

E Nihī Ka Helena I Ka Uka O Puna
Travel carefully in the uplands of Puna



An Ethnohistorical Study of Wao Kele O Puna
Moku o Puna, Hawai‘i Island

Prepared For:
The Office of Hawaiian Affairs



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EXECUTIVE SUMMARY

Purpose and Scope

At the request of the Office of Hawaiian Affairs (OHA), Kumupa‘a Cultural Resource Consultants, LLC (Kumupa‘a) conducted an Ethnohistorical Study of Wao Kele O Puna Forest Reserve, in the *moku* (district) of Puna, Hawai‘i Island. OHA acquired WKOP in 2006 and has a 10-year Memorandum of Agreement (MOA) to co-manage the Forest Reserve with DLNR until OHA takes over complete management of the area in 2016. Under the stipulations of the MOA, a management plan is required to help develop OHA’s future management strategies for WKOP. This Ethnohistorical Study was one of a number of resource assessments (Biological, Archaeological, Physical, Hydraulic, Economic) conducted in the area to provide critical information for OHA’s comprehensive management plan. The purpose of the Ethnohistorical Study was to gather historical, ethnographic, archaeological, geographical, cultural, and management information to compile a comprehensive narrative of the ancient traditions, historical occurrences, cultural resources and ongoing cultural practices associated with the WKOP area.

Process and Methodology

The Ethnohistorical Study includes a review of literature, historical maps, and other relevant documents and materials; a compilation and summary of previous archaeological studies; and various ethnographic interviews related to traditional cultural practices and land use. Contents of the study include:

- * General description of the natural landscapes of the WKOP area including a detailed description of the flora and fauna found within the reserve.
- * Compilation of cultural traditions such as *mo‘olelo* (stories, histories, traditions, literatures), *mele* (song, chant, poem), *‘olelo no‘eau* (proverbs), and *inoa ‘āina* (place names).
- * Summary of the various genealogies for prominent *akua* (gods, goddesses, spirits) and *ali‘i* (chiefs).
- * Translations and transcriptions of historic Hawaiian and English language newspaper articles referencing the *ahupua‘a* (traditional land divisions) of Ka‘ohe and Waiakahiula.
- * Examination of the traditional WKOP land use and a historical overview of land use changes including historical maps, visitor recollections, and Māhele information.
- * Review and summary of WKOP cultural resources and previous archaeological reports conducted in and adjacent to the project area.
- * Compilation of interview summaries involving community participants.
- * Information and discussion addressing specific OHA cultural questions regarding WKOP.
- * Discussion of gaps, threats, and final recommendations regarding the future management and stewardship of the project area.

Summary of Identified Threats and Concerns

During the study, community members, agency personnel, and resource managers voiced concerns regarding a variety of preservation problems, management issues, as well as various threats and challenges facing WKOP.

Health of the Forest

A primary concern, of both agency personnel and the affected community, involves ensuring, maintaining, and sustaining the long-term physical condition, wellbeing, and health of the forest. For example, the threat of and damage from various *invasive species* remains a priority concern for local residents. Specific concerns include the following:

1. *‘Ōhi‘a Trees*: Proper maintenance, preservation, and management of the ‘ōhi‘a tree population that has become significantly threatened because of the dangers posed by various invasive species, diseases, and humans.
2. *Feral Pigs*: Their activities diminish native plant species, enhance growth conditions for invasive non-indigenous plants, threaten native forest bird species, increase soil erosion resulting in watershed degradation, and pig rooting and wallowing that create harmful mosquito breeding areas.

Management Concerns

Land management and responsible stewardship are critical for preserving our natural environment and safeguarding our quality of life and that of future generations. Public and private partnerships need to be encouraged and sustained to restore and protect Hawai‘i’s native forests. Specific management concerns included the following:

1. *Forest Access*: Currently, there is only limited access to the forest, and individuals must request a key from the DOFAW office in Hilo prior to accessing the forest. Some Puna *kama‘āina* believe that it is inconvenient and cumbersome to call DOFAW, reserve the key, and then take a round-trip from Puna to Hilo before accessing the nearby forest.
2. *Role of DLNR and OHA*: In terms of managing the introduction and spread of invasive species in WKOP, many community members feel that DLNR and OHA are doing an inadequate job of protecting the forest from these threats.
3. *Community Perception*: The community’s perception of OHAs involvement and management of WKOP does not appear to be entirely positive. Consequently, the agency may wish to consider initiating steps to acknowledge, discuss, and address these concerns.

4. *Community Advisory Team:* OHA has yet to establish a community advisory team that would represent a viable mechanism for the community to dialogue and work cooperatively with the agency.

Recommendations

The recommendations that follow are based on all aspects of our study - research, literature reviews, data analysis, fieldwork, the personal *mana 'o* of the study team, and the information, concerns, and suggestions gleaned from numerous interviews conducted with community members.

Natural Resources

Wao Kele O Puna is the largest intact lowland rainforest in the State, and the health of this forest remains a primary concern not only for the residents of Puna, but for all that participated in the study. To preserve the unique aspects and qualities of this forest, the community offered a number of diverse recommendations.

1. *Invasive Species Control:* A major recommendation involved OHAs efforts to eradicate the invasive species negatively impacting the forest – many residents believe this responsibility and duty should be a priority for OHA.
2. *Constructive Use of Resources:* Some participants recommended using removed invasive species constructively to improve the forest and to benefit the community. For instance, if the *waiawī* (strawberry guava) is removed, the straight, hard wood could be used to make *kāla'au* (sticks used in hula), *lomilomi* (massage), and walking sticks.
3. *Possible Land Purchase:* It was also recommended that OHA look beyond the 26,000 acres it owns in WKOP to the larger surrounding forest. *Kama'āina* familiar with the land ownership surrounding WKOP suggested that OHA consider purchasing the 900 acres of forestland owned by the Catholic Church.

Native Plant Restoration and Gathering

Participants noted that WKOP has been traditionally accessed to gather *lā'au* (plants, wood) for a variety of uses, and these practices must continue to be exercised today.

1. *Native Out-planting:* Because many of the native plants gathered by practitioners are rapidly dying off, it was recommended that action be taken to replace and reestablish these valuable forest plants.
2. *Cultural Access:* Community participants recommended that WKOP be kept open and accessible to cultural practitioners such as *hula hālau*, artists, and *lā'au lapa'au* healers for native plant gathering.

Cultural, Historical, and Archaeological Resources

Based on previous research conducted for the project area, most researchers concluded that limited archaeological evidence of past activities exist in the forest today. Unlike the wealth of well-preserved cultural sites along the Puna coastline, the forest area was not accessed as frequently, and the stone structures built there are very difficult to locate. Although locating new archaeological sites in WKOP may be challenging, Kumupa‘a recommends the following:

1. *Additional Archaeological Work:* OHA should conduct additional archaeological investigations of the three previously identified lava tubes located within WKOP (the Northern, Middle, and Southern Lava Tubes). To obtain a more complete understanding of the nature, scale and resources of these cultural sites; a more detailed investigation of these cave systems will likely reveal additional burials, archaeological sites, and artifacts that should be documented and protected.
2. *Burial Treatment Plan:* After more detailed archaeological documentation is completed, Kumupa‘a recommends that OHA prepare a Burial Treatment Plan or similar study to document the location and condition of *iwi kūpuna* in the lava tubes. This plan will help to protect and preserve known burial sites and *moepū* (associated funerary objects) within these lava tube complexes.

Pu‘uhonua & Kipuka

Throughout the study, a frequent community recommendation involved establishing some type of cultural gathering site at WKOP:

1. *Cultural Gathering Place:* Community members recommended establishing a cultural gathering place at WKOP to serve multiple functions such as a retreat for practitioners, a gathering site for community members, an outdoor classroom for students, and a cultural center for visitors. Community participants and Kumupa‘a recommend that the gathering place and related activities be situated at and around the existing cleared site in WKOP.
2. *Structures:* Regarding the actual building of structures at this gathering place, it was recommended that an open hale should be built using existing forest resources such as *‘ōhi‘a* wood for the posts and *loulou* palms for the roofing; participants also recommended building a *hula pā* (hula platform) and an *ahu* (alter, shrine) as appropriate cultural structures.

Community Collaboration

Almost all the participants were eager to offer suggestions, ideas, and/or personal assistance to help protect the wellbeing of WKOP. They recognized that to properly *mālama* such a large forest, a cooperative team effort must be undertaken.

1. *Collaborative Approach:* Participants recommended that OHA and DLNR have a greater presence in WKOP to help ensure that both agencies develop an appropriate familiarity with and understanding of the lands. Additionally, such a presence would enable both agencies to better appreciate and to work collaboratively with the local community.
2. *Steward Candidates:* Participants expressed that Puna *kama`āina* may be the best land stewards because of their historical connection to and *aloha* for their *āina*. Consequently, Kumupa`a recommends that OHA work directly with Puna residents and encourage their participation in the WKOP management team.
3. *Volunteer Programs:* The community strongly recommends that volunteer programs be established and supported at WKOP. OHA could benefit on a number of levels from these volunteer resources, and such a program would provide an opportunity for local residents to give back to the land and their community.

Konohiki and Kia`i (Local Managers and Guardians of the Forest)

Many elements of the ancient Hawaiian land management system have relevance for us today. The practice of *mālama`āina* (caring for the land) recognizes the importance of collaboration and working as a community with shared interests to protect the land, water and all of its resources.

1. *Culturally Appropriate Management:* Community members recommended that OHA look at culturally appropriate management practices for WKOP. Some participants suggested having *konohiki*-like managers who are intimately in-tuned with the forest and its resources (should also have a resource management background coupled with a strong cultural foundation). An example of this type of management system is the Protect Kaho`olawe `Ohana (PKO) who train *kua* to be the *kahu`āina* (care takers of the land) for Kaho`olawe. It was recommended that OHA establish a similar *kua* model for WKOP.
2. *Kapu System:* It was recommended that OHA establish a form of the ancient *kapu* (prohibition, taboo, reserve) system to manage WKOP. *Konohiki* managers could enforce *kapu* restrictions in certain areas to allow resources to rest and rejuvenate. Many community participants voiced the concept of using local *kia`i*, or caretakers at WKOP.
3. *‘Aha Kūkā Advisory Council:* Another recommendation involved OHA establishing an ‘Aha Kūkā Advisory Council to help manage WKOP including developing the ‘Āina Hānau Stewardship Plan to address short-term and long-term planning and to address any future development and educational activities. If OHA emerges as the primary manager of WKOP, the

‘Aha Kūkā would offer the community a voice in planning and decision making activities.

Education

Several participants discussed the importance of responsible stewardship for the cultural and natural resources of the forest and the benefits of maintaining a healthy forest through outreach and educational efforts.

1. *Educational Programs:* It was recommended that more programs be established to educate the children of Puna about place-based Hawaiian culture and the significance of the natural, cultural, and marine resources located in Puna. Participants suggested establishing a youth program where local *keiki* can experience and learn about the flora and fauna of WKOP.
2. *Working with DOE:* Many community members acknowledge that WKOP is an ideal place to teach the youth how to gather, hunt, and *mālama* the forest. Specific recommendations included OHA working with the local Department of Education (DOE) schools to allow for students to easily access the forest as part of their studies.
3. *Field Schools and Internships:* Another recommendation included establishing internships for forestry students at Hawai‘i Community College and creating a resource management field school to train youth to *mālama* the natural and cultural resources of WKOP from both a Hawaiian cultural and western scientific perspective.

Dissemination of Information and Knowledge

In many cases, researchers and other professionals come into communities to conduct research and field studies, and all too often, the results of these efforts do not get disseminated. OHA should disseminate and utilize the information compiled in this study.

1. *Expanded Distribution:* Kumupa‘a recommends that key portions of this Ethnohistorical Study be provided to the Pahoia and Kea‘au public libraries as well as the local schools.
2. *Community Presentation:* Possibly, an informal gathering and presentation can be arranged to share this information with the community. This kind of openness communicates to the community that its cooperation, collaboration, and involvement are appreciated and respected.
3. *School Curriculum:* Kumupa‘a believes that this research and data can be refined and incorporated into place-based curriculum for schools, especially in Puna. By learning about and understanding where one comes from, local

youth can develop a sense of confidence and pride in their ‘āina, history, and traditions. It is essential that the *keiki* of Puna understand and appreciate the unique character of their *moku*.

Management Efforts

Many participants expressed concerns regarding the absence of DLNR and OHAs presence in the forest and provided the following management comments and recommendations:

1. *Consistent Effort*: Everyone needs to be on the same page – OHA, DLNR, and the community.
2. *Time to Properly Plan*: The choices OHA makes for this place need to be well thought out so they don’t deplete our resources. This process is important in how the land is going to be used and managed.
3. *Administrative Rules*: Administrative rules need to be developed. Current forest reserve statutes may limit OHA from potential options, however, OHA is still required to adhere to conservation standards set by the State and Forest Legacy rules. DLNR can assist in this process, so OHA should utilize this option.
4. *Reviewing other Administrative Rule Constructs*: Look at Native American rules and management practices and processes.
5. *Legislation*: Legislation needs to be established mandating that WKOP should go to the new Hawaiian independent nation after OHA is dissolved.
6. *Collaboration*: To better meet its management objectives, OHA should work with the invasive species program, U.S. Forest Service, Carnegie Airborne Institute, community associations, and the Three Mountain Alliance. You don’t need to re-invent the wheel -- work with the organizations and people who have decades of expertise in natural resource management.
7. *Utilizing other Resource Management Frameworks*: OHA should look at the Kamehameha Schools natural and cultural resources program within the Land Assets Division. They have a well-integrated cultural and natural resources management program that can be replicated at OHA.
8. *Management Staffing*: Management staff for WKOP should have experience in forestry, Hawaiian biology, resource management, and/or cultural expertise.
9. *Establishing a new OHA Division*: Another recommendation involved OHA establishing its own fish and wildlife division as well as its own historical preservation officers, similar to the Tribal Historic Preservation Offices in the

Native American communities. This would allow OHA to develop its own appropriate rules and regulations to manage the forest.

10. *Community Involvement in Planning:* Kumupa‘a recommends that long-range management plans for WKOP be developed in conjunction and coordination with the larger Puna community. All concerned and involved parties should be included in the planning process because of their interest in and connections and *kuleana* to WKOP. This will help ensure that a broader community base is continuously involved in planning and a collective community voice is incorporated into the long-term stewardship of WKOP.

Access, Maintenance, and Security

Specific recommendations regarding the logistics of managing the land include the following:

1. *Land Acquisition:* *Kama‘āina* familiar with the WKOP access road suggested that OHA should try and acquire the land from Olsson (so the access road would be owned by OHA) or negotiate with Olsson to donate the access road to OHA. This would be beneficial for OHA, so they could then own the entire access road ensuring that access to the forest remains intact.
2. *Road Maintenance:* It was recommended that OHA provide improved maintenance for the access road including killing the invasive weeds growing along the road and planting native species to keep the invasive species from spreading into the forest.
3. *Monitoring Forest Access:* Another community recommendation involved implementing measures to limit the amount of invasive species brought into WKOP. The recommendation involves designating an individual to survey and monitor access to the forest to ensure visitors do not bring alien plants into the forest on their vehicles, clothing, or footwear.
4. *Staffing:* Another recommendation involved hiring a separate staff person to oversee all security matters at WKOP (being present during the day to monitor and/or report illegal activities to the proper authorities). This staff person could be hired from the Puna area (familiar with individuals and resources from the area) to encourage and support linkages with the local community.
5. *Access to Fenced-Off Areas:* Community members complained that many areas in Puna are fenced, gated, and closed. Some of the participants were frustrated that places they once hunted, fished, and gathered resources have been blocked and access has been denied. Consequently, it was recommended that reasonable community access be provided for WKOP.

