūali‘i, the interpretation can go beyond what is simply the single *heiau* structure into a wide-ranging discussion of the nature of *heiau*, particularly in discussing how the purpose of a *heiau* may have changed over time (political to agricultural).

The concept of changing traditions can also be introduced¹¹. What are the traditions that may once have guided the use of the *heiau*? How would that have been related to agriculture in the valley? What traditions are now maintained in this and other *heiau*? What are modern Hawaiian protocols for the *heiau*?

ENVIRONMENTAL CHANGE: HUMANS INTERACTING WITH NATURE

The environmental theme has the *heiau* as a focus for discussing the importance of environmental stewardship, particularly in the context of Hawai‘i as a bounded island with constrained resources. The *heiau* sits on the edge of high outcrop with an outstanding view of Mānoa Valley. Such a location offers an opportunity to survey the modern landscape and pose questions about how Hawaiians lived in centuries past, how their stewardship of the land operated (i.e., a caring for the land that is inherent in a subsistence economy), and how

¹¹ Refer to Section II of Part I, Historical Research, for discussion of *heiau* traditions.

that stewardship compares to present development in the valley. The *heiau* presented in its agricultural role is a tangible connection to Hawaiian use of the land.

This theme also provides an opportunity to discuss geological change in the context of how Mānoa Valley was created.

ARCHAEOLOGICAL CHANGE: THE HEIAU AS A DYNAMIC SITE

Kukao Heiau is an archaeological site, a dirt-floored, stone-walled enclosure that has survived the development of modern Mānoa Valley. It is one of the few such artifacts of ancient Hawaiian times that remain in the valley, and as such, it is a dynamic monument to both the long ago Hawaiian religion, as well as an ethic of contemporary stewardship. The discussion can begin with the *heiau* as a functioning Hawaiian religious structure, with its subsequent existence as only stone remains in a changing landscape and now in a new role as a focus for the Kūali'i interpretive program. This discussion offers the opportunity to emphasize historic preservation values.

INTERPRETIVE CONTENT

The historical research presented in Part I of this report serves as the data base for the *heiau* interpretation, with the interpretation designed as a story of the *heiau*, with a beginning, middle, and end. The beginning is Kukao Heiau in the context of modern Mānoa Valley. The middle segment of the story draws the visitors into the past, to the times that Kukao Heiau was a functioning temple. The denouement brings the visitors through historical times to the present, with the role of a renewed *heiau* as a significant and valuable place of education. Variations on the story and in the subtexts of the theme of change can be developed for different visitor groups.

The interpretive program should respond to audience questions or comments by continuing to evolve over time. In other words, the present research is not an end product but rather a foundation for gaining more insight on the *heiau* and its environs (for example, from cultural advisors or tour participants). Interpretive tours should always acknowledge that there are different perspectives and then use these perspectives as a way to challenge the visitor.

Some anticipated questions from visitors include:

- What is the connection between the residence and the *heiau*?
- What kind of ceremonies took place in the *heiau*?
- Is this all there is to a *heiau* (what else was on the structure?)

- Why does this *heiau* look different from other *heiau* on O‘ahu, like Kāne‘ākī in Mākaha or Ulupō in Kailua?
- How do you know how old the *heiau* is?
- What are the meaningful stories of the *heiau*?

INTERPRETIVE PRESENTATION

Interpretive presentation deals with the way in which information is conveyed to the public. From the outset of this project, the primary method of presentation proposed for Kukaoo Heiau has been small guided tours using trained interpreter guides. It is recommended that interpreters either carry hand-held illustrations or use strategically placed exhibits to complement their presentations.

Possibilities for graphical interpretations include plan view and perspective drawings of the *heiau* showing what it might have looked like while it was being used, a panoramic rendering of Mānoa in prehistoric times as seen from the *heiau*, historical photos of Mānoa at different time periods (from the general area of the *heiau*), and maps of Mānoa showing settlement at different time periods. All illustrative materials should be designed with common graphic elements (text type, border design, color, layout) that identify the material with the Kukaoo Heiau program.

An important consideration in interpretive presentation is to encourage continued long-term interest in the *heiau*. Printed material such as a brochure or well-illustrated interpretive book can present detailed information about the *heiau* that can be taken back to school or home and serve as a reminder of the tour experience. It can also include sources for additional readings as a way to encourage continued learning about the *heiau* specifically and other more general subjects. Off-site presentation is another method of conveying information about the program. Such presentations can take information about the *heiau* to individuals or groups to encourage participation in the tours (as well as to prepare groups for the tours), or to address larger groups that cannot be logistically accommodated on-site.

A video presentation of the tour could address the access limitations for physically challenged individuals.

TARGET AUDIENCE

The target audience is the primary group for whom the interpretation is being done. Designation of a specific target group, especially at this nascent stage of interpretive program development, focuses the content and level of complexity of interpretive presentations. As the program grows and develops, then the target audience can be broadened. At this point, the target audience is identified as Mānoa-based youth groups (e.g., through schools and

organizations such as the Boy and Girl Scouts and churches), with a secondary audience of Mānoa neighbors and interested residents.

LOGISTICS

Logistics addresses basic tour requirements of access to the property, parking, tour route, and trail construction. The proposed interpretive program involves interpreter-guided tours along the existing path around the *heiau* and through the botanical garden. Tours are proposed to start and end in an orientation area set up in the parcels to the south and below the *heiau*.

At present and subject to review after a trial period of operations, the intent is to limit tours to a maximum of 15 people. This number is based on the trail characteristics in which there are few places that can comfortably accommodate more than this number of individuals. This group size also limits the number of vehicles, which may be a concern to neighbors.

It is recommended that vehicle access be from O‘ahu Avenue to the orientation area.

New construction is required at the proposed orientation area in the lower parcel. Initially, this can be limited to a paved staging area, although in the long run, a shelter and possibly an introductory exhibit can be developed. A trail connecting the orientation area with the existing path also needs to be constructed.

STAFFING

The interpretive program has staffing requirements related to three primary areas of responsibility: administration, tours, and site protocol. Administrative responsibilities deal with day-to-day operations, budget management and grants writing, development of future programs (e.g., continuing historical research, expanding visitor opportunities), coordination with other interpretive organizations (e.g., government agencies like State Parks, and private museum organizations and neighborhood groups), and overall management of tours and site protocol. A key administrative role in the early development of the program is networking with neighborhood and native Hawaiian interests.

Tour responsibilities include scheduling and conducting tours, doing off-site presentations, and coordinating interpreters. Interpreter selection and training will be particularly critical; Grinder and McCoy (1985) is a useful reference for interpretive development. Interpreters should have an interest in and knowledge of the Cooke estate and Kukao Heiau specifically and Hawaiian history and religion in general. They should be skilled in verbal communication, with an emphasis in working with others, encouraging participation in group discussions, and stimulating curiosity in the tour participants. They should be willing to pursue continued learning in the subject matter. Interpreters should be

conscientious in preparing for and attending training sessions and guides meetings, and in fulfilling tour commitments.

Training should involve instruction in both the curriculum of the tour and in the methods of public contact and interpretation. For background, interpreters should become familiar with Part I of this report, particularly the chapter on the *heiau* itself. They should familiarize themselves with the references listed in Appendix A, particularly the literature on Hawaiian *heiau* and religious practices related to agriculture, especially Wichman (1931), Malo (1951), Hiroa (1957), Handy et al. (1972), Kamakau (1976), Valeri (1985), and Cachola-Abad (1996), in anticipation of questions about how Kukaoo Heiau was used and what practices took place in the *heiau*.

Site protocol responsibilities are particularly important. It is recommended that the Foundation work with a native Hawaiian advisor or consultant to develop a position description for a *kahu* or caretaker of the *heiau*. In general, the role of the *kahu* would be to take care of *heiau* itself (e.g., blessing the site, ensuring that *ho'okupu* offerings brought by visitors are culturally appropriate, fielding inquiries about cultural protocol). The Foundation could also form an advisory committee to advise the *kahu* on specific protocol questions. If a *kahu* position is established, there needs to be clear guidelines as to the extent of this individual's roles and responsibilities.

II. A TRIAL INTERPRETIVE TOUR

The Kukao Heiau interpretive program is the first of its kind in a residential Mānoa area. It is therefore recommended that a trial tour be set up for a period of six months, with the primary intent being to elicit reactions, comments, and suggestions from visitors, interpretive professionals, and community planners, as well as neighborhood and native Hawaiian interests. The trial period will allow experimentation with and evaluation of the interpretive tour, particularly in determining constraints and opportunities that should be addressed. A trial period will also provide a sound basis for formalizing the interpretive program, especially in regard to planning and zoning considerations of the City and County of Honolulu.

Because the intent of the trial program is to evaluate a variety of situations, it is recommended that the different constituencies be invited to join and then evaluate the tours. Constituencies include neighbors and Neighborhood Board representatives, native Hawaiians, archaeologists/anthropologists, professional interpreters, and teachers, with an emphasis on individuals and groups with an interest in Mānoa Valley. Groups of children of different ages should also be invited. Evaluations can be through either post-tour interviews or formal questionnaires.

During the trial period, tours will be given in small numbers to school classes, teachers, and youth organizations such as the Boy and Girl Scouts, church groups, and special interest clubs in schools. A maximum group size of 15 is recommended; for larger groups such as school classes, a class can perhaps be divided into two sub-groups to visit the *heiau* during a tour day.

The trial period will require provisions for vehicular access to the property, parking for a minimum of five cars (based on a recommended maximum group size of 15), and construction of the trail connecting the lower parcel with the existing path.

The trial tour presented below is a basic outline for interpretation that can be fleshed out and modified for different audiences. For example, elementary school age children may require a more interactive approach to the presentation than an adult audience.

PRE-TOUR PREPARATIONS

Prior to the actual tour, an information packet should be provided to the group leader or responsible individual for the invited organization. The packet, which could be in the form of a formal brochure, should include information on access, parking, and rules of conduct

(relative to the site as well as the neighborhood), as well as a basic description of the *heiau* and the tour. This information will be reiterated during the orientation on-site.