Protective and Interpretive Signage

A number of community participants recommended that signs be erected at WKOP to educate visitors about the significance of the site and to deter visitors from inappropriate behavior.

1. *Interpretive Signs:* Kumupa‘a recommends that interpretive signs be developed by OHA, with input from the community, and be erected as soon as possible. These signs should provide historical, cultural, and environmental information for visitors to educate them about the significance of the forest. Additionally, signage is needed along the access road to inform visitors to respect this *wahi pana* (legendary place) and to avoid inappropriate behavior such as littering, bringing in invasive plant species, harvesting natural resources, entering lava tube caves, etc.

Conclusion

Essentially, this study confirmed what many have already recognized –Wao Kele O Puna is a *wahi pana* rich with precious natural and cultural resources and a unique spiritual and sacred site for *kānaka ‘ōiwi*. Maintaining traditional and customary practices at places like WKOP connects *kānaka ‘ōiwi* to the *‘āina* and *kūpuna* and provides a *pa‘a* foundation to journey into the future.

The mission of the Office of Hawaiian Affairs is “*To mālama (protect) Hawai‘i’s people and environmental resources and OHA’s assets, toward ensuring the perpetuation of the culture, the enhancement of lifestyle and the protection of entitlements of Native Hawaiians, while enabling the building of a strong and healthy Hawaiian people and nation, recognized nationally and internationally.*”

This Ethnohistorical Study has facilitated this mission by identifying, capturing, and documenting the natural, cultural, historical, and contemporary significance of WKOP. Ultimately, we hope this study will assist OHA and the community to better understand and appreciate the importance of WKOP by providing a holistic compilation of various materials and data. Wao Kele O Puna is a place that Native Hawaiians have fought to protect, safeguard, and preserve. Consequently, we must continue to honor and respect its special history by maintaining our vigilant efforts to *mālama* this special forest.

INTRODUCTION AND SCOPE OF WORK

At the request of the Office of Hawaiian Affairs (OHA), Kumupa‘a Cultural Resource Consultants, LLC conducted an Ethnohistorical Study of Wao Kele O Puna Forest Reserve, in the *moku* (district) of Puna, Hawai‘i Island (Figures 1-3). OHA acquired WKOP in 2006 and has a 10-year Memorandum of Agreement (MOA) to co-manage the Forest Reserve with DLNR until OHA takes over complete management of the area in 2016. Under the stipulations of the MOA, a management plan is required to help develop OHA’s future management strategies for WKOP. This Ethnohistorical Study was one of a number of resource assessments (Biological, Archaeological, Physical, Water, Economic) to investigate and examine the area to provide critical information and data for OHA’s comprehensive management plan.

The purpose of the Ethnohistorical Study was to gather historical, ethnographic, archaeological, geographical, cultural, and management information to compile a comprehensive narrative of the ancient traditions, historical occurrences and ongoing cultural practices associated with the WKOP area. The compiled information could then be used to help OHA manage, preserve, and protect these lands. Additionally, this effort could also be used to help perpetuate cultural knowledge, traditional values, and the cultural practices associated with the project area in the larger context of the *moku* of Puna.

The Ethnohistorical Study includes a review of literature, historical maps, other relevant documents and materials, a compilation and summary of previous archaeological studies, and various ethnographic interviews related to traditional cultural practices and land use. Contents of the study include:

- * General description of the natural landscapes of the WKOP area including a detailed description of the flora and fauna found within the reserve.
- * Compilation of cultural traditions such as *mo‘olelo*, *mele*, *‘ōlelo no‘eau*, and *inoa ‘āina*.
- * Summary of the various genealogies for prominent *ali‘i* of Puna.
- * Translations and transcriptions of historic Hawaiian and English language newspaper articles that reference the *ahupua‘a* of Ka‘ohe and Waiakahiula.
- * Examination of the traditional land uses in WKOP and a historical overview of land use changes including historical maps, visitor recollections, and Māhele information.
- * Review and summary of the cultural resources within the WKOP and the previous archaeological reports conducted in and around the project area.
- * Compilation of interview summaries involving community participants.
- * Answers to OHA’s specific cultural questions regarding WKOP.
- * Discussion of gaps, threats, and final recommendations regarding the future management and stewardship of the project area.

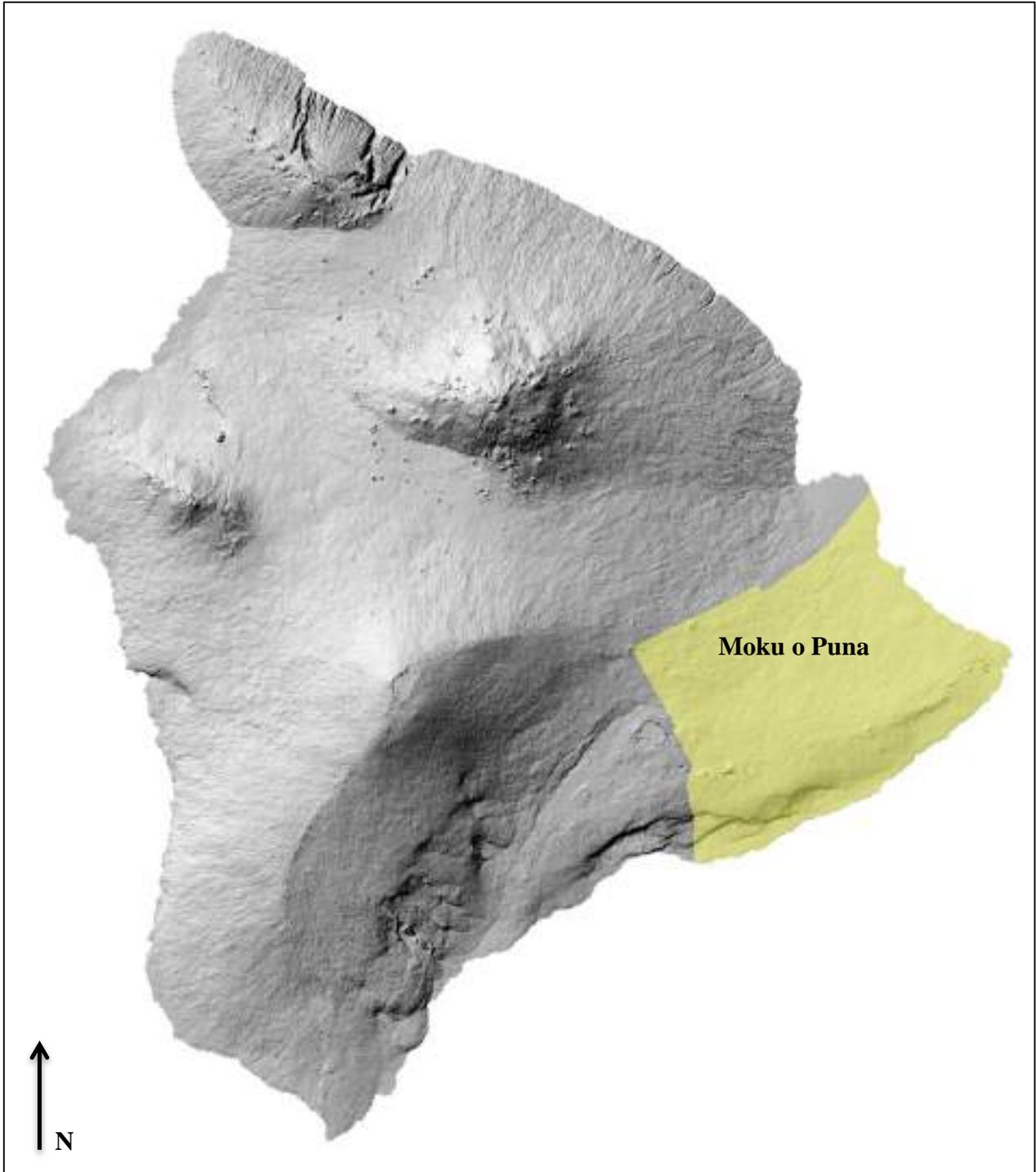


Figure 1. Hawai'i Island with *moku* of Puna highlighted.

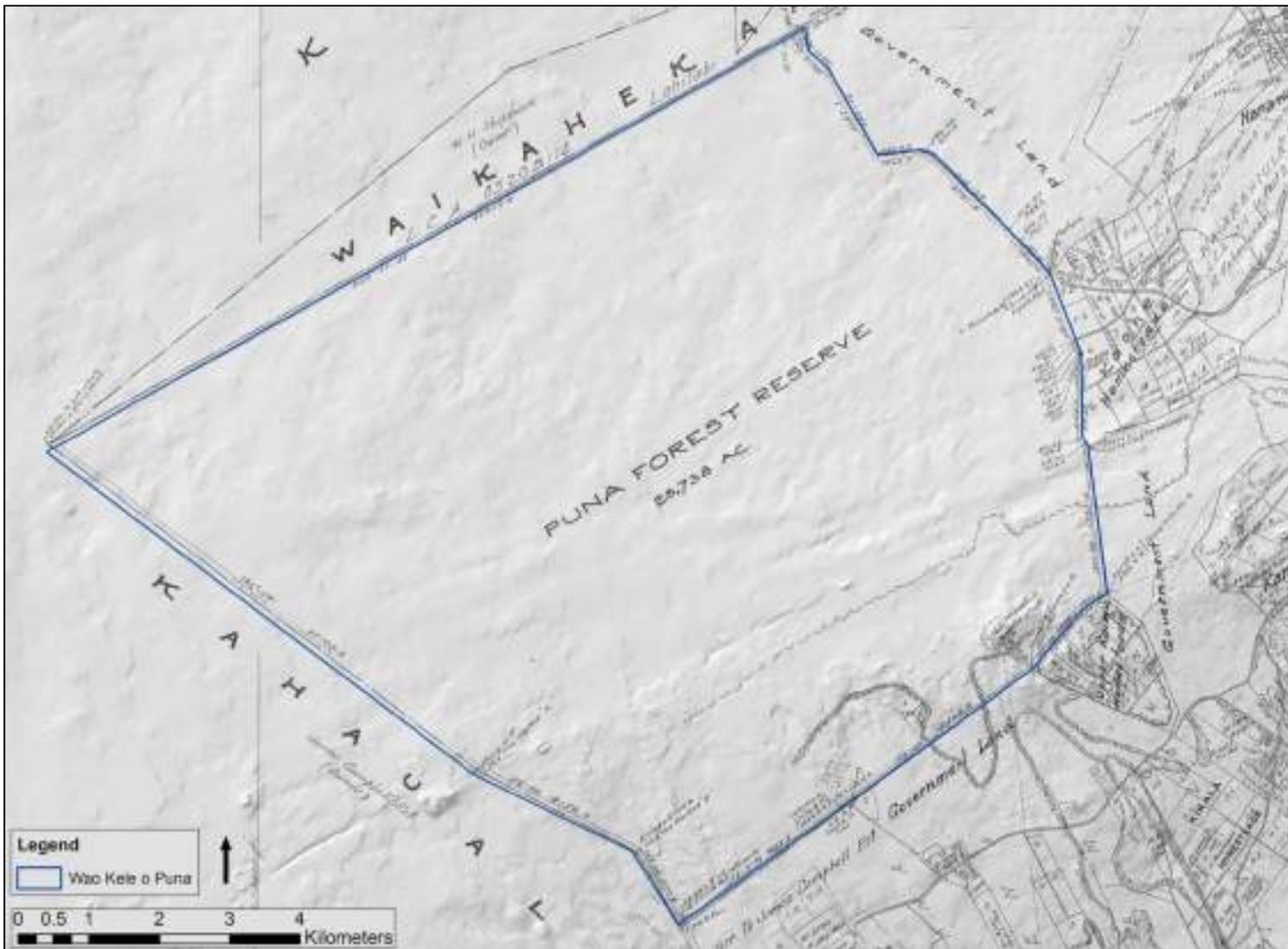


Figure 2. 1927 map by Wall showing boundaries of Puna Forest Reserve, Register Map 2753

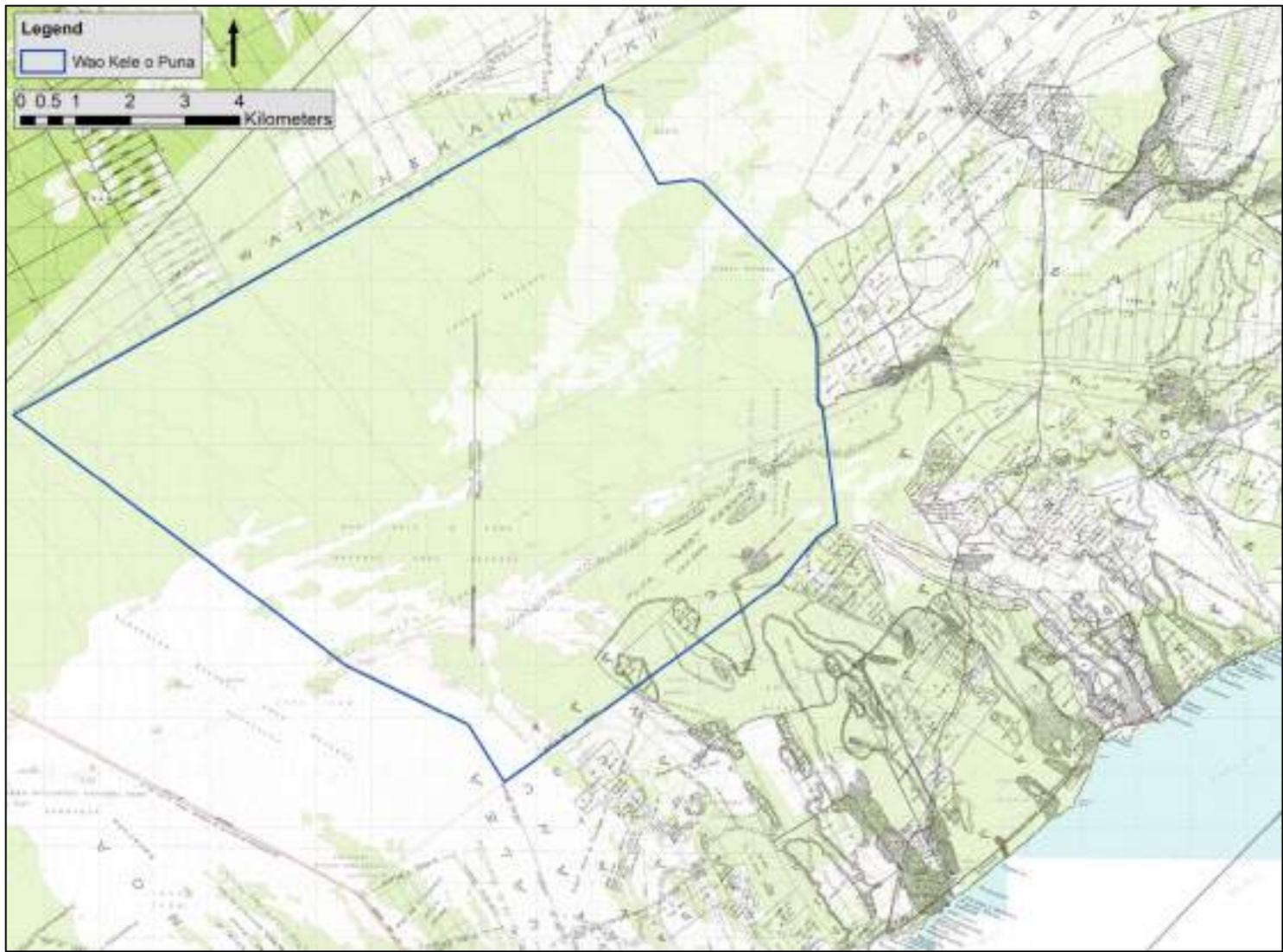


Figure 3. 1952 Register Map 2191 overlaid on USGS map showing boundaries of WKOP

METHODS

The archival, ethnographic, and report compilation tasks for this study spanned a 18-month period from August 2012 to February 2014. Project personnel included: Kelley L. Uyeoka, M.A., principal investigator for Kumupa‘a; and subcontractors – Momi Wheeler, B.S., researcher and ethnographer; Li‘ula Mahi, B.A., researcher; Lokelani Brandt, B.A., researcher; Halena Kapuni-Reynolds, B.A., Hawaiian language researcher, and Pueo McGuire, researcher.

While conducting this Ethnohistorical Study, Kumupa‘a’s research team integrated a set of values and beliefs to help guide our research, analysis, behavior, perspective, and overall frame of mind. The core values directing our *hui* (group) included:

- ❖ *‘Imi Na ‘auao – to seek knowledge or education; be ambitious to learn*
- ❖ *‘Ike pono – to recognize, feel, and understand righteousness, properness and goodness in all we do*
- ❖ *Kuleana – to view our work as both a privilege and responsibility*
- ❖ *Ho‘omau – to recognize, appreciate, and encourage the preservation, perpetuation, and continuity of our wahi pana and lā hui*
- ❖ *Aloha ‘āina – to have a deep and cherished love for the land which created and sustains us*
- ❖ *Ha‘aha‘a – to be humble, modest, unassuming, unobtrusive, and maintain humility*

These values represented the underlying foundation, tone, and structure for this study, and it is our hope that the reader, by understanding our frame of reference and the values guiding our efforts, will have a better sense of our *‘ano* (nature, character, manner) as researchers and authors.

The collection of information for this study was divided into three parts – archival, archaeological and ethnographic.

Archival Research and Review

The following is a list of repositories examined for this study:

- ❖ **State Historic Preservation Division Library (Hilo)** – Archaeology and cultural impacts studies, maps.
- ❖ **State Parks Offices (Honolulu)** – Reports and maps.
- ❖ **Bishop Museum Archives and Library** – Hawaiian Ethnographic Notes including Mary K. Pukui translations of Hawaiian newspaper articles of the 1800s, photos, tape-recorded interviews.
- ❖ **Kea‘au, Pahoā, and Hilo Public Library’s** – Maps, books, personal family collections, historical newspapers, photos.
- ❖ **UH Hilo Hawaiian Collection** – Journals, books, maps, reports.
- ❖ **State Archives** – Photos, records, journals, maps.
- ❖ **State Survey Office** – Historic register maps.

- ❖ **Lyman Museum** – Photos, maps, journals, artifacts.
- ❖ **Hawai'i Volcanoes National Park** – archival documents, maps, reports

Aerial Reconnaissance Survey & Documentation

Kumupa'a staff conducted an aerial reconnaissance survey of the Wao Kele O Puna area on September 16, 2013; David Okita of Volcano Helicopters piloted the helicopter used for the survey. The primary purpose of the aerial survey was to relocate cultural sites previously identified on historical maps and/or in earlier archaeological surveys. Methodology for the aerial survey included flying at low altitudes over probable site areas to search, locate, and determine whether cultural sites were present. If no sites were identified, the helicopter moved to another location. If the aerial observation located and identified an archaeological site, staff immediately verified and documented the location of the site with handheld Garmin Rino GPS units, photographed the features, and visually assessed the current conditions of the features.

Community Consultation and Ethnographic Work

The methodology for Ethnohistorical Study differs from those methods used to conduct standard archaeological and historic preservation projects. Typical archaeological surveys conducted for historic preservation compliance purposes generally focus on identifying and studying specific archaeological sites. These types of surveys rarely examine patterns within the *ahupua'a* landscape, evaluate oral historical/literature sources, or involve detailed interviews with the local community. In contrast, Ethnohistorical Study's involve oral history/literature and regularly utilize interviews with the living communities to establish the critical link between existing communities and those long-time places and sites so critically involved with the tradition and history of the community. Ethnohistorical Study's provide a "voice" for a community's history, traditions, and concerns. By their very nature, these types of studies are designed to capture, understand, and consider the indigenous viewpoint (past and present) associated with sacred, cultural places.

Holistic cultural resources studies are concerned foremost with gathering native concepts and perceptions of the landscape and documenting the relationships between people, *mo'olelo*, and the natural and cultural environment. Emphasis is shifted from western and scientific descriptions, observations, and analysis, to indigenous perceptions, cultural values, traditions, and theories. Because ethnography represents one of the critical aspects of these types of studies, the community must develop a trust with the ethnographer before feeling comfortable enough to share personal information and memories. Kumupa'a ethnographers, all of whom are Native Hawaiians, possess a special understanding and appreciation of Hawai'i's history, environment, and culture that allows them to collaborate and work closely with communities in a sensitive and culturally appropriate fashion. In retrospect, the professionalism and cultural sensitivity and awareness of Kumupa'a project staff helped ensure the forging of an understanding, trusting, and genuine relationship with the community.

Data Gathering

Ethnographic work was conducted from October 2013 through February 2014. As a multi-phase study, the ethnographic process consisted of identifying appropriate and knowledgeable individuals, conducting oral history interviews, summarizing the digitally recorded interviews, analyzing the oral history data, and preparing the report. The data gathering methodology utilized for this study included scoping via word of mouth sampling, semi-structured interviews, site visits, and personal observations.

Scoping and Interviewee Selection Criteria:

Scoping for this project began with contacting interested and knowledgeable individuals, organizations, and groups recognized as having genealogical, cultural, historical, or managerial connections to Wao Kele O Puna. Initial scoping methods included utilizing emails and prepared mail out letters to inform individuals of the project, contacting and following up with individuals by telephone, and/or meeting with individuals in person to discuss the project (Appendix A).

Knowledgeable consultants were selected if they met one or more of the following criteria: 1) were referred by the Office of Hawaiian Affairs, the Department of Land and Natural Resources, Kumupa‘a, or other cultural resource individuals; 2) possessed genealogical ties to the project area or vicinity; and/or 3) were considered Hawaiian cultural practitioners. Participants were selected because of their familiarity with or knowledge of the project area. Many of the participants explained that a number of *kūpuna* who were familiar with “old” Puna had already passed away. Consequently, project staff had to rely heavily upon those resource persons who were interviewed as well as on such secondary information sources as reports, newspapers, and other written documents and materials. A number of organizations and individuals were eventually contacted and 40 participants were consulted and/or interviewed.

Knowledge Sources:

During the course of the study, project staff learned that interview participants obtained their knowledge about Wao Kele O Puna from four primary sources:

1. *‘Ohana* knowledge or knowledge and information that was passed on within the *‘ohana* from one generation to the next.
2. Knowledge that was obtained from individuals outside their *‘ohana* such as teachers, cultural practitioners, and *kūpuna*.
3. Knowledge that was obtained through written sources such as books, documents, newspapers, reports, and studies.
4. Knowledge gathered through personal observations and practices (such as knowledge acquired through cultural practices within the project area).

Through a great extent, project staff attempted to identify and document the specific source or basis of an individual’s specific knowledge and/or experience. By doing this,

project staff was able to identify; additional written sources and materials referencing Puna; other families having personal information or experiences regarding the Wao Kele O Puna region, other knowledgeable individuals with information or experiences to share; and existing cultural practices that enable people to learn more about or to better understand Wao Kele O Puna.

Generally, most of the individuals interviewed acquired their knowledge about WKOP through personal experience or from older family members who passed on personal, historical, and/or genealogical information about Puna. Some individuals acquired their knowledge from written sources or from other individuals outside their family. A handful of cultural practitioners obtained their knowledge about WKOP from spending time in the area and through first hand observation.

Ethnographic Interviews:

The study utilized semi-structured interviews because they are open ended yet follow a general script covering a pre-determined list of topics. Information gathered during the initial phases of archival research and scoping for this project was utilized to construct the open-ended questions for the semi-structured interviews. The interview questions were derived from those primary themes identified as being crucial for obtaining a comprehensive understanding of the historical and contemporary knowledge of WKOP (Appendix B). The primary themes guiding the interviews included:

- ❖ *‘Ohana* and individual connections with and relationships in the area.
- ❖ *Mo‘olelo*, place names, *mele*, *oli*, *hula*.
- ❖ Past and present cultural practices and protocols.
- ❖ Knowledge of natural and cultural resources.
- ❖ Traditional and historic land use and ownership.
- ❖ Traditional and historic persons and events.
- ❖ Concerns and recommendations regarding future stewardship of these *ahupua‘a*.
- ❖ Information and referrals for *kūpuna* and *kama‘āina* willing to share their cultural knowledge of the area.

Site Visits and Huaka‘i:

The study involved Kumupa‘a staff participating in *huaka‘i* (site visits) to WKOP and the surrounding area in Puna. The majority of these visits involved project interviews. Interviewing individuals on site proved advantageous because the familiar surroundings resulted in a more comfortable and relaxed setting, and the visual surroundings of the landscape frequently sparked memories and animated recollections of the sites. These *huaka‘i* were not only beneficial for information gathering, but subsequent *wahi* visits often resulted in fresh, new, and useful observations.

Data Integration

Detailed and comprehensive notes as well as digital recordings were used to document all of the semi-structured interviews. Data collected from the interviews were then

transcribed, summarized, organized, and incorporated into the study. A great amount of scrutiny and care were used to ensure that all of the collected data, information, and transcriptions were presented as accurately as possible. Throughout the study, project staff remained keenly aware of the critical importance of ensuring that the voices of the community were honored and respected, correctly heard, and properly conveyed.

Ethics

Throughout the study, and particularly before any type of meeting or interview, it was explicitly and carefully explained to all participants that their involvement in the study was strictly voluntary. A comprehensive and detailed informed consent process was initiated and completed including providing ample project background information, before participation in the study was allowed. The informed consent forms (Appendix C) included all of the specific participant rights including notification that participants could choose to remain anonymous. Project background information included explaining the study focus and the purpose, significance, and importance of the study. After proper notification and discussion, some interview participants voluntarily provided verbal consent for the researchers to use their *mana'o* for the study. Throughout the project period, all participants had open and regular access to the researchers. All of the interviews were scheduled and arranged for the participant's convenience, and none of the interviews or meetings was initiated until participants felt completely satisfied with the process.

Confidentiality

During the study, a few interview participants requested that portions of information shared should remain confidential. During those instances, project staff observed strict guidelines and protocols to protect the confidentiality of the information and to safeguard the identity of the involved individuals.

NATURAL LANDSCAPE AND RESOURCES OF WAO KELE O PUNA



Nani Puna pō i ke ‘ala.

Beautiful Puna, heavy with fragrance.

Praise for Puna, Hawai‘i, where the breath of maile, lehua and hala blossoms are ever present.

Project Area

The project area for this study consists of the Wao Kele O Puna Forest Reserve which consists of lands primarily in the *ahupua‘a* of Ka‘ohe and Waiakahiula, as well as very small portions in the *ahupua‘a* of Maku‘u, Kaimu, Kehena, Kapa‘ahu and Kamaili in the *moku* of Puna, Hawai‘i Island (Figure 4). Since 2006 the Office of Hawaiian Affairs has owned WKOP which consists of TMKs (3) 1-2-010:002 and (3) 1-2-010:003. While the primary study area was the 25,856 acre WKOP parcel, it would be impossible to study this area in isolation from the rest of the district of Puna. Therefore, this study examines the natural and cultural landscapes, *mo‘olelo*, archaeology, and oral histories of the entire *moku* of Puna with an added focus on the specific project area.

Geology

The Puna District, lying between the District of Hilo to the north and the District of Ka‘ū to the south, extends from Cape Kumukahi on the east to the forested slopes of Mauna Loa on the west (Holmes 1985:1) (Figure 1). Geologically dominating the Puna District is the East Rift Zone of the Kīlauea Volcano, which has been volcanically active for over 25 years with some 60 cinder and spatter cones (Holmes 1995:1). Kīlauea’s east rift zone does not end where the ocean begins; more than half of the 130 kilometers (km) (80 miles) length lies under the sea, extending 75 km (47 miles) northeast beyond Cape Kumukahi and reaching a depth of 5.4 km (3.34 mile) (United States Geological Service [USGS] and Hawai‘i Volcano Observatory [HVO]). This East Rift Zone runs prominently through the lower portion of the WKOP, which is considered a land-locked tract of forest and lava land (Holmes 1995:1) (Figure 5).

Holcomb (1987:266) summarizes the general character of the Kīlauea flows and the events that created them:

...the morphology of a lava flow is influenced by the behavior of the eruption that produces it, with sustained effusion leading to a high degree of channelization and formation of lava tubes. Different kinds of eruption produce different kinds of vent edifices and flow assemblages. Brief eruptions produce small edifices and simple assemblages of surface-fed pāhoehoe (smooth, unbroken type of lava) and ‘a‘ā (stony), while long-sustained eruptions produce large lava shields and assemblages dominated by tube-fed pāhoehoe... Eruptions of intermediate duration several weeks to a few years, typically produce small shields and complex assemblages of all three flow types...

In 1996, the U. S. Geological Survey produced a geologic map of Hawai‘i Island with corresponding literature. This set details the types and ages of lava flows covering the island. The WKOP lies over the border of flows from Kīlauea volcano (Figure 6-7). The Kīlauea volcano consists of Puna basalt (Holocene) with predominantly tholeiitic basalt. These lava flows are classified as “p2,” dated 1,500 to 3,000 years B. P. and “p4,” dated 200 to 750 years B.P. Within these flows are pockets of “p5,” dated historic: A.D. 1790 or younger, “p4o” which dates from 400 to 750 years B.P. and “p4y,” dates 200 – 400 years B.P. There are pockets of spatter or tuff cones classified as “pc2,” dated 1,500 – 3,000 years B.P. and “pc4o,” dated 400 – 750 years B.P. (Wolfe and Morris 1996:sheet 2).

Climate and Substrate

Throughout most of the year, trade winds dominate air flow patterns and pass from northeast to southwest over the coastline between Hilo Bay and Kumukahi Point, blowing up over the rift zone and flowing back out to sea over the southeastern Puna coast (Burtchard and Moblo 1994:14). Occasionally, nocturnal cooling may temporarily reverse the pattern, causing air to sink from Mauna Loa/Kīlauea northeast toward Hilo and down the rift zone bending downslope south to southwest, Kona winds (Burtchard and Moblo 1994:14). The interaction of cool offshore airflow with opposing trade winds tends to cause high rainfall levels during the night and early morning hours (Price 1977).

The average annual rainfall in the general vicinity ranges between approximately 120 and 160 inches (Juvik and Juvik 1998:57). Temperatures in this area of the Puna District usually fall between the sixties and eighties. As expected, the cooler temperatures and heavier rainfall occur in the winter months (October-April) and warmer temperatures and lighter rainfall occur during the summer months (May-September).

This combination of stable, moist and warm weather strongly influences dominant vegetation patterns across the Puna District which is wet enough to support forest vegetation throughout this region. Very generalized classification systems indicate a shift from mixed mesic or sub-montane forests to true montane rain forest with increasing elevation (Burtchard and Moblo 1994:15). Coastal and inland areas up to about 1,500 feet amsl fall within the mixed mesic forest/closed guava forest zone (Burtchard and Moblo 1994:15). The vegetation with WKOP is primarily composed of wet, ‘ōhi‘a (*Metrodieros* sp.) dominated plant communities distributed in a mosaic pattern that reflects differing

substrate types and ages (McEldowney and Stone 1991:2). In structure and density, the plant foliage range from dense, closed canopy forests to pioneer assemblages that are only beginning to establish on recent, nearly barren lava flows (McEldowney and Stone 1991:2). Endemic/native or mixed native/exotic plants form dense understories in the forested areas while thick mats of *uluhe* (*Dicranopteris* spp.) fern are found in open canopy communities or where the trees are widely spaced (McEldowney and Stone 1991:2).