For younger visitors, it is beneficial to have staff presentations prior to the actual tours. This would be particularly helpful as a means to assess the level of knowledge of a particular group and to help interpreters prepare their tour. In addition, the staff presentation also provides an opportunity to invite the young visitors to think of questions that could be asked on-site. For example, there are numerous traditional Hawaiian place names that have been formalized in modern times as street names (e.g., Kolowalu Street, Pamoia Road, Hipawai Place). The children could be asked to find their homes on a street map of Mānoa which could be then superimposed on a historical map of the valley showing place names and land uses (see Figures 7 and 8 in the historical report). Later, the exercise could be repeated on-site with the children pointing out their homes and discussing the Hawaiian places and uses that might have occurred.

Another possibility for younger visitors is to provide sufficient information before hand to allow the children to develop their own research and interpretation (this, of course, requires intense preparation on the part of the group leader or teacher). On-site, the children themselves would be responsible for the interpretative talks along the trail, thus allowing them to take an active role in the tour.

PROPOSED TRIAL HEIAU TOUR

The proposed trial tour is assumed to be interpreter-guided with a maximum of 15 participants. The tour begins at an orientation area in the lower parcel, with a second introductory area on the lawn *mauka* of the residence. Illustrative materials for various interpretive stops are suggested. The basic concept of the trial tour is to gradually draw visitors back to the time of the *heiau* and to encourage them to imagine what the site and Mānoa may have looked like in the past; the conclusion of the tour is designed to bring the visitors back to the present. Interpretive stops are keyed to Figure 10.

1. Lower parcel parking area. Although this location is technically the beginning of the interpretive program, presentation at this point focuses on introducing the rules of the tour and generalizing on what will be experienced. An aerial photograph of the *heiau* and house (e.g., Photos 2 and 3 in the historical report) could be used to orient the visitors.
2. Walking up the path to the upper lawn. This is a transitional segment of the tour, taking the visitors from the orientation/parking area in the “present day” Mānoa, to an earlier time and place represented by the *heiau*. The path through the botanical garden allows the interpreter to comment on the natural landform, that is, emphasizing to the visitors that they are actually walking up to the top of a ridge, which begins the process of drawing the visitors back to the time of the *heiau* (i.e., to feeling what the area may have been like before the modern development of Mānoa).

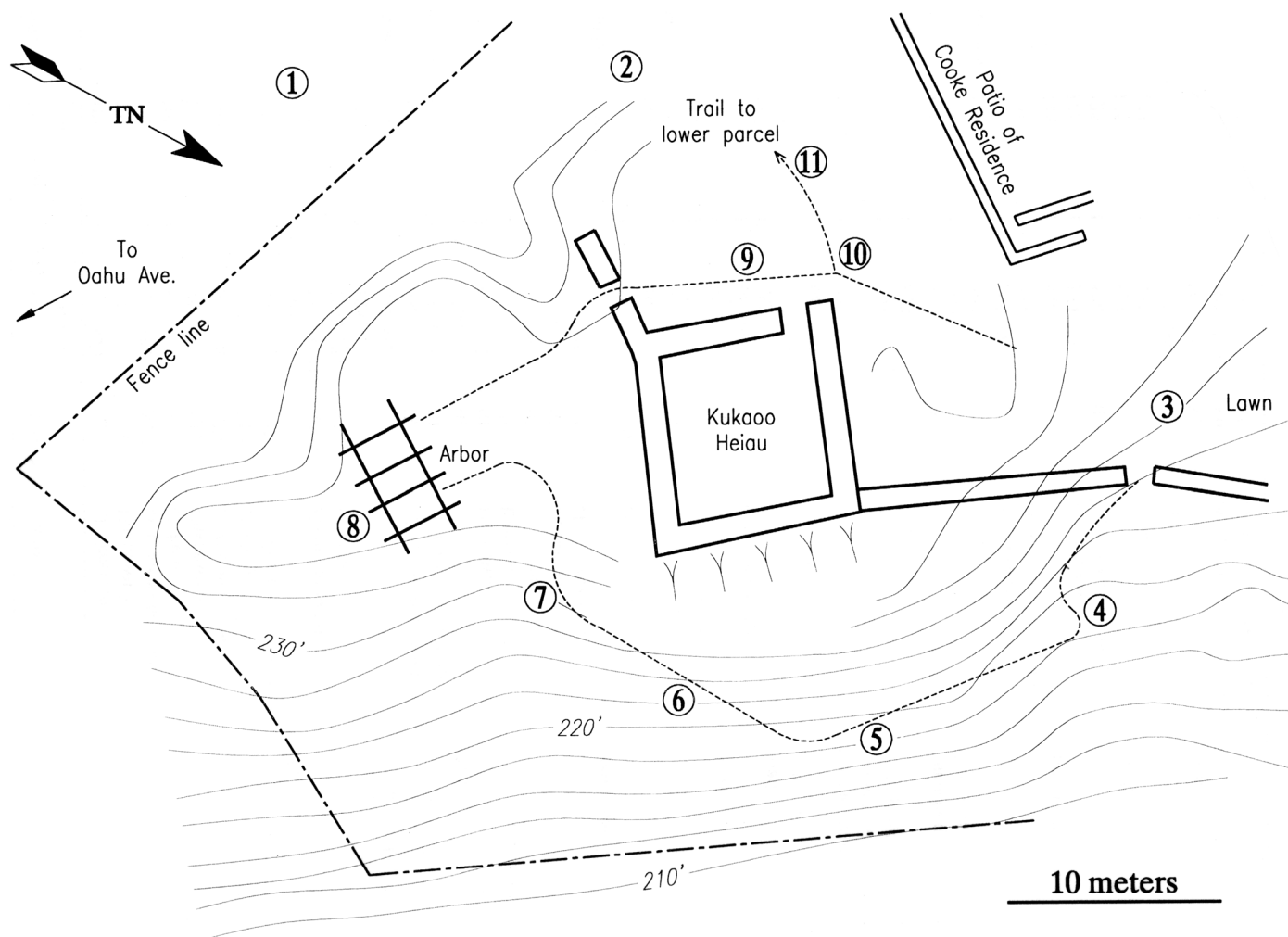


Figure 10. Proposed Trial Tour of Kukao Heiau (schematic rendering of the *heiau* and trail, superimposed on topographic contours from Figure 2 of the historical report).

3. On the lawn. This is an ideal welcoming location for the tour. Visitors should be encouraged to sit while the interpretive introduction is presented (chairs could be provided for adults; children can sit on the grass). The introduction is a welcoming statement from the Cooke family (*komo mai*) that includes a brief history of the estate to orient the visitors to their location. Visitors (especially children) should be reminded about the protocols for being in and around a *heiau*, as well as being guests in a residential neighborhood.
4. On the trail below the stone wall. The *heiau* is not yet clearly visible from this point, which allows for discussion of the natural history of the area; i.e., the environment in which the *heiau* is located. The interpreter notes the steep slope and describes how the visitors have essentially crossed the top of the ridge. This offers the chance to introduce the Pu‘u Kākea lava flow and how it created the high ground of west Mānoa Valley. This is also a good location to comment on how difficult it is to “see” natural conditions under the modern veneer of houses and landscaping.
5. Initial view of the *heiau* facing. The first view of the *heiau* is complemented by the Kukao legends, especially the *menehune* connection. This discussion is not so much to tell visitors that the *menehune* built the *heiau*, but rather that this particular *heiau* has a place in Hawaiian oral traditions (unlike many temples for which there are no traditions at all).
6. View of the hill slope below the facing. This interpretive stop provides a segue from legend to history. Discussion focuses on the historical figure of Kūali‘i as one of the last great O‘ahu chiefs, but also brings in the information from the test excavations carried out by Cleghorn and Anderson (1992), specifically radiocarbon dates that roughly correlate with the genealogical dating of Kūali‘i to the early 1700s.
7. View of the *heiau* facing as the trail rises back to the top of the ridge. This location provides a close-up of the massive *heiau* facing. The interpreter can ask if visitors know how structures like this are built (dry stone masonry; use of natural slope to create imposing edifice), how many people might have been involved, what the source of the stone would have been. Mention might also be made of the 1994 reconstruction.
8. The arbor view of Mānoa. Because of the exceptional panoramic view of the valley and the Waikīkī plain, this is an interpretive locale that offers a number of opportunities for different audiences. Topics that could be discussed include:

History of land use and settlement in Mānoa, comparing what the Hawaiian settlement may have been with the present Mānoa development. A series of photographs and drawings depicting Mānoa at different periods of time could be used as a contrast with the view.

The place of Kukao Heiau in the Hawaiian settlement of Mānoa. This topic focuses specifically on Hawaiian settlement, with a discussion of agriculture in the valley, other *heiau* in Mānoa, as well as ties to Waikīkī as a chiefly center and other parts of O‘ahu. A panoramic rendering of Mānoa showing agricultural areas and the likely locations of the other valley *heiau* would be a helpful illustration.

Hawaiian and modern place names. This is an interactive topic in that visitors (particularly Mānoa residents) can point out the place names that they know (e.g., the street on which they live) and discussion can revolve around origins and changes in place names over time. As noted above, an effective “game” for school children, especially if they are prepared during the pre-tour briefing, can be locating their houses and talking about the old Hawaiian names and uses for the areas around which they now live.

Problems of development in the valley environment. This topic discusses Hawaiian changes to the Mānoa landscape as a prelude to raising contemporary issues of environmental stewardship, the point being the interconnectedness (i.e., cause and effect) of human actions and environmental changes. An example is the development of the Roundtop Road (on the ridge above Mānoa) in 1923, and the subsequent flooding of Gore Road inland of the Cooke residence after a period of heavy rainfall.

9. View of the interior of the *heiau*. This interpretive stop focuses on the *heiau* itself. What kind of *heiau* is this? What does the name Kukao mean? What is the platform in the interior (the altar) for? What gets left on the altar? Why does this *heiau* look different from well known temples like Pu‘u o Mahuka at Pūpūkea and Kāne‘ākī at Mākaha? Were the ceremonies different at different *heiau*? Drawings of other *heiau*, especially the artwork of the early explorers to Hawai‘i (rather than simple maps), could be used to show what *luakini* superstructures might have looked like, as compared to an agricultural *heiau* like Kukao.
10. View of the Cooke residence. The striking contrast and close proximity between the *heiau* and the residence is raised, and used as the opportunity to relate how the *heiau* was preserved at the time that the house was built in 1911. The *heiau* was certainly known by the Cookes to be a temple, having been identified by Thomas Thrum (a former resident of the area) in his 1906 survey of *heiau* in Hawai‘i. A photograph such as shown in Photo 7 of the historical report can illustrate the extent of ground disturbance during the house construction, emphasizing the care that was taken to protect the site. This discussion could then extend to issues of historic preservation in Hawai‘i, which would be fitting end to the tour.
11. Conclusion in the botanical garden. This last stop on the tour offers an opportunity for questions from the group before dispersing. If desired, the group could be allowed to tour the garden on their own.