Water Resources

The elevation of WKOP is approximately 1,000 – 2,280 feet above mean sea level (amsl). During heavy winter rains, one intermittent stream (name unknown - although a bridge abutment contains the name “Waipāhoehoe” this is believed not to be Waipāhoehoe Stream) will begin flowing from the ‘Ōla‘a Rain Forest and enter the ocean near Pākī Bay (upper Kea‘au). No perennial waterways are located near or within WKOP. There is abundant water traveling through this area from Mauna Loa, but it flows underground, exiting usually at or near the ocean via springs. These underground sources of water are known to be quite pristine, having been filtered through miles of lava rock.

As stated in *Wao Kele O Puna Biological Management Plan* (Leialoha 2013:22-23):

Near surface rocks and substrates in many volcanic islands including Hawai‘i are highly permeable and infiltration rates can be extraordinary high. In the southeastern part of the Island of Hawai‘i, which includes WKOP – NAR, perennial surface water is nearly absent despite an average rainfall of 79 inches per year at lower elevations and 125 – 150 inches at higher elevations. There are areas in the reserve that appear quite swampy during rainy periods and can remain that way during dry periods, but other than these areas there are no large areas of standing water or any streams or creeks in the reserve. Most of the reserve, given its soil type and crinkly-basalt-type lava is permeable and less likely to hold surface water for long periods of time. The principal aquifers in Hawai‘i are basaltic flows in which freshwater can accumulate in large lens-shaped bodies (known as the Ghyben-Herzberg lens). This lens is maintained by direct discharge of rainwater and discharges from the high-level dike impounded water. A fresh water lens develops as freshwater percolates down to the salt water and floats on the underlying salt water. Since lava activity along the east rift zone, which runs along the southwestern border of WKOP – NAR, tend to create dikes which are poorly permeable, thin and nearly vertical sheets of volcanic rock, freshwater tends to get trapped. It is likely that some areas within WKOP – NAR contain freshwater confined by these dikes and not floating on salt water. In other more permeable areas in the reserve, basal water would be floating on salt water. Basal water is predominately sodium chloride. In the Puna region, particularly around the east rift area, dissolved silica values two to three times higher than average for the rest of the Big Island. In addition, hydrologic and geologic conditions around Kīlauea’s east rift zone support the possibility of

accumulations of super-heated ground water. Given the annual amount of rainfall in this area, it is unclear what the recharge rate of freshwater in WKOP – NAR would be and further studies would be warranted.

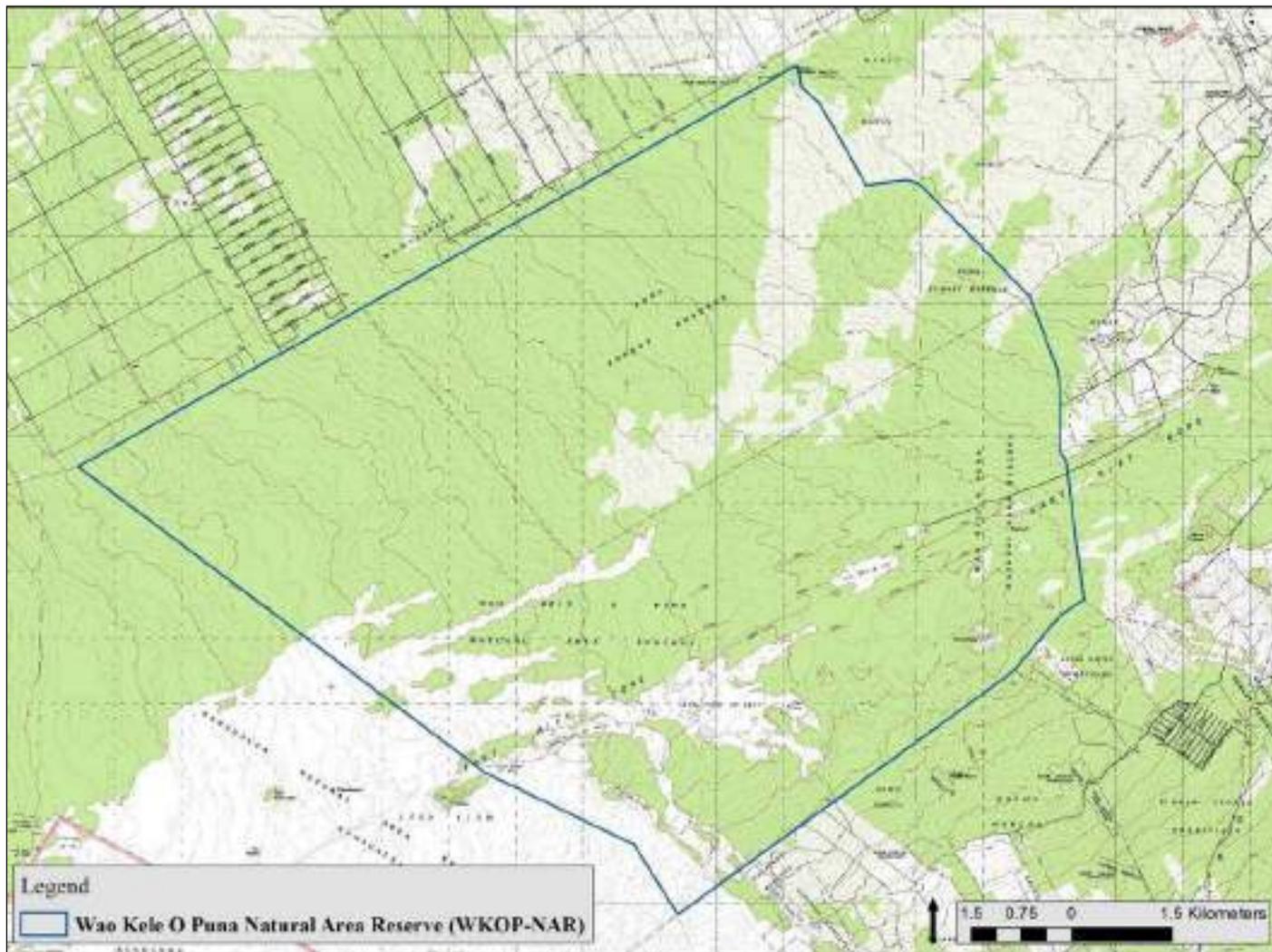


Figure 4. Portions of the Pāhoā North (1997) and Pāhoā South (1994) Quadrangles USGS 7.5-Minute Series Topographic Map, showing the location of WKOP

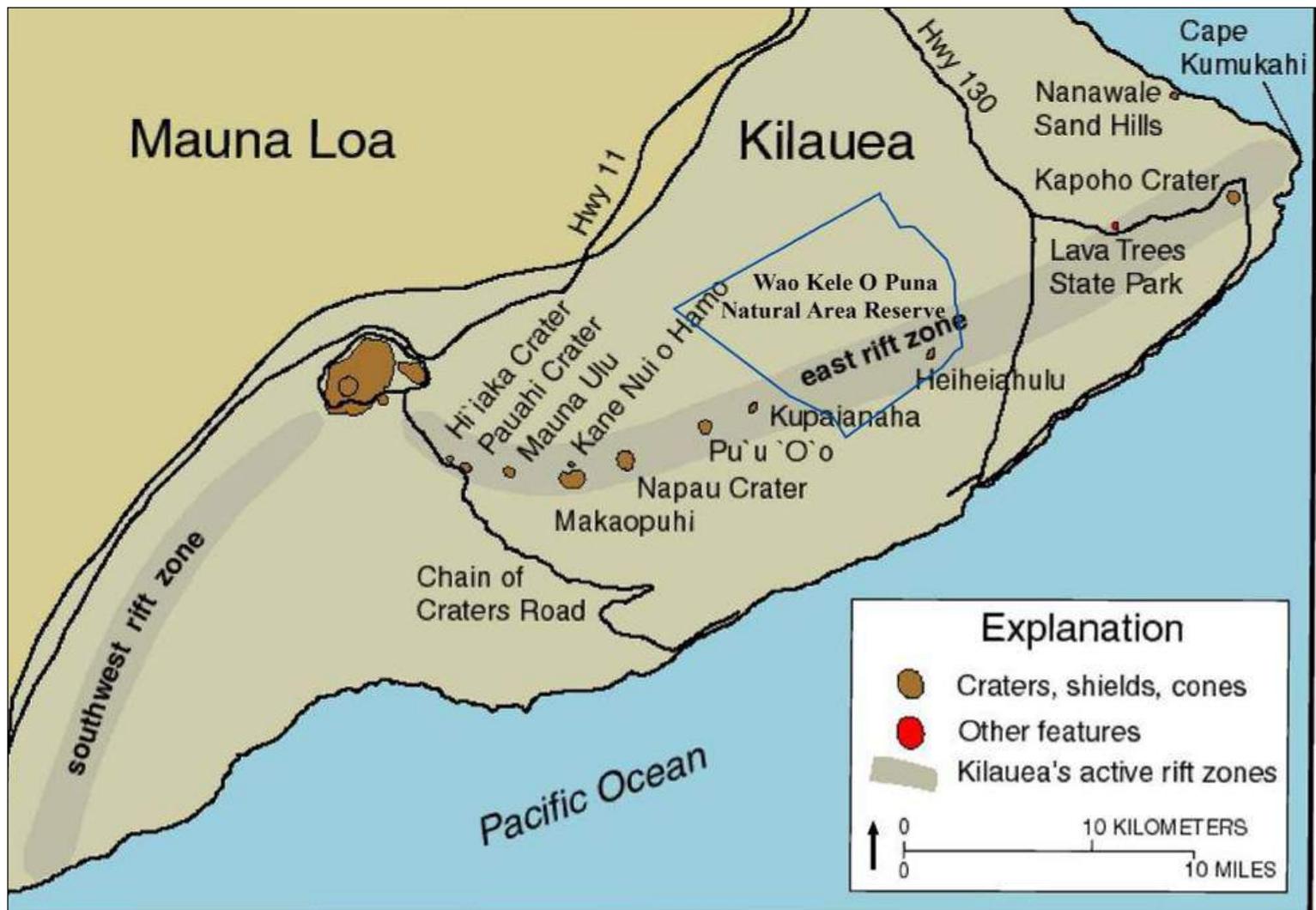


Figure 5. Location of WKOP along Kilauea's East Rift Zone, Kilauea Volcano (U.S. Geological Service and Hawai'i Volcano Observatory)

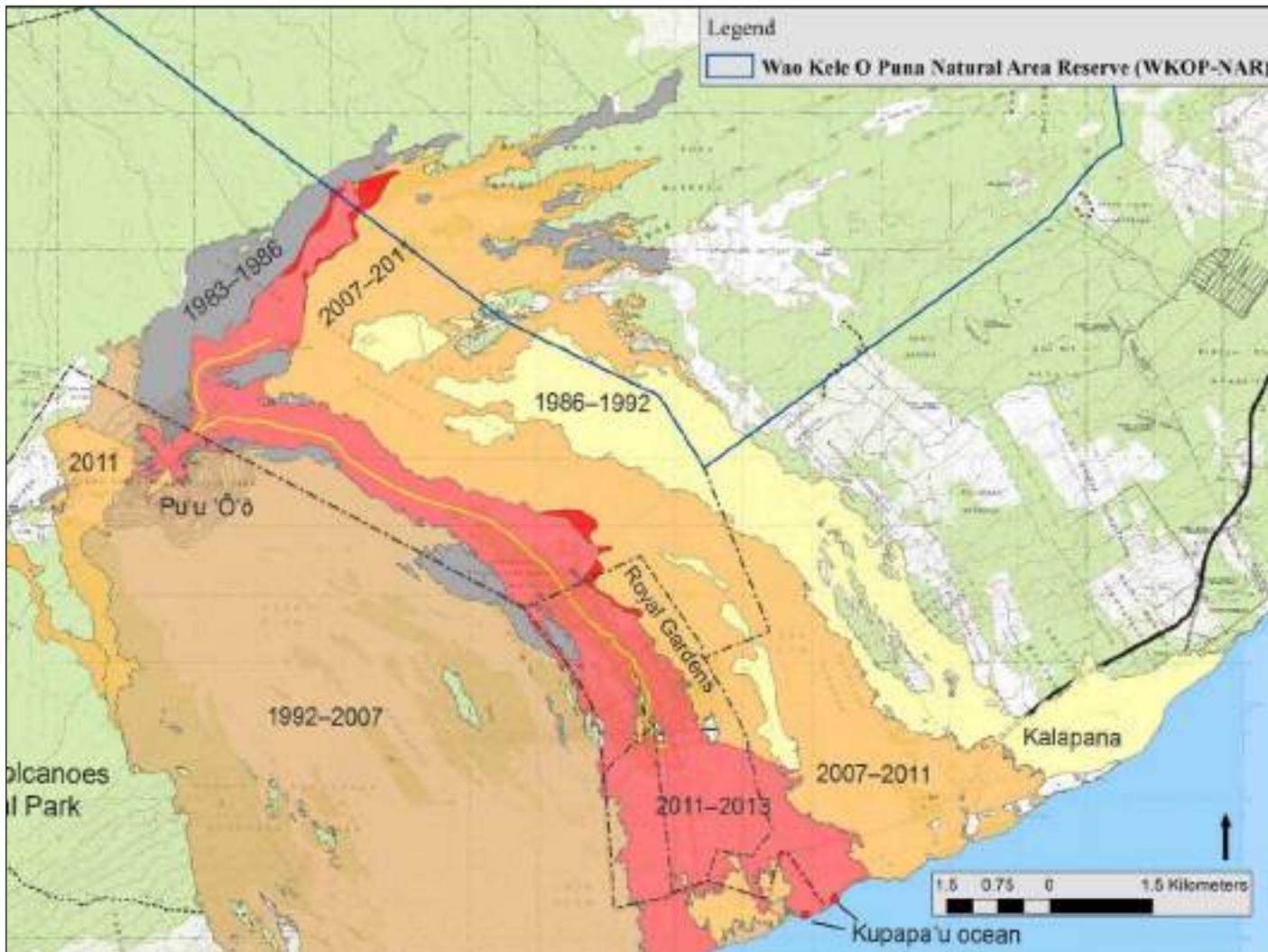


Figure 6. USGS Historic and recent lava flows map showing the southern portion of WKOP; dark red indicates March 19 to April 8, 2013 expansion (USGS – HVO)

Soil Types

Six soil types lie within Wao Kele O Puna (Figure 8):

1. rKGD: The Keei series consists of well-drained, thin organic soil overlaying *pāhoehoe* lava bedrock; greatly sloping to moderately steep soils on uplands with an elevation ranging from 1,000 to 3,500 feet and receive about 90 to 150 inches of rain annually. Their mean annual soil temperature is between 62° and 65° F. The natural vegetation consists of 'ōhi'a trees, tree fern ('*ama'u*, *hāpu'u*), *uluhe* fern, and *waiawī* (yellow strawberry guava). Keei soils are used mostly for woodland and watershed. Small acreages are cleared and used for pasture. The Keei series is extremely rocky muck, 6 to 20 percent slopes (rKGD). This soil is at intermediate elevations on Mauna Loa and Mauna Kea. Rock outcrops occupy 25 to 50 percent of the surface. In a representative profile the surface layer is very dark brown muck about 10 inches thick. It is underlain by *pāhoehoe* lava bedrock. This soil is strongly acid (Sato et. al. 1973:27 – 28).
2. rLW: the predominant land type classified as Lava flows (rLW), *pāhoehoe*, a miscellaneous land type (Sato et. al. 1973). *Pāhoehoe* lava has a billowy, glassy surface that can be relatively smooth or rough and broken. Hummocks and pressure domes are common. Bare *pāhoehoe* lava typically can support mosses and lichens, while in areas with more rainfall 'ōhi'a trees, 'ōhelo (*Vaccinium reticulatum*) berry, and 'a'ali'i (*Dodonaea*, all species) can grow from cracks and crevices. "This miscellaneous land type occurs at elevations ranging from sea level to 13,000 feet. The annual rainfall ranges from 10 inches to more than 140 inches. Some flat slabs of *pāhoehoe* lava are used as facings on buildings and fireplaces. In areas of higher rainfall, this lava contributes to the ground-water supply" (Sato et. al. 1973).
3. rKXD: The Kiloa series consists of well-drained, thin, extremely stony organic soils over fragmental 'a'ā lava. The soils are gently sloping to moderately steep. They are on uplands at an elevation ranging from 1,000 to 4,000 feet. They receive 90 to 150 inches of rainfall annually and their mean annual soil temperature is between 64° and 67° F. The natural vegetation consists of 'ōhi'a trees, tree fern and bracken (*Pteridium aquilinum*) fern. Kiloa soils are used for woodland and pasture and for wildlife habitat. The Kiloa series is extremely stony muck, 6 to 20 percent slopes (rKXD). This soil is at intermediate elevations on Mauna Loa and Hualālai. In a representative profile the surface layer is very dark brown extremely stony muck about 10 inches thick. It is underlain by fragmental 'a'ā lava. Slightly weathered ash and cinders are in the voids of the lava. The profile is strongly acid (Sato et. al. 1973:30 – 31).