III. SUMMARY OF RECOMMENDATIONS

This section outlines the recommendations of the interpretive master plan, in terms of actions that need to be taken immediately and those that are on-going program requirements. Future actions that would enhance the interpretive program are also made.

THE SHORT TERM: IMMEDIATE NEEDS

A conditional use permit (CUP) from the City and County of Honolulu is necessary to allow the interpretive program on the Kūali'i estate. It is anticipated that an application for the permit will be submitted in mid-1998. The following recommendations are for actions that can be taken prior to or concurrent with the permit process.

- [1] Begin networking with native Hawaiian interests to help define native Hawaiian concerns and discuss options for dealing with those concerns. Develop ideas for a *kahu* for the *heiau* in terms of roles and responsibilities. It is recommended that native Hawaiian advisors or consultants help in the development of the interpretive program. This action should be started as early as possible in the process.
- [2] Begin networking with neighbors to help define neighborhood concerns and discuss alternatives for dealing with those concerns. It is recommended that neighbors (individually and formally through the Mānoa Neighborhood Board and/or other Mānoa community organizations) be informed early in the development process and be invited to comment on aspects of the program for which they have concerns.
- [3] Begin networking with prospective visitor groups. Off-site presentations can take information about the *heiau* to individuals or groups to develop interest in the Kukao Heiau program, as well as to address larger groups that cannot be logistically accommodated on-site.
- [4] Clearly define staffing requirements and develop position descriptions.
- [5] Begin development of the trial interpretive tour in terms of tour content and illustrative materials. Illustration possibilities include drawings of the *heiau* showing what it might have looked like while it was being used, a panoramic rendering of Mānoa in prehistoric times

as seen from the *heiau*, historical photos of Mānoa at different time periods (from the general area of the *heiau*), and maps of Mānoa showing settlement at different time periods. All illustrative materials should be designed with common graphic elements (text type, border design, color, layout) that identify the material with the Kukao Heiau program.

- [6] Develop an interim parking and orientation area in the lower parcel and construct the trail connecting the lower parcel to the existing path.
- [7] Prepare a pre-tour information packet, possibly a formal brochure. An important consideration in interpretive presentation is to encourage continued long-term interest in the *heiau*. Printed material such as a brochure can present detailed information about the *heiau* that can be taken back to school or home and serve as a reminder of the tour experience. It can also include sources for additional readings as a way to encourage continued learning about the *heiau* specifically and other more general subjects.
- [8] Begin development of the interpreter training program. Develop a reference library for interpreter training that, at a minimum, contains all research materials listed in Appendix A. Prepare the interpreter training curriculum.

ON-GOING ACTIONS

- [1] Continue historical research on the Cooke property and the *heiau* as part of continuing curriculum development. Research might include oral history interviews with residents and neighbors of the estate and research into various photo collections for additional illustrative materials.
- [2] Continue networking with neighbors and native Hawaiian contacts. Ensure that there is continuing dialogue on opportunities and constraints of the interpretive program relative to the respective interests.
- [3] Continue networking with other historic preservation and interpretation organizations.
- [4] Continue developing a visitor base.
- [5] Establish staff positions and begin development of the interpreter corps.

- [6] Once the planning and zoning requirements of the City and County of Honolulu have been met, develop the orientation center and parking area on the lower parcel.
- [7] Evaluate the interpretive program on an on-going basis. Upon conclusion of the trial period, conduct a full evaluation in terms of all aspects of the interpretation, as well as dealing with planning issues and concerns.

THE LONG TERM: RECOMMENDATIONS FOR FUTURE WORK

The following recommendations are proposals for future work that are not immediately essential but will ultimately enhance the interpretive program, especially since it is anticipated that the *heiau* tour will become part of a larger preservation and public program focused on the Cooke residence.

- [1] Work with the Interpretive Program of the Division of State Parks, Department of Land and Natural Resources, to integrate Kukao Heiau with the larger statewide *heiau* interpretation and community curator program.
- [2] Develop quarterly workshops to encourage collaboration with other related community and government agencies such as the State Parks Interpretive Program, State DOE teachers' workshops, and local museum support groups (e.g., Hui o Laka on Kaua'i).
- [3] Develop a companion tour in the Hawaiian language.
- [4] Continue networking with neighbors, Mānoa community organizations, historic preservation groups, and native Hawaiian organizations.
- [5] Develop more elaborate multi-media components (e.g., video, large format photo book) to complement the grounds tour. A video presentation of the tour could address the access limitations for physically challenged individuals. A well-illustrated interpretive book can present anthropological, historical, and other cultural research findings and perspectives.

REFERENCES

Baldwin, E.D.

- 1882 Map of Manoa Valley. Scale 1:6000. Government Register Map 1068, in the files of the State Survey Office. [tracing of GRM 1068 by H.E. Newton, dated March 1904]

Baldwin, E.D. and W.D. Alexander

- 1882 Survey of Manoa Valley, Manoa, Oahu. Field Book. Register No. 233, in the files of the State Survey Office, Honolulu.

Beckwith, Martha

- 1970 *Hawaiian Mythology*. University of Hawaii Press, Honolulu.

Cachola-Abad, C. Kēhaunani

- 1996 The Significance of Heiau Diversity in Site Evaluations. *CRM* 8:11-16.

Cleghorn, P.L. and L. Anderson

- 1992 Archaeological Inventory Survey in Manoa Valley, O'ahu (TMK: 2-9-19-36) and Preservation Plan for Kukao'o Heiau. Prepared for Samuel A. Cooke. Paul Cleghorn Consulting, Kailua.

Damon, Ethel M.

- 1941 From Manoa to Punahou. *Forty-Ninth Annual Report of the Hawaiian Historical Society for the Year 1940*. May.

Emery, Byron Elwyn

- 1956 Intensification of Settlement and Land Utilization Since 1930 in Manoa Valley, Honolulu. M.A. thesis, University of Hawaii, Honolulu.

Fornander, Abraham

- 1917 History of Kualii. *Fornander Collection of Hawaiian Antiquities and Folk-Lore*. B.P. Bishop Museum Memoirs IV(II):364-434. Bishop Museum Press, Honolulu.

- 1969 *An Account of the Polynesian Race. Its Origin and Migrations and the Ancient History of the Hawaiian People to the Times of Kamehameha I*. Charles E. Tuttle Company, Rutland, Vermont. [originally published in three volumes in 1877, 1879, and 1884]

Grinder, Alison L. and E. Sue McCoy

- 1985 *The Good Guide: a Sourcebook for Interpreters, Docents, and Tour Guides.* Ironwood Press, Scottsdale, Arizona.

Grune, Anna Maria R.

- 1992 Archeological Synthesis of Waikiki Ahupua'a Focusing on Manoa Valley, 'Ili of Waikiki, Waikiki, Island of O'ahu, Hawai'i. Student paper, Department of Anthropology, University of Hawaii, Honolulu. In the files of the State Historic Preservation Division, Department of Land and Natural Resources, Honolulu.

Handy, E.S.C., E. Handy, and M.K. Pukui

- 1972 *Native Planters in Old Hawaii.* B.P. Bishop Museum Bulletin 233. Bishop Museum Press, Honolulu.

Kamakau, Samuel M.

- 1976 *The Works of the People of Old. Na Hana a ka Po'e Kahiko.* B.P. Bishop Museum Special Publication 61. Bishop Museum Press, Honolulu.

Kennedy, Joseph

- 1991 Letter report re: archaeological examination of Kukao'o Heiau. Prepared for NAMAHE Associates. Archaeological Consultants of Hawaii, Haleiwa.

Kolb, Michael

- 1991 Social Power, Chiefly Authority, and Ceremonial Architecture, in an Island Polity, Maui, Hawaii. Ph.D. dissertation, Department of Anthropology, University of California at Los Angeles.

Kondo, Y. and W.J. Clench

- 1952 *Charles Montague Cooke, Jr., A Bio-Bibliography.* B.P. Bishop Museum Special Publication 42. The Museum, Honolulu.

Luscomb, Margaret L.K.

- 1975 Report on Inspection of Heiau at 2626 Anuenue St., Manoa, Oahu. Typescript on file in the State Historic Preservation Division, Department of Land and Natural Resources. July 30. [presumed to be a B.P. Bishop Museum document]

MacCaughey, Vaughan

- 1917 The Phytogeography of Manoa Valley, Hawaiian Islands. *American Journal of Botany* 4:561-603.

Malo, David

- 1951 *Hawaiian Antiquities.* Bishop Museum Press, Honolulu.

McAllister, Gilbert

- 1933 *Archaeology of Oahu*. B.P. Bishop Museum Bulletin 104. Bishop Museum Press, Honolulu.

Moffat, R.M. and G.L. Fitzpatrick

- 1995 *Surveying the Mahele*. Editions Limited, Honolulu.

MVR (Manoa Valley Residents)

- 1994 *Manoa. The Story of a Valley*. Mutual Publishing, Honolulu.

Thrum, Thomas

- 1891 Manoa Valley. Descriptive, Historic, and Legendary. *Hawaiian Almanac and Annual for 1892*, pp. 110-116. Thomas G. Thrum, Honolulu.
- 1906 Heiaus and Heiau Sites Throughout the Hawaiian Islands. *Hawaiian Almanac and Annual for 1907*, pp. 36-69. Thomas G. Thrum, Honolulu.

Tomonari-Tuggle, M.J.

- 1997 [draft] *Kukao Heiau: A Glimpse of Mānoa's Past. Historical Research in Preparation for an Interpretive Master Plan*. Prepared for the Mānoa Valley Cultural Heritage Foundation. International Archaeological Research Institute, Inc. July.

U.S. Engineers

- 1910 Map of Honolulu. Scale 1 inch=1,000 feet. Company G, U.S. Engineers. In the files of the State Archives.