4. rPAE: The Papai Series consists of well-drained, thin, extremely stony organic soils over fragmental 'a'ā (jagged) lava. These soils are gently sloping to moderately steep. They are on uplands at an elevation ranging from near sea level to 1,000 feet and receive from 90 inches to more than 150 inches of rainfall annually. Their soil temperature is between 72° and 74° F. The natural vegetation consists of 'ōhi'a trees, tree fern, uluhe fern and guava. Papai soils are used mostly for woodland. Small areas are used for pasture, orchards and truck crops. The Papai series is extremely stony muck, 3 to 25 percent slopes (rPAE). This soil is low on the windward side of Mauna Kea. In a representative profile the surface layer is very dark brown extremely stony muck about 8 inches thick. It is underlain by fragmental 'a'ā lava. This soil is slightly acid (Sato et. al. 1973:46).
5. rLV: Lava flows, 'a'ā (Sato et. al. 1973:90 – 91).
6. rKFD: The Keaukaha series consists of well-drained, thin organic soils overlying pāhoehoe (smooth) lava bedrock. These soils occupy the low areas of Mauna Loa. They are at an elevation ranging from near sea level to 1,000 feet and receive from 90 inches to more than 150 inches of rainfall annually. Their mean annual soil temperature is between 72° and 74° F. The natural vegetation consists of 'ōhi'a trees, tree fern, uluhe fern and guava. Keaukaha soils are used for woodland, pasture, and home sites. The Keaukaha series is extremely rocky muck, 6 to 20 percent slopes (rKFD). It is undulating to rolling and follows the topography of the underlying pāhoehoe lava. Rock outcrops occupy about 25 percent of the area. In a representative profile the surface layer is very dark brown muck about 8 inches thick. It is underlain by pāhoehoe lava bedrock. This soil is strongly acid (Sato et. al. 1973:27).

The lands surrounding the project area have been largely transformed by human activity (Juvik and Juvik 1998:123). These lands were classified as wet forest and woodland before human settlement disrupted them (Juvik and Juvik 1998:122). The biota in this type of ecosystem consisted of:

Vegetation: closed canopy forest of 'ōhi'a [*Metrosideros polymorpha*], sometimes with *koa* or 'ōlapa codominant; dense tree fern (*Cibotium* species) understory...also, open-canopy forests or woodlands of 'ōhi'a and uluhe (*Dicranopteris linearis*). Forests of hala (*Pandanus tectorius*) in coastal lowlands...Shrublands of 'ōhi'a and ferns; also, 'ākala (*Rubus hawaiiensis*) shrublands. Rare bogs and mosses (*Racomitrium* species), sedges, grasses, and native shrubs. Fauna: primary habitat of most extant Hawaiian honeycreepers and other forest birds...great diversity of native invertebrates. Endangered species: more than 50 plants species...birds include 'ō'ū (*Psittirostra psittacea*), Maui parrotbill (*Pseudonestor*

xanthophrys), and ‘ākohekohe (*Palmeria dolei*) (Juvik and Juvik 1998:126-127).

Threats to this type of ecosystem include:

Feral pig, mongoose, feral cat; black and Polynesian rats; alien slugs; introduced plants such as melastomes (*Clidemia hirta*, *Miconia clavescens*), banana poka (*Passiflora mollissima*), Hilo grass (*Paspalum conjugatum*), yellow raspberry (*Rubus ellipticus*), and strawberry guava (*Psidium cattleianum*). Clearing for agriculture and grazing, suburbanization (Juvik and Juvik 1998:127).

Flora of Wao Kele O Puna



Pōki‘i ka ua, ua i ka lehua.

*The rain, like a younger brother, remains with the lehua.
Said of the rain that clings to the forest where ‘ōhi‘a trees grow.*

Post 1950 lava flows represent the single largest intrusion into the Kīlauea subzone (Burtchard and Moblo 1994). Most of the zone is dominated by wet ‘ōhi‘a forest with native species or ‘ōhi‘a woodland with *uluhe* fern...the ‘ōhi‘a forests are environmentally significant as they provide critical habitat for a number of rare, threatened or endangered plant and bird species (Char and Lamoureux 1985a:6). Wao Kele O Puna Forest Reserve is a low elevation forest system with relatively intact native components (Martin 2008:7). As classified in Char and Lamoureux (1985a:29-70), two of six vegetation types, ‘ōhi‘a – *uluhe* woodland and ‘ōhi‘a forest, which are divided into three groups: Pteridophyta (ferns and fern allies), Monocotyledonae (grasses, lilies, palms and orchids) and Dicotyledonae (flowering plants) for the Puna Geothermal Resource Subzones/WKOP (Appendix D).

Native Plant ID Cards

The information presented below was gathered from educational flashcards that showcase a handful of Native Hawaiian plants found in Wao Kele O Puna. These flashcards were created as a sample educational tool that OHA could utilize to bring awareness to the native flora and fauna of WKOP. The focus of these flash cards is to integrate both scientific and cultural knowledge to create a foundation of information that can be explored and built upon. Each card provides the scientific and Hawaiian names of the plant species, a photo of the plant, flower, and seed for identification, information about where the plant is typically found, information about when a seed is ready to be collected for propagation, and a brief innuendo of cultural information associated with the specific plant species. The plants that were chosen for these ID cards include: *maile*, *lama*, *‘ohāwai*, *pāpala kēpau*, *alani*, *hame*, *‘ohe*, *‘ahakea launui*, *manono*, *ōpuhe*, and *olomea*.

Maile

Apocynaceae, *Alyxia olivaeformis*



Ka makani hali ‘ala o Puna - *The fragrance bearing wind of Puna*

Puna, Hawai‘i was famed for the fragrance of *maile*, *lehua*, and *hala*. It was said that when the wind blew from the land, fishermen at sea could smell the fragrance of these leaves and flowers. (‘Ōlelo No‘eau, 1458)

This is a Native Hawaiian endemic vine that is found on all of the main Hawaiian Islands except for Kaho‘olawe and Ni‘ihau. It is found growing in dry open sites, mesic forests, and closed wet forests from near sea-level to 6,500ft. When fruits are mature and purplish they can be collected for propagation. *Maile* is one of the five standard plants used for the *hula kuahu* (altar) in dedication to Laka, the goddess of Hula. Maile is also associated with the forest spirits of the four Maile sisters, famed in the *mo‘olelo* of Lā‘ieikawai. The five Maile sisters include Maile Ha‘iwale “the brittle *maile*”, Maile Pākaha “the hedging *maile*”, Maile Lau Nui “the big-leafed *maile*”, Maile Lau Li‘i “the small-leafed *maile*”. Sometimes Maile Kaluhea “the fragrant *maile*” was also believed by some to be a sister. This vine is also used to scent *kapa* and make fragrant *lei*.

Lama, Ēlama

Ebenaceae, *Diospyros sandwicensis*



Ka lama kū o ka no‘eau - *The standing torch of wisdom*
Said in admiration of a wise person (Ōlelo No‘eau 1430)

Lama is an endemic Native Hawaiian tree that is found on all of the main Hawaiian Islands except for Kaho‘olawe and Ni‘ihau. It is found growing in low-land dry forests and mesic dry forests from sea-level to 4,000 ft. Each fruit contains one to three brown seeds. When the oval fruit are ripe and bright yellow to red in color they can be collected for propagation. *Lama* meaning “light” is believed to have the quality of enlightenment. It is one of the five standard plants used for the *hula kuahu* (altar) in dedication to Laka, the goddess of Hula. A piece of *lama* wood was wrapped in yellow *kapa* and placed on the *kuahu* as an embodiment of Laka. *Lama* wood was used for *heiau* construction, fencing for sacred sites, house posts, fish traps, and tide gates, *lā‘au lapa‘au* (traditional medicine), fruit for food and *liko* for *lei* making.

‘Ōhāwai, Hāhā

Campanulaceae, *Clermontia parviflora*



Kōkua aku, Kōkua mai - *One who helps, receives help in return*

Certain Hawaiian birds depend on ‘Ōhāwai for food. As they eat, they also help to pollinate these plants.

‘Ōhāwai is a native Hawaiian endemic understory plant. It is found growing in bogs, mesic, and wet forests within the 395-4,790ft. elevation. This plant is naturally pollinated by honeycreepers like the ‘I‘iwi and ‘Akialoa. ‘Ōhāwai can be propagated by seeds and cuttings. When fruits are ripe and yellow, orange, red, or purple they can be collected for propagation. ‘Ōhāwai can be used as food for birds and humans. The leaves are boiled before eating and the fruits can be eaten fresh. This plant is also used for *lā‘au lapa‘au*.

Pāpala Kēpau or Pāpala

Nyctaginaceae, *Pisonia brunoniana*



Waiwai ke ola o ka wao kele o Puna, ke ‘ume nei i ke aokū no ka wai o ka ‘āina -

The health of Wao Kele O Puna is important, attracting the rain clouds that bring fresh water to the land.

Pāpala kēpau is an indigenous native Hawaiian tree that is found on Hawai‘i Island, Maui, Molokai, Lāna‘i, and O‘ahu. This tree grows in dry and mesic forests. *Pāpala kēpau* can be propagated by seed. When the fruits are brown and dry they can be collected for propagation. Traditionally, the *kia manu* (bird catchers) would place the sticky *pāpala kēpau* fruits on trees or tall poles to catch birds for their feathers. When a bird got stuck, the bird catcher would pluck the desired feathers, clean off the birds feet with *kukui* nut oil, and release the bird back to the forest. The feathers were used for feather work such as *lei*, helmets, and cloaks for the *ali‘i*.

Alani or Kūkaemoa

Rutaceae, *Melicope clusiifolia*



Hahai nō ka ua i ka ululā'au - *Rain always follow the forest*

The rains are attracted to forest trees. Knowing this, Hawaiians hewed only the trees that were needed. (Ōlelo No'eau 405)

Alani is a Native Hawaiian endemic tree found on all of the main Hawaiian Islands. It is found growing in mesic and wet forests within the 3,850-5,150ft elevation. This tree can be propagated by seed. When the fruits are greenish-brown and dry they can be collected for propagation. *Alani* was one of the woods used for poles in rigging canoes. It is also used for *lā'au lapa'au*.

Hame, Hamehame, Mehame Ha'ā, Ha'āmaile

Euphorbiaceae, *Antidesma platyphyllum*



Hame is a Native Hawaiian endemic tree that is found on all of the main Hawaiian Islands except Kaho'olawe and Ni'ihau. It is found growing in mesic and wet forests. This tree can be propagated by seed. When fruits are mature and reddish-purple, they can

be collected for propagation. *Hame* wood was used to make house frames and anvils for preparing *olonā* fiber. The fruit can also be used to dye *kapa* dark purplish-red.

‘Ohe or ‘Ohe‘ohe

Araliaceae, *Tetraplasandra hawaiiensis*



‘Āina i ka haupo o Kāne - *Land on the bosom of Kāne*

Puna, Hawai‘i. It is said that before Pele migrated there from Kahiki, no place in the islands was more beautiful than Puna. (‘Ōlelo No‘eau 79)

This native Hawaiian endemic tree is found on Hawai‘i Island, Maui, Molokai, and Lāna‘i. It grows in mesic and wet forests within the 500–2600ft elevation. ‘Ohe‘ohe can be propagated by seed. When the fruits are ripe, purple, and shedding from the tree, they are ready to be collected for propagation.

‘Ahakea Launui

Rubiaceae, *Bohea elateor*



‘O kane iā Wai‘ololī	<i>Wai‘ololī is the product of males</i>
‘O ka wahine iā Wai‘ololā	<i>Wai‘ololā is the product of females</i>
Hānau ka Okea noho i kai	<i>Born is the Okea living in the sea</i>
Kia‘i ‘ia e ka ‘Ahakea noho i uka	<i>Guarded by the ‘Ahakea living on land</i>

(Kumulipo, line 431-433)

‘Ahakea launui is an endemic native tree that is found growing in mesic and wet forests on all main Hawaiian Islands except for Kaho‘olawe and Ni‘ihau. This tree can be propagated by seed. When fruits are soft and dark purple they can be collected for propagation. *‘Ahakea launui* wood is yellow or reddish. It was used for *papa ku‘i ‘ai* (poi boards) and canoe construction. It was a favorite wood for making *mo‘o* (gunwale strakes of a canoe), *lā‘au ihu* (the bow end piece of a canoe), and *lā‘au hope* (the end piece of a canoe). This wood was also used for frames of doorways and doors. In addition, parts of this tree are used for *lā‘au lapa‘au*.

Manono

Rubiaceae, *Hedyotis terminalis*



Manono is a Native Hawaiian endemic understory plant that is found on all of the main Hawaiian Islands. It grows in mesic and wet forests. *Manono* can be propagated by seed. When the small fruit capsules are dry, the seeds can be collected and used for propagation. *Manono* was one of the trees used for furnishing canoe timber. It was also used for canoe trim and rigging.

Ōpuhe, Hōpue, Hona
Urticaceae, *Urera glabra*



Mahea ka pūlelehua ‘o Kamehameha? Wahi a ka lohe, ‘a‘ole nui.
Aia lākou e lele nei ma luna o ka ōpuhe o ka wao kele o Puna, ‘o ia ho‘i ka hale o ka pe‘elua.

Where are the Kamehameha butterflies? According to what people say there aren't many left. They are found flying above the ōpuhe of Wao Kele O Puna, a home for the caterpillar.

Ōpuhe is a Native Hawaiian endemic tree that is found on all main Hawaiian Islands except Kaho‘olawe and Ni‘ihau. It grows on slopes and gulch bottoms in mesic and wet forests within the 500–5500ft elevation. Seeds and cuttings can be used for propagation. *Ōpuhe* is in the same family as *Māmaki* and can also be used to make *kapa*. The Kamehameha butterflies can use *Ōpuhe* to lay their eggs on and their caterpillars can eat the leaves for food. Traditionally, fibers from the *Ōpuhe* bark were made into cordage and used for fishing nets. In addition, parts of the *Ōpuhe* are also used for *lā‘au lapa‘au*.