Valeri, Valerio

- 1985 *Kingship and Sacrifice. Ritual and Society in Ancient Hawaii*. The University of Chicago Press, Chicago.

Wall, W.A.

- 1887 Map of Honolulu and Vicinity. Scale 1:12,000. Hawaiian Government Survey. In the files of the State Survey Office, Honolulu.

Wentworth, Chester

- 1940 Geology and Ground-water Resources in the Manoa-Makiki District. Board of Water Supply, Honolulu (typescript in the Hawaiian-Pacific Collection, University of Hawai'i Hamilton Library).

Westervelt, William D. (Rev.)

- 1903 Hawaiian Burial Caves. *Hawaiian Almanac and Annual for 1904*. Thomas G. Thrum, Honolulu.

**APPENDIX A.
BIBLIOGRAPHY OF RESOURCES**

APPENDIX A. BIBLIOGRAPHY OF RESOURCES

There are innumerable sources of information that were used to prepare this document. They are listed in the following tables, which are organized by the type of resource (text, photograph, map, potential oral informant). These tables identify the resource and give the title (if published), the repository, and the nature of the information.

Table A-1. Text Sources for Information on Kukaoo Heiau and Related Subjects

Author	Date	Title	Type of Information	Repository*
Baldwin, E.D. and W.D. Alexander	1882	Field Book of Survey of Manoa Valley	survey information; handwritten notes; metes and bounds; sketches show stone walls, roads, houses	Register No. 233, State Survey Office
Beckwith, M.	1970	<i>Hawaiian Mythology</i>	presents and analyzes the Kūali'i legend (p. 394-399)	Hawaii State Library
Cleghorn, P.L. and L. Anderson	1992	<i>Arch. Inventory Survey in Manoa Valley, Oahu, and Preservation Plan for Kukao'o Heiau</i>	archival research, mapping, test excavations at Kukaoo Heiau; 2 RC dates; recommendations for buffer zone, wall stabilization, additional excavation	SHPD Library
Damon, E.M.	1941	From Manoa to Punahou (in 49 th <i>Annual Report of the Hawaiian Historical Society</i>)	description of early development of Punahou School	UH Hamilton Graduate Library
Emery, B.E.	1956	Intensification of Settlement and Land Utilization since 1930 in Manoa Valley, Honolulu	M.A. thesis; describes natural conditions of valley, changes in land use and residential patterns between 1930 and 1955	UH Hamilton Graduate Library
Ethnic Studies Oral History Project (Ethnic Studies Program, UH)	1982	Catalog of Oral History Collections in Hawaii	listing of oral history interviews, organized by project; for Mānoa, this is the Manoa History Seminar (Lyon Arboretum); includes informant, subject, and status of interview documentation	UH Hamilton Graduate Library (reference shelf)
Fornander, A.	1917	History of Kualii (in <i>Fornander Collection of Hawn Antiquities and Folk-Lore</i>)	tradition of the chief Kūali'i, including portions of his 600+ line chant	UH Hamilton Graduate Library
Fornander, A.	1969	<i>An Account of the Polynesian Race</i>	discusses the Kūali'i legend (p. 278-288)	Hawaii State Library
Grune, A.M.R.	1992	Arch. Synthesis of Waikiki Ahupua'a focusing on Manoa Valley	student paper summarizing previous archaeological studies of Mānoa and Waikiki	SHPD Library
Hiroa, Te Rangi	1957	<i>Arts and Crafts of Hawaii, XI. Religion</i>	discusses Hawaiian religion, temples, images, offerings	Hawaii State Library
Kamakau, S.M.	1976	<i>The Works of the People of Old</i>	chapters on cultivation and <i>heiau</i>	Hawaii State Library
Kauaililinoe, J.W.K.	1872	Manoa and its Features	translation of letter to <i>Ku'oko'a</i> newspaper; lamenting gambling and hula taking place in the valley	B.P. Bishop Museum Archives (HEN:3106-7)
Kennedy, J.	1991	Arch. Examination of Kukao'o Heiau	letter report to H.L. Wrenn re: brief background survey and mapping of <i>heiau</i>	SHPD Library

Table A-1. Text Sources for Information on Kukaoo Heiau and Related Subjects (cont.)