Olomea, Pua‘a Olomea
Celastraceae, *Perrottetia sandwicensis*



E ‘imi i ka olomea *Search for the olomea*
 E ‘imi i ka hau *Search for the hau*
 Inā loa‘a *If it is gotten*
 hiki ke hi‘a ahi *the fire can be started*

Olomea is a Native Hawaiian endemic understory plant that is found on all main Hawaiian Islands except Kaho‘olawe and Ni‘ihau. It is found growing in wet forests within the 300-1,830ft. elevation. This plant can be propagated by seed. When its fruits are bright red they can be collected for propagation. *Olomea* is one of the plant forms associated with the pig god Kamapua‘a. He took this form when he was pursued by Pele. The wood was used with soft *hau* wood to produce fire by rubbing (*hi‘a ahi*).

Planting techniques

Little has been mentioned in the literature regarding planting techniques within WKOP however, in Pukui (1983), there is mention of ‘awa (kava, *Piper methysticum*) grown in trees:

‘Awa kau lā‘au o Puna.

Tree growing ‘awa of Puna.

Tree grown ‘awa of Puna was famous for its potency. It was believed that birds carried pieces of ‘awa up into the trees where it would grow

Ka ‘awa lena o Kali‘u.

The yellowed ‘awa of Kali‘u.

Refers to Kali‘u, Kilohana, Kaua‘i. People noticed drunken rats in the forest and discovered some very potent ‘awa there. There is a Kali‘u in Puna, Hawai‘i, where good ‘awa is also grown

Puna, ‘āina ‘awa lau o ka manu.

Puna, land of the leafed ‘awa planted by the birds

Fauna of Wao Kele O Puna

Vertebrate - Avifauna

Twenty-four bird species have been recorded from the Geothermal Resource Subzones and eight endemic species were recorded (Char and Lamoureux 1985:72-98; MCM 1989:V-16-V-29) (Table 1 with proceeding photographs).

Table 1. Bird Species Occurring in Upper Kalapana and Wao Kele O Puna

Family: Species	Hawaiian Name	Common Name	Status	Location	Cultural Significance
Accipitridae: <i>Buteo solitarius</i>	‘Io	Hawaiian Hawk	E, ES	Kīlauea Middle and Lower East Rift Zones	The ‘io signified royalty because of its lofty flight (Pukui and Elbert 1986:102) (Figure 14)
Strigidae: <i>Asio flammeus sandwichensis</i>	Pueo	Hawaiian Short-eared Owl	E	Sea level to at least 8,000 feet on Mauna Loa and Mauna Kea	Regarded often as a benevolent ‘aumakua (family guardian) (Pukui and Elbert 1986:348) (Figure 9)

Family: Species	Hawaiian Name	Common Name	Status	Location	Cultural Significance
Turdidae: <i>Phaeornis obscurus obscurus</i>	‘Ōma‘o	Hawaiian Thrush	E	Kīlauea Middle East Rift Zone	(Figure 13)
Muscicapidae: <i>Chasiempis sandwichensis</i>	‘Elepaio		E	Kīlauea Middle and Lower East Rift Zones	This bird was believed to be the goddess of canoe makers (Pukui and Elbert 1986:41) (Figure 10)
Drepanididae: <i>Psittirostra psittacea</i>	‘Ō‘ū	Hawaiian Honeycreeper	E, ES, Rare	Above 3,000 feet elevation	Its green feathers were used for making cloaks and lei's (Pukui and Elbert 1986:294) (Figure 16)
Drepanididae: <i>Hemignathus virens</i>	‘Amakihi	Hawaiian Honeycreeper	E	Kīlauea Middle and Lower East Rift Zones	The feathers are yellow and greenish and were formerly used in feather capes (Pukui and Elbert 1986:22) (Figure 11)
Drepanididae: <i>Vestiaria coccinea</i>	‘I‘iwi	Scarlet Hawaiian Honeycreeper	E	Kīlauea Middle and Lower East Rift Zones	Its feathers were used extensively in feather work (Pukui and Elbert 1986:96) (Figure 12)
Drepanididae: <i>Himatione sanguinea sanguinea</i>	‘Apapane	Hawaiian Honeycreeper	E	Kīlauea Middle and Lower East Rift Zones	Its feathers were occasionally used for feather work (Pukui and Elbert 1986:28) (Figure 15)
Charadriidae: <i>Pluvialis dominica</i>	Kōlea	Pacific Golden Plover	M	Kīlauea Lower East Rift Zones	A scornful reference to foreigners who come to Hawai‘i and become prosperous and then leave with their wealth, just as the plover arrives thin in the fall each year, fattens up and leaves (Pukui and Elbert 1986:162) (Figure 17)
Columbidae: <i>Streptopelia chinensis</i>		Lace Necked or Spotted Dove	X	Kīlauea Middle and Lower East Rift Zones	
Columbidae: <i>Gepelia striata</i>		Barred or Zebra Dove	X	Kīlauea Lower East Rift Zones	
Columbidae: <i>Columba livia</i>		Rock Dove	X	Kīlauea Lower East Rift Zones	
Timaliidae: <i>Garrulax canorus</i>		Melodius Laughing Thrush	X	Kīlauea Middle and Lower East Rift Zones	
Zosteropidae: <i>Zosterops japonica</i>		Japanese White – eye	X	Kīlauea Middle and Lower East Rift Zones	
Sturnidae: <i>Acridotheres tristis</i>		Common Myna	X	Kīlauea Lower East Rift Zones	
Ploceidae: <i>Lonchura punctulata</i>		Spotted Munia or Ricebird	X	Kīlauea Middle and Lower East Rift Zones	
Ploceidae: <i>Passer domesticus</i>		House Sparrow	X	Kīlauea Lower East Rift Zones	
Fringillidae: <i>Cardinalis cardinalis</i>		Cardinal	X	Kīlauea Middle and Lower East Rift Zones	
Fringillidae: <i>Carpodacus mexicanus frontalis</i>		House Finch	X	Kīlauea Middle and Lower East Rift Zones	

Family: Species	Hawaiian Name	Common Name	Status	Location	Cultural Significance
Phasianidae: <i>Callipepla californica</i>		California Quail	X	Kīlauea Lower East Rift Zones	
Phasianidae: <i>Phasianus colchicus</i>		Ring-necked Pheasant	X	Kīlauea Lower East Rift Zones	
Phasianidae: <i>Lophura leucomelana</i>		Kalij Pheasant	X	Kīlauea Lower East Rift Zones	
Tytonidae: <i>Tyto alba</i>		Barn Owl	X	Kīlauea Lower East Rift Zones	

*The following symbols used in Table 1:

- E = Endemic, native to the Hawaiian Islands
- ES = Currently on the Federal List of Endangered Species
- M = Migratory visitor
- X = Introduced



Figure 9. Pueo, endemic, *Asio flammeus sandwichensis* (Flickr for Yahoo 2013)



Figure 10. 'Elepaio, endemic, *Chasiempis sandwichensis* (Flickr for Yahoo 2013)



Figure 11. 'Amakihi, endemic, *Hemignathus virens virens* (Flickr for Yahoo 2013)



Figure 12. 'Iwi, endemic, *Vestiaria coccinea* (Flickr for Yahoo 2013)



Figure 13. Ōma'ō, endemic, *Myadestes obscurus obscurus* (Flickr for Yahoo 2013)



Figure 14. 'Io, endemic and endangered, *Buteo solitarius* (Wikipedia 2013)



Figure 15. 'Apapane, endemic, *Himatione sanguinea* (Flickr for Yahoo 2013)



Figure 16. 'Ō'ū, endemic and rare, *Psittirostra psittacea* (Wikipedia 2013)



Figure 17. Kōlea, migratory, *Pluvialis dominica* (Flickr for Yahoo 2013)

Invertebrates

Previous studies indicate that native invertebrates are abundant both in the native forests and in cave ecosystems known within WKOP (Howarth;McEldowney and Stone 1991:40-41; MCM 1989: V-27-29).

Table 2. Invertebrates Commonly Found in Native Forests and Cave Ecosystems

Family: Species	Common Name	Status	Location
Theridiidae: <i>Theridion grallator</i>	Hawaiian Happy Face Spider	E	Between the elevation of 980 – 6,600 feet (Figure 18)
Theridiid spp.	Cobweb Spiders	I	In native forest

Family: Species	Common Name	Status	Location
Salticid spp.	Jumping Spiders	I	In native forest
Tetragnathid spp.	Four-fanged Orb Spiders	I	In native forest
Thomisid spp.	Crab Spiders	I	In native forest
Lispocephala spp.	Predatory Muscid Flies	I	In native forest
Dolichopodid spp.	Long Legged Flies	I	In native forest
Drosophilid spp.	Hawaiian Pomace Flies	I	In native forest
Tipulidae spp.	Hawaiian Crane Flies	I	In native forest
Microlepidopteran spp.	Small Bodied Moths	I	In native forest
Macrolepidopteran spp.	Large Bodied Moths	I	In native forest
Eupithecia spp.	Hawaiian Predatory Caterpillars	I	In native forest
Collembolan spp.	Springtails	I	In native forest
Succinid spp.	Hawaiian Amber Snails	I	In native forest
Tornatellinis spp.	Minute Land Snails	I	In native forest
Cixiidae: <i>Oliarus</i> sp	Cave Plant Hopper	I	Cave Ecosystems
Gryllidae: <i>Caconemboius vaius</i>	Kaumana Cave Cricket	E, Threatened	Cave Ecosystems
Lycosidae: <i>Lycosa Hhowarhi</i>	Cave Hunting Spider	E	Cave Ecosystems
Noctuidae: <i>Schrankia</i> sp.	Cave Moth	E / I	Cave Ecosystems
Cambalidae: <i>Dimerogonus</i> sp.	Cave Millipede	E / I	Cave Ecosystems
Ceratopogonidae: <i>Forcipomyia</i> sp.	Fly	E / I	Cave Ecosystems
<i>Isopoda</i> sp.	Cave Isopod	I	Cave Ecosystems

*The following symbols used in Table 2:

E = endemic: native only to the Hawaiian Islands

I = indigenous: native to the Hawaiian Islands and also to one or more other geographic area(s)



Figure 18. Hawaiian Happy Face Spider, *Theridion grallator* (Flicker for Yahoo 2013)

Terrestrial Mammals

The ‘ōpe‘ape‘a, or Hawaiian hoary bat (*Lasiurus cinereus semotus*) (Figure 19), is Hawai‘i’s only native terrestrial mammal and is on both the Federal and State List of Endangered Species. On the Island of Hawai‘i, ‘ōpe‘ape‘a are found primarily from sea level to approximately 7,500 feet elevation and have been observed near the islands summits (13,000 feet elevation). ‘Ōpe‘ape‘a have been found roosting in ‘ōhi‘a, hala, coconut palms, kukui, kiawe, avocado, shower trees, pūkiawe and fern clumps (U.S. Fish and Wildlife Service 2005).



Figure 19. ‘Ōpe‘ape‘a, endemic, *Lasiurus cinereus semotus* (Wikipedia 2013)

Summary

According to *kanaka maoli* thinking and cultural practices, Wao Kele O Puna lies within two horizontal divisions: Wao Ma‘ukele and Wao Akua, the rain belt of the islands, and is occupied by the *akua* of the forest. WKOP has great importance for *kanaka maoli* and is considered a rich gathering resource for traditional Hawaiian practices (Martin 2008:4).

The East Rift Zone of the Kīlauea Volcano, a land-locked tract of forest and lava, dominates the Puna District geologically and runs prominently through the lower portion of WKOP. Based on its elevation, which ranges from 1,000 – 2,280 feet amsl, WKOP falls within the Upland Agricultural Zone or Zone II and Lower Forest Zone or Zone III. Although no perennial waterways are located near or within WKOP, abundant water travels through this area from Mauna Loa. The water, flowing primarily underground and usually exiting near the ocean via springs, is known to be quite pristine having been filtered through miles of lava rock.

The average annual rainfall in the Puna District falls between approximately 120 and 160 inches with temperatures ranging between the sixties and eighties. As expected, the cooler temperatures and heavier rainfall occur in the winter months (October through April) and warmer temperatures and lighter rainfall occur during the summer months (May through September). This combination of stable, moist and warm weather strongly influences dominant vegetation patterns across the Puna District which is wet enough to support forest vegetation throughout this region.

Most of the WKOP is dominated by wet *‘ōhi‘a* forest with native species or *‘ōhi‘a* woodland with *uluhe* fern. The *‘ōhi‘a* forests are environmentally significant and provide critical habitat for a number of rare, threatened or endangered plants (i.e. *‘akū‘akū*, *‘ahakea*) and bird species (i.e. *‘io*, *‘ō‘ū*) (Char and Lamoureux 1985a:6) including the terrestrial mammal, *‘ōpe‘ape‘a*. WKOP has always been considered the “seed bank” for the lower Puna area.

Three highly invasive and fast growing plant species pose a threat to WKOP. The *Miconia calvenscens*, *Albezzia spp.* and Strawberry guava (*Psidium cattleianum*) are known to displace and alter entire native forest ecosystems and continued invasive plant species eradication efforts have been implemented to limit the spread within the reserve (Leialoha 2013:80,97). Invasive faunal species such as pigs, black rats and mongoose pose an additional threat to WKOP and have severely impacted native Hawaiian forest ecosystems as well as native bird species (Leialoha 2013:76).

NĀ AKUA, NĀ KUPUA, A ME NĀ ‘AUMĀKUA O KA WAO KELE A ME KA MOKU O PUNA
Hawaiian gods, demigods, and family gods associated with the forested uplands of Puna

The region of forest for which this study is being conducted called *wao kele* or *wao ma‘ukele* “the wet, moist realm” is situated along the rain belt of the island and known for its large canopy trees of *koa* (*Acacia heterophylla*) and ‘*ōhi‘a* (*Metrosideros polymorpha*). Below *wao kele* is the region of forest named *wao akua* “realm of the gods” as it is an area known to be occupied by the spirits of the forest. Kanahale (2003:8-13) refers to these areas and writes, “Mankind seldom ventured into this area during ancestral times, except when a particular kind of tree was needed and could not be found elsewhere. The large trees acquired from the *wao akua* and *wao ma‘ukele* deserved substantial offerings.” These forested areas housed the vegetation and materials needed for many things such as voyaging, housing, spiritual and medicinal practices, clothing, adornments, and so forth. Therefore, when people gathered resources from these areas, they did so with certain ritual practices that addressed the spirits of the forest.

Hawaiian traditions surrounding ritual practice allowed for the reciprocal exchange of *mana* (spiritual power) between the ‘*āina*, the *akua*, and *kānaka*. These rituals varied from strict ceremonies accompanied by *mōhai* (offerings) of food and sacrifice, to the utterance of a chant or prayer (Pukui et al. 1972, vol.2:122). Beckwith (1976:81) explains, “The great gods each had his own form of worship, his priests and heiaus, his own special symbols of ritual distinction...Besides the great gods there were an infinite number of subordinate gods descended upon the family line of one or another of the major deities and worshiped by particular families or those who pursued special occupations.” Malo (1959:81) further explains, “Each man worshipped the *akua* that presided over the occupation or the profession he followed, because it was generally believed that the *akua* could prosper any man in his calling.” And so with this way of life, it became a custom for *kānaka* to approach any kind of undertaking with the acknowledgement of Hawaiian deities and their various-manifestations.

In the upland forest, there were several cultural activities that involved ritual protocol. For example, the god Kū was invoked when gathering material for *luakini* (temple) construction, *kālai ki‘i* (image carving), and ritual objects. Malo (1951:159) writes, “If the King was minded to worship after the rite of Kū, the *heiau* he would build would be a *luakini*. The timbers of the house would be of *ohia*, the thatch of *loulu* palm or of *uki* grass. The fence about the place would be of *ohia* with the bark peeled off. The *lananuu-mamao* had to be made of *ohia* timber so heavy that it must be hauled down from the mountains. The same heavy *ohia* timber was used in the making of the idols for the *heiau*.” Canoe construction was another activity that involved ritual practice in the upland forest. Malo (1951:127) explains that when a *koa* tree was chosen for a canoe, “the *kahuna* took the axe of stone and called upon the gods: “O Ku-pulupulu, Ku-ala-nawao, Ku-moku-halii, Ku-ka-ieie, Ku-palalake, Ku-ka-ohia-laka.” These were the male deities. Then he called upon the female deities: “O Lea and Ka-pua-o-alakai.” In another instance, bird-catchers would appeal to the god Kū-huluhulu. It is written in the book titled, *Nānā I Ke Kumu*, “With little formality, the Hawaiian would ask forgiveness for taking from nature’s bounty. The bird-catcher would speak to Kū in his manifestation as a god of *hulu* (feathers): “Oh Kū-huluhulu, forgive me for catching this bird and taking

his feathers. They are needed for a *kihei* [mantle] for my chief [named]...” (Pukui et al. 1972, vol.2:134). Plant gathering for medicinal use was another occasion in which certain *akua* were called upon. For example, Kū and his wife Hina were invoked when medicinal plants were gathered, as they are the *akua* associated with the male and female properties in healing plants and in ritual (Pukui et al. 1972, vol.1:24). Overall, these examples highlight a few activities involving ritual practice that may have occurred in areas such as *wao kele o Puna*.

The following table includes a list of several *akua* (gods), *kupua* (demi-gods), and *‘aumākua* (family gods) whose *mana* (spiritual energy) and *kinolau* (body forms) manifest throughout Hawai‘i. From the multitudes of *akua*, we selected those that are instrumental in vulcanism, re-vegetation, traditional practices of the upland forests, and those that predominantly occur in the *mele* and *mo‘olelo* of Puna. With the creation of this table, we hope to bring a heightened awareness of traditional Hawaiian knowledge that inspires current and future generations to learn more about this *‘āina*, to explore the functions of these *akua*, and to utilize this list as a foundation to build upon.

Abbreviations in Table

AF	Elbert, <i>Selections from Fornanders Hawaiian Antiquities and Folklore</i>
F	Female
HA	Handy, <i>Traces of totemism in Polynesia</i>
HE	Handy, <i>Native Planters in Old Hawaii: Their Life, Lore, and Environment.</i>
HM	Beckwith, <i>Hawaiian Mythology</i>
KH	Kanahele, <i>Ka Honua Ola ‘Eli ‘eli kau mai</i>
KM	Kamakau, <i>Ruling Chiefs of Hawai‘i</i>
M	Male
MA	Malo, <i>Hawaiian Antiquities</i>
NH	Report: <i>Native Hawaiian Ethnographic Study for the Hawai‘i Geothermal Project Proposed for Puna and Southeast Maui</i>
NB	Emerson, <i>Pele and Hi ‘iaka: A Myth from Hawaii</i>
PE	Elbert & Pukui, Pukui & Elbert, <i>Hawaiian Dictionary</i>
PK	Elbert & Pukui, <i>Glossary of Hawaiian gods, demigods, family gods, and a few heroes</i>
PR	Andrews, <i>A Dictionary of the Hawaiian Language: Revised by Henry H. Parker</i>
PS	Handy & Pukui, <i>Polynesian Family System of Ka‘ū</i>
RC	Craig, <i>Dictionary of Polynesian Mythology</i>
VA	Valarie, <i>Kingship and Sacrifice: Ritual and Society in Ancient Hawaii</i>
WH	wehewehe.org

**See References for complete citations

Hawaiian Words used in table

Āholehole	Young stage of the āhole, Hawaiian flagtail
Akua noho	Spirit that takes possession of people & speaks through them as a medium.
Ali‘i	Chief or chiefess
‘Ama‘ama	Mullet, <i>Mugil cephalus</i>
‘Āma‘uma‘u	An endemic genus of ferns, <i>Sadleria</i>
‘Anā‘anā	Black magic, evil sorcery by means of prayer and incantation
‘Aumakua	Family or personal gods, deified ancestors

‘Awa	The kava, <i>Piper methysticum</i>
‘Elepaio	A species of flycatcher with subspecies on Hawai‘i, <i>Chasiempis sandwichensis sandwichensis</i>
Hala	The pandanus or screw pine, <i>Pandanus odoratissimus</i>
Halapepe	An endemic plant, <i>Pleomele hawaiiensis</i>
Heiau	Place of worship, shrine, temple
Hilu	Various species of reef fishes of the genus <i>Coris</i>
Hula	Dance, song or chant used for the hula
Humuhumu-nukunukuapua‘a	A type of trigger fish, <i>Rhinecanthus aculeatus</i> , <i>R. rectangularis</i>
‘Ie‘ie	An endemic woody, branching climber, <i>Freycinetia arborea</i>
Ipu o Lono	Gourd of Lono
Kahu	Guardian, caretaker, keeper, warden
Kahuna	Priest, sorcerer, expert in any profession
Kahuna lapa‘au	Medical priest or practitioner
Kapu	Taboo, prohibition
Kauna‘oa	A native dodder, <i>Cuscuta sandwichiana</i>
Koa	The largest of native forest trees, <i>Acacia koa</i>
Kōlea	Pacific golden plover, <i>Pluvialis dominica</i>
Kuahu	An Altar
Kūkaepua‘a	A creeping grass, <i>Digitaria pruriens</i>
Kukui	Candlenut tree, <i>Aleurites moluccana</i>
Kupua	Demigod or culture hero, especially a supernatural being possessing several forms
Kupukupu	Sword fern, <i>Nephrolepis exaltata</i>
Lehua	Flower of the ‘ōhi‘a tree (<i>Metrosideros macropus</i> , <i>M. collina</i> subsp. <i>polymorpha</i>)
Lei	Lei, garland, wreath; necklace of flowers
Makahiki	Ancient festival beginning about the middle of October and lasting about four months, with sports and religious festivities and taboo on war
Maile	A native twining shrub, <i>Alyxia olivaeformis</i>
Maku‘u	End pieces of a canoe; neck cut on the stern end of a canoe hull hewn in the mountains, to which a rope was fastened for dragging canoe to the sea
Māwaewae	A ceremony for a child, held a few days after birth
Mo‘o	Lizard, dragon
‘Ohe	A native tree, <i>Reynoldsia sandwicensis</i>
‘Ōhelo	A small native shrub, <i>Vaccinium reticulatum</i>
‘Ōhi‘a lehua	A tree, <i>Metrosideros macropus</i> , <i>M. collina</i> subsp. <i>polymorpha</i>
Olomea	A native shrub or small tree, <i>Perrottetia sandwicensis</i>
‘Ō‘ō	A black honey eater, <i>Moho nobilis</i> , with yellow feathers in a tuft under each wing, endemic to island of Hawai‘i
Pahapaha	Same as līpahapaha, sea lettuce
Pala‘ā	The lace fern, <i>Sphenomeris chinensis</i> syn. <i>chusana</i>
Pule ho‘oulu	A prayer that causes growth
Wa‘a	Canoe, rough-hewn canoe
‘Uhaloa	A small, downy, American weed, <i>Waltheria indica</i> var. <i>americana</i>

Table 3. Akua associated with realms of Wao Kele O Puna

NAME	LEXICOLOGY	FUNCTION
Ailaau (M)	<i>'Ai-lā'au</i> PK: <i>Lit.</i> , wood eater.	Fire god before the arrival of Pele (PK:381).
Haihailauahea (F)	<i>Ha'iha'i-lau-āhea</i> PE: <i>Lit.</i> , murmuring [of the] many breezes.	A goddess who had to do with the flame of fire. Her share in the care of a fire, or, perhaps, of Pele's peculiar fire, seems to have been confined to the base of the flame (NB:38).
Hainakolo (F)	<i>Ha'ina-kolo</i> PK: <i>Lit.</i> , grumbling answer.	A forest-dwelling goddess of tapa makers and bird-catchers, sometimes referred to in chants as Ha'i-wahine or Ha'i (PK:381). The <i>pule ho'oulu</i> " <i>Eia au e Laka, e Kāne, e Ha'iwahine</i> " reveals that Hi'iaka is the causative for growth. Laka is the <i>kuahu</i> and the plants on the <i>kuahu</i> and Ha'iwahine is used as a medium through which inspiration may be transmitted. This is the hierarchy (KH:123).
Haluluikekihiokamoku (M)	<i>Halulu-i-ke-kihi-o-ka-moku</i> PK: <i>Lit.</i> , Halulu in the corner of the island.	A bird god said to have been born from the shoulder of his mother, Haumea. In some stories, Halulu is a man-eating bird slain by Aukele. Heiaus at Puna, Hawai'i and at Kaunolū, Lanai, were named Halulu (PK:382). Mythical birds called Halulu, Kiwa'a, Iwa appear in the stories as bearers overseas or to the heavens... Halulu in the Aukelenui legend is the man-eating bird from Kahiki who can also take human form (HM:92). Kū-ka-'ili-moku was a feather god whose feathers, it was said, had formerly grown on the foreheads of the great birds Halulu and Kiwa'a (KM:179).
Haulani (F)	<i>Haulani</i> PK: <i>Lit.</i> , royal ruler.	Daughter of Hina, sister of Haunu'u and Kamapua'a; plant goddess of Kamapua'a (PK:382).
Haumea (F)	<i>Haumea</i> PK: <i>Lit.</i> , red ruler.	An earth-mother goddess equated with Papa, La'ila'i, and Kāmeha'ikana, the "great source of female fertility" who bore children in successive generations...She is considered the mother of Pele and of Pele's many siblings...She presided over childbirth (PK:382). Kāmeha'ikana is a variant name for Haumea, as when associated with breadfruit trees (PK:386). Haumea is the earth and symbolic mother of all life forms...Haumea is the most significant female form, endowed with fertility and procreative power (KH:85). <i>Lua-wahine</i> , said to be an incarnation, or more properly, perhaps, a spiritual form (<i>kino-lau</i>) of Haumea (NB:94).
Haunu (F)	<i>Haunu'u</i> PK: <i>Lit.</i> , elevated ruler.	Daughter of Hina, sister of Haulani and Kamapua'a; plant goddess of Kamapua'a (PK:382).
Hiiakaikapoliopole (F)	<i>Hi'iaka-i-ka-polio-pele</i> PK: <i>Lit.</i> , Hi'iaka in the bosom of Pele.	A younger sister of the goddess Pele. She is the heroine of the epic concerning trip from Kīlauea Volcano to Kauai to find and fetch Pele's dream lover, Lohi'au; on her long and dangerous journey she transformed many evil <i>mo'o</i> into stones which are still visible... One of her forms was the <i>pala'ā</i> lace fern used to treat diseases. As the physician of the Pele family, she resuscitated

NAME	LEXICOLOGY	FUNCTION
		Lohi'au. She instituted the eating of fish from head to tail. She was worshipped by hula dancers (PK:383). She presides over Laka and other deities of <i>hula</i> (KH 123). She is the growth of new flora on fresh lava flow. The greenery of the wildwood is a manifestation of Hi'iaka, and the 'awa is part of that greenery (KH:90-91). Just as vegetation possesses both medicinal and poisonous properties, Hi'iaka can function as the healer who restores life and its antithesis -the one who takes life (KH:129). Hi'iaka's residence is revealed as the eastern gate of Ha'eha'e at Kumukahi. This aligns Hi'iaka with the sun and not the fire in the crater. Her energy is directly from the sun. This also aligns Hi'iaka with the initial <i>Moa'e</i> , or tradewind, which aids the dispersal of seeds. With this residence she is also known as the woman of the east, who is the female counterpart to Kāne of the rising sun (KH:161-162). Pele and Hi'iaka also were <i>akua noho</i> ...Hiiaka caused hemorrhage from the head of the <i>kahu</i> of whom she took possession (MA:116).
Hiiakaikapuaenaena (F)	<i>Hi'iaka-i-ka-pua-'ena'ena</i> NB: Hi'iaka of the burning flame.	A sister of Pele who prepared <i>lei</i> and kava for Pele. The skin of any person she possessed reddened. She was also known as Kuku-'ena-i-ke-ahi-ho'omau-honua (beating hot in the perpetual earth fire), and in this guise she was a healer and guide to travelers lost in the wilderness, vanishing when they found their way. She was also known as Hi'iaka-i-ka-puaaneane (Hi'iaka in extreme old age) (PK:383). Her emblem was the little bud like pea-blossom flame (NB:222).
Hikuikanahale (M)	<i>Hiku-i-ka-nahale</i> PK: <i>Lit.</i> , Hiku in the forest.	Generally known as Hiku, this hero was the son of Kū-'ōhi'a-laka and the goddess Hina (PK:383).
Hina (F)	<i>Hina</i> PK: <i>Lit.</i> , prostrate.	A goddess associated with Kū (upright), with whom she had incestuous relations. <i>Hina</i> in this instance means "prostrate." When gathering medicine with their left hands, people prayed to Hina for success (PK:383).
Hinaea (F)	<i>Hina-'ea</i> PE: <i>Lit.</i> , Hina [of] thrush or infectious diseases.	Goddess of sunrise and sunset, a healer (especially of thrush disease), and an expert tapa maker with tapa stamps. She sometimes took the form of <i>lele</i> bananas. (PK:383).
Hinapukuai (F)	<i>Hina-puku-'ai</i> PK: <i>Lit.</i> , Hina gathering vegetable food.	Goddess of food plants, also known as Hina-hele, and sister of Hinapukui'a. She assumed the form of <i>Lea</i> , and as an ' <i>elepaio</i> flycatcher alighted on trees that canoe makers wanted to cut; if she pecked a tree, canoe makers knew that it was insect ridden and not suitable for a canoe. The spot where she landed on a felled tree was to be the prow; then she ran to the stern (PK:384).
Hinauluohia (F)	<i>Hina-ulu-'ōhi'a</i> HM: <i>Lit.</i> , Hina of the ' <i>ōhi'a</i> growth.	Is the female goddess of the <i>ohia-lehua</i> forest. To both gods and goddesses the flowering <i>ohia</i> is sacred and no one on a visit to the volcano will venture to break the red flowers for a wreath or pluck leaves or branches on the way thither. Only on the return, with proper invocations, may the flowers be gathered. A rainstorm is the least of the unpleasant results that may follow tampering