Author	Date	Title	Type of Information	Repository*
Kolb, M.	1991	<i>Social Power, Chiefly Authority, and Ceremonial Architecture, in an Island Polity, Maui, Hawaii</i>	Ph.D. dissertation; study of Maui <i>heiau</i> , including results of excavations at eight sites; data used to develop model for <i>heiau</i> development over time as reflection of political and social changes	SHPD Library
Kondo, Y. and W.J. Clench	1952	<i>Charles Montague Cooke, Jr., A Bio-Bibliography</i>	biography of C.M. Cooke, Jr.; list of titles and scientific names of plants and mollusks described by C.M. Cooke, Jr.	B.P. Bishop Museum Library
Luscomb, M.L.K.	1975	Report on Inspection of Heiau at 2626 Anuenue St., Manoa, Oahu	typescript report on brief inspection of platform at this address; interprets site to be Kawapopo Heiau	SHPD Library
MacCaughey, V.	1917	Phytogeography of Manoa Valley, Hawaiian Islands (in <i>American Journal of Botany</i>)	study of physical zones and corresponding vegetation in the valley; includes photographs and maps	UH Hamilton Graduate Library
McAllister, G.	1933	<i>Archaeology of Oahu</i>	survey of sites on Oahu; compiles legendary as well as archaeological info	UH Hamilton Graduate Library
Moffat, R. and G. Fitzpatrick	1995	<i>Surveying the Mahele</i>	section on Mānoa Valley	Hawaii State Library
MVR	1994	<i>Manoa. The Story of a Valley</i>	historical and oral historical essays about Manoa Valley; strong architectural component	Hawaii State Library
Thrum, T.	1891	Manoa Valley. Descriptive, Historic, and Legendary (in <i>Hawaiian Almanac and Annual for 1892</i>)	essay on Manoa in 1891; includes legends, descriptions of Manoa residents, houses, roads	Hawaii State Library
Thrum, T.	1906	Heiaus and Heiau Sites Throughout the Hawaiian Islands (in <i>Hawaiian Almanac and Annual for 1907</i>)	descriptions of <i>heiau</i> , collected from oral informants, on-site inspections	Hawaii State Library
Valeri, V.	1985	<i>Kingship and Sacrifice. Ritual and Society in Ancient Hawaii</i>	analysis of Hawaiian religion, <i>heiau</i> , relationship to political and social structure	UH Hamilton Graduate Library
Westervelt, W.D. (Rev.)	1903	Hawaiian Burial Caves (in <i>Hawaiian Almanac and Annual for 1904</i>)	includes descriptions of Kūali'i	Hawaii State Library
Wentworth, C.	1940	Geology and Ground-water Resources in the Manoa-Makiki District	manuscript describing geology and groundwater of Mānoa-Makiki area; one of extensive series covering island of Oahu	UH Hamilton Graduate Library

* lists only the most easily accessible source.

Table A-2. Map Sources for Kukaoo Heiau and Related Subjects.

Surveyor	Date	Location	Scale	Type of Information	Repository
Baldwin, E.D	1882	Mānoa Valley	1:6000	land grants, LCAs, houses, place names	State Survey Office, GRM 1068
Baldwin, E.D.	n.d.	Mānoa Valley	1:6000	reduction of Metcalf 1847	State Survey Office, GRM 948
BPBM	[1957]	Kukaoo Heiau	1in=10ft	field and final drawings of heiau; surveyor unknown but finished drawing is signed "Maieie Cameron, April 30, 1957"	Bishop Museum Archives, MS Anthro Grp 7, 6.8
LaPasse, J.M.H.	1855	Honolulu	?	trails, taro fields, fishponds; excellent illustration of Mānoa in relation to Honolulu	published in Fitzpatrick 1986
Lydgate	n.d.	Mānoa Valley	10chns=1in	copy of Metcalf 1847	State Survey Office, GRM 119
McAllister, G.	1933	Site 64	not to scale	sketch of heiau	published in McAllister 1933
Metcalf, T.	1847	Mānoa Valley	10chns=1in	grants, LCAs	State Survey Office, GRM 125
Monsarrat, M.D.	1897	Honolulu	1in=1,000ft	roads, place names, buildings; good general perspective of Mānoa in relation to Honolulu	State Survey Office, GRM 1210
Newton, H.E.	1904	Mānoa Valley	1:6000	tracing of Baldwin 1882	State Survey Office, GRM 1068
U.S. Engineers	1910	Honolulu	1in=1,000ft	topographic map with vegetation and cultural details (stone walls, roads, houses)	State Archives
Wall, W.A.	1887	Honolulu	1:12,000	general map of Honolulu	State Survey Office

Table A-3. Photo Sources for Kukaoo Heiau and Related Subjects.

Photo ID	Date	Image	Repository
CLS 101.950	1890-1905	view of upper east Mānoa Valley from general area of heiau; taro fields, houses (photographer - Harshaw?)	Bishop Museum Archives
101.673	Oct 1911	view of Cooke residence under construction, looking north from Oahu Avenue; pasture in foreground	Bishop Museum Archives
CA 36789	1900	view of lower Mānoa Valley to Waikīkī from Castle home; one of a series of four	Bishop Museum Archives
CA 36790	1900	view of Mānoa Valley from Castle home, looking toward Pu'u Pia and Pali Luahine; small corner of Kukaoo Heiau possibly visible in photo; one of a series of four	Bishop Museum Archives
CA 636	1900-1910	view of lower western Mānoa, Pu'u 'Ualaka'a and Pu'u Kākea, from around Mid-Pacific Institute (photographer - A. Gartley)	Bishop Museum Archives
CABM 25301	?	view of Cooke residence looking northeast (photographer - L.E. Edgeworth)	Bishop Museum Archives
FILE: Domestic Life; Homes; CM Cooke, Jr.	various	collection of photographs of Cooke residence under construction, includes photos of outbuildings	Bishop Museum Archives
FILE: Geography, Oahu; Manoa	various	views of Mānoa; in three folders	Bishop Museum Archives
17,092	1933	aerial view of Mānoa to NE, showing extent of farms, houses	State Archives
---	1997	aerial photographs of the Cooke residence and Kukaoo Heiau (photographer - Thomas Woolsey, Roads Photography)	Mānoa Valley Cultural Heritage Foundation