NAME	LEXICOLOGY	FUNCTION
		with the sacred <i>lehua</i> blossoms (HM:17).
Honoalele (M)	<i>Hono-a-lele</i> PK: <i>Lit.</i> , constant flying.	A god with a wind form associated with Makani-ke-oe in love sorcery; he created mad love and sleeplessness (PK:384).
Hopoe (F)	<i>Hōpoe</i> PK: <i>Lit.</i> , fully developed, as a <i>lehua</i> flower.	A friend of Hi‘iaka-i-ka-poli-o-pele. Other names are Hōpoe-lehua and Hōpoe-wahine (PK:384). She is the <i>ki‘i</i> , or recipient of the natural movements inspired by the gods, which developed into the <i>ha‘a</i> , or the dance (KH:115). Hōpoe, the woman, is the dancer whose residency is at Hā‘ena. The Pele and Hi‘iaka saga employs Hōpoe as a friend, teacher of the <i>hula</i> , and <i>lei</i> maker (KH:114).
Iouli (M)	<i>‘Io-uli</i> PK: <i>Lit.</i> , dark hawk.	A bird god (PK:385).
Kahakuo (M)	<i>Ka-haku-‘ō</i> PE: <i>Lit.</i> , the overseer beyond.	The god of the mountains (MA:83).
Kahalaomapuana (F)	<i>Ka-hala-o-mapuana</i> HA: <i>Lit.</i> , the fragrant <i>hala</i> blossom.	The clever youngest sister of the Maile girls bears the name of a plant sacred to the <i>hula</i> dance and one of the most prized for its odor, the fragrant pandanus blossom...Kahalaomapuana is the same as the youngest sister of the Ke-ao-melemele story, Kaulana-poki‘i, she who remains a virgin and becomes an expert in medicine, that is, in sorcery- a sorcery which she puts into practice in the Kaulana-poki‘i and Kaumailiula romances by bringing the dead to life and entangling her enemy in growing vines. She may thus be regarded as representing the deity of the Maile family of sisters as she would appear in her human form for purposes of romance (HM:533).
Kamapuaa (M)	<i>Kama-pua‘a</i> PK: <i>Lit.</i> , hog man.	This deity, a particularization of the god Lono, is half man, half pig (HA:47). The demigod whose rootings created valleys and springs...He had many affairs and is a symbol of lechery. He exchanged ribald taunts with Pele and then called on his plant forms- <i>olomea</i> , <i>hala</i> (pandanus), <i>‘uha-loa</i> , <i>‘āma‘uma‘u</i> (ferns) - to block her advancing fires, which they did (AF:228-229). He finally mated with Pele, taking for himself Hilo, Hāmākua, and Kohala, and allotting Ka‘ū, Puna, and Kona to Pele. When he fought the dog Kū-ilio-loa he called on his <i>kukui</i> , <i>‘uha-loa</i> , and <i>‘āma‘uma‘u</i> forms to hold the dog’s mouth open; he then multiplied himself into many pigs and entered the mouth to kill the dog (AF:214-215). Other forms included a handsome man, <i>kūkae-pua‘a</i> grass, clouds, the <i>humuhumu-nukunuku-a-pua‘a</i> fish, and the god Lono (PK:386). <i>‘Ama‘ama</i> (mullet) and/or <i>‘aholehole</i> ...were “bodies” (<i>kino</i>) of Kamapua‘a (PS:81). <i>Hāpu‘u</i> (<i>Cibotium splendens</i>), sweet potato (<i>‘uala</i>), the seaweed <i>limu līpu‘upu‘u</i> , the banana variety <i>hinu-pua‘a</i> , the taro <i>hiwa</i> , the <i>kūmū</i> , <i>moano</i> (goatfish), <i>‘ama‘ama</i> (<i>Mugil cephalus</i>), and <i>āholehole</i> (immature stage of the <i>Kuhlia sandvicensis</i>) fish are bodies of Kamapua‘a (VA:10-11).

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Kamohoalii (M)	<i>Ka-moho-ali'i</i> PK: <i>Lit.</i> , the royal selected one.	Pele's older and favorite brother, the "most celebrated of ...ancestral sharks" (HM:129), who accompanied Pele from Kahiki to Hawaii. He had a human form as well as shark and <i>hilu</i> fish forms (PK:387). The eldest child, Kamohoali'i, or Kānekamohoali'i, is the initiator, the one who initiates the birth and migration in the story. However, he is also the initiator of the eruptions. In the form of Kāne, he is the heat in the earth and in the sky (KH:5). He had an earthly form of a <i>palikū</i> (standing cliff) which was lifted straight out of the ocean during the seismic shifting of the plates. He also had a human form (NH:162).
Kanaloa (M)	<i>Kanaloa</i> PE: <i>Lit.</i> , secure, firm, immovable, established, unconquerable.	One of the four great gods (PK:387). He is a god of the subterranean world, sea bottom, seawater (<i>kai</i>), and tides. His body forms include the banana, bamboo, 'awa, octopus (or squid), the 'ama'ama and āholehole fish, the rooster, and the pig. He is associated with the sunset, winter season, the colors red and black, and the directions left, west, and south (VA:15). Kanaloa is the god of the ocean, which is a symbol of death (VA:17). <i>Honu</i> (sea turtle), probably a form of Kanaloa. 'Ea (sea tortoise), probably a form of Kanaloa. <i>Nuao</i> (porpoise), probably a form of Kanaloa. <i>Palaoa</i> (whale), a form of Kanaloa. <i>Hahalua</i> or <i>hihimanu</i> (spotted sting ray, <i>Aetobatus narinari</i>), probably a form of Kanaloa (PS:177). His companion and leader was Kāne. They were renowned as kava drinkers, and they found water in many places. Three days of the lunar month were sacred to Kanaloa-the twenty-fourth (<i>Kāloa-kū-kahi</i>), the twenty-fifth <i>Kāloa-kū-lua</i>), and the twenty-sixth (<i>Kāloa-kū-pau</i>). Some considered him a god of the sea. Emerson (MA:111) gives a healing prayer to him as god of squids (he had this form, as well as that of the 'ala'ala-pū-loa weed) (PK:387). The 'awa is a vegetable manifestation of Kanaloa...Whether the 'awa drinking is for ritual or social purposes, Kāne and Kanaloa are addressed as key deities (KH:85). Water used for 'awa drinking is also Kāne and Kanaloa (KH:92).
Kane (M)	<i>Kāne</i> PK: <i>Lit.</i> , male	The "leading god among the great gods" (HM:42); a god of creation and the ancestor of chiefs and commoners; a god of sunlight, fresh water, and forests to whom no human sacrifices were made (PK:387). He is a god of the male power of procreation, irrigated agriculture, fishponds, and sorcery. His body forms include the emerged world, light, lightning, spring water (<i>wai</i>), the banana, sugarcane, bamboo, 'awa, the 'ama'ama and āholehole fish, the rooster, and the pig. He is associated with the directions right, east, north and the colors red, black, and white (yellow). He also presides over dawn and the summer season (the sun's northern limit on eclipse) (VA:15). The twenty-seventh night of the lunar month was sacred to Kāne. Kanaloa was his constant companion, but Kāne's name always preceded (PK:387). The 'awa plant is a form of Kāne and Kanaloa, both male. Water used for 'awa drinking is also Kāne and Kanaloa (KH:92). Fresh water is the

NAME	LEXICOLOGY	FUNCTION
		manifestation of Kāne, and when preparing the <i>‘awa</i> , Kāneikawaiola, or Kāne of the living water is summoned (KH:84). Kāne and Laka are male/female entities of many of the same forest plants, such as the <i>‘ie ‘ie</i> , <i>pua lehua</i> , <i>halapepe</i> , and <i>maile</i> (KH:123). Kane and Lono were the deities most commonly addressed by those who offered prayers for the restoration of any one to health (MA:96). The owl, <i>Pueo</i> ...was a “body” of one of the Kāne of the Pele clan (PS:119).
Kaneapua (M)	<i>Kāne-‘āpua</i> PK: <i>Lit.</i> , Kāne fish trap.	A trickster <i>kupua</i> described variously as a brother of Pele, as a bird brother of Nā-maka-o-Kaha‘i, as a younger shark brother of Kāne and Kanaloa, and as a fish god of Kaunolū, Lanai (PK:387). Kane-pua‘a (Kane-apua) is worshiped as a god of agriculture to bring rain and abundance to crops (HM:207). Emerson calls Kane-(lau)-apua a healing and benevolent god from Lanai who is joined with his relative Kane-milo-hai as an emissary to save men from death (HM:452).
Kanehekili (M)	<i>Kāne-hekili</i> PK: <i>Lit.</i> , thunder Kāne.	God of thunder (HM:48). Thunder is Kane-hekili (Male-in-the-form-of-gentle rain) (PS:118).
Kanehoalani (M)	<i>Kāne-hoa-lani</i> PK: <i>Lit.</i> , Kāne royal companion.	A god who “ruled over the heavens” (MA:83). A father or ancestor of Pele (PK:387). He is the sun. In the migration chant “ <i>Kū mākou e hele me ku‘u mau pōki ‘i aloha</i> ”...Pele calls on the deity Kānehoalani and uses the sun as a guide for her movement... the father has to do with a migratory path, or the pull of magma by the sun (KH:15).
Kaneholopali (M)	<i>Kāne-holo-pali</i> PE: <i>Lit.</i> , Kāne [who] travels the cliffs.	The god of precipices (<i>pali</i>) (MA:83).
Kaneikawaiola (M)	<i>Kāne-i-ka-wai-ola</i> KH: <i>Lit.</i> , Kāne of the living water.	Fresh water is the manifestation of Kāne, and when preparing the <i>‘awa</i> , Kāneikawaiola, or Kāne of the living water is summoned (KH:84).
Kanekapolei (M)	<i>Kāne-kapolei</i>	A god of flowers and shrubs (NB:141).
Kaneluhonua (M)	<i>Kāne-lū-honua</i> PE: <i>Lit.</i> , Kāne [who] scatters the earth.	The god who ruled over the earth (MA:83).
Kanemilohai (M)	<i>Kāne-milo-ha‘i</i> PE: <i>Lit.</i> , Kāne [who] curls and bends.	Kānemiloha‘i...is the movement of the magma vertically from its source to the earth’s surface (KH:6). The <i>akuhekuhe</i> fish is said to be one of his god’s forms (HM:452).
Kanepohakukaa (M)	<i>Kāne-pōhaku-ka‘a</i> PS: <i>Lit.</i> , Male [sky] –the rock roller.	The god of hard (<i>basaltic</i>) stone (MA:83). Ka-poha-ka‘a (Kane-pohaku-ka‘a), who is the same as Ka-‘uila-nuimakeha (Male [sky] lightning-flash-great-streaking)...Lightning not infrequently strikes a rain drenched tree or prominent rock or foreland, or a cliff face, causing stones to come

NAME	LEXICOLOGY	FUNCTION
		rolling and crashing down cliffs and into ravines. That is Ka-poha-ka‘a (PS:118). He was never represented by an image but came to his worshipers in dreams in human form with a head of stone. He was invoked by warriors to bless their weapons and make them “strong as rocks,” and by farmers to bless their fields (HM:88).
Kaohelo (F)	<i>Ka-‘ōhelo</i> PE: <i>Lit.</i> , the ‘ōhelo [fruit].	A younger sibling to Pele. ‘ <i>Ōhelo</i> berries, which grow in close proximity to the crater, are considered the <i>kinolau</i> , or physical form of Ka‘ōhelo (KH:64). From the body of Kaohelo, sister of Pele, grew the ohelo bushes so abundant on volcanic mountainsides; “the flesh became the creeping vine and the bones became the bush plant” (HM:99).
Kaomealani (M)	<i>Ka-o-mea-lani</i> PE: <i>Lit.</i> , the heavenly one that pierces through.	A god of rain. He indicated his presence by piling up volumes of clouds (NB:118).
Kapoulakinau (F)	<i>Kapo-‘ula-kīna‘u</i> PK: <i>Lit.</i> , Kapo red dotted with dark.	More commonly known as Kapo, this unusual goddess was a sister of Pele and daughter of Haumea. She had a dual nature- as a benevolent <i>hula</i> goddess identified with Laka, and as a fierce goddess of sorcery. As a <i>hula</i> goddess, one of her forms was the <i>hala-pepe</i> tree, branches of which were placed on <i>hula</i> altars (PK:388). The tree ‘ <i>ohe</i> was another form (PS:125). The color red (PS:132). <i>Kīna‘u</i> is a term used for a certain type of <i>puhi</i> (eel) (NH:162). Kapo‘ulakīna‘u, the female deity of giving or taking life, wore <i>hala</i> as a shield of protection (KH:113). There was a large number of deities that took possession of people and through them made utterances. Pua and Kapo were deities of this sort...on account of such obsession, a person would be afflicted with a swelling of the abdomen (<i>opu-hao</i>) which was a fatal disease (MA:116). Kapo’s power to separate her female sexual organ from her body gives her the name of Kapo-kohe-lele (Kapo with the traveling vagina) called also Kapo-mai-ele (HM:186).
Kapuoalakai (F)	<i>Ka-pū-o-alaka‘i</i> MA: <i>Lit.</i> , the knot of guidance.	A forest goddess who presided over the lines (<i>pū</i>) by which new canoes were guided (<i>alaka‘i</i>) as they were pulled from the mountains to the sea (PK:388). Ka-pu-o-alakai, the knot of guidance, <i>i.e.</i> , the knot by which the hauling line was attached to the <i>makuu</i> (MA:133). Kapu-alakai and Kau-ka-hoola-mai were female deities worshipped by women and practitioners of medicine (MA:82).
Kauilanuimakehailani (M)	<i>Kauila-nui-mākē-hāi-ka-lani</i> PS: <i>Lit.</i> , Male [sky] lightening-flash-great-streaking.	Kauilanuimākēhāikalani is the lightning. He also has a <i>honu</i> (turtle) form in the ocean (NH:162). Kauilanuimākēhāikalani and Kānehekali...are the lightening and thunder generated from the earth in conjunction with a volcanic eruption (KH:6). Ka-‘uila-nui-make-hae was much dreaded, for hunters and gatherers of foods and medicine in the uplands, as well as people on the plain (<i>kula</i>) knew well the sudden searing death, or blindness or paralysis or burns resulting from a lightening

NAME	LEXICOLOGY	FUNCTION
		stroke. His <i>kapu</i> required one to lie face down, never breast and face up, when he was about; and to keep all water containers covered (PS:118).
Keaomelemele (F)	<i>Ke-ao-melemele</i> PK: <i>Lit.</i> , the yellow cloud.	A daughter of Kū and Hina born as a blood clot from the crown of Hina's head. She was raised at the mythical land Ke-'alohi-lani (the heavenly glow) by Mo'o-inanea, the chiefess of all <i>mo'o</i> . She was guarded by horizon clouds (' <i>ōpua</i>). She finally married her brother, Kau-ma-'ili-'ula (placed at red skin). She visited all the islands and excelled in chanting, hula, and surfing. Finally she and her husband returned to Ke-'alohi-lani, and thereafter she was worshiped by soothsayers and readers of omens (PS:388-389).
Kihanuilulumoku (M)	<i>Kiha-nui-lūlū-moku</i> PK: <i>Lit.</i> , great island-shaking lizard.	The fierce lizard <i>mo'o</i> guardian of Pali-uli, a mythical paradise on Hawai'i and home of the sacred princess Lā'ie-i-ka-wai. He often rested on the tops of ' <i>ōhi'a</i> trees to observe the approach of enemies (PK:389).
Kihawahine (F)	<i>Kiha-wahine</i> PK: <i>Lit.</i> , female lizard.	The "most famous" (HM:125) of <i>mo'o</i> ; she was a Maui chiefess who at death became a <i>mo'o</i> and a goddess worshiped on Maui and Hawaii. She had a dog, chicken, mullet, and spider forms. Kamehameha set up her image in a <i>heiau</i> . It was carried on <i>makahiki</i> tours and people prostrated themselves before her (PK:389). All the lizards (<i>mo'o</i>) are "bodies" of the legendary giant <i>Mo'o</i> Kiha-wahine (PS:119).
Koleamuku (M)	<i>Kōlea-muku</i> PE: <i>Lit.</i> , the plover [that is] cut short.	Kolea-muku was a god who healed acute diseases (MA:111). When an <i>alii</i> had recovered from a malady he built a <i>heiau</i> , which was called either a Lono-puha or a Kolea-muku (MA:109). Kolea-muku (<i>muku</i>) is probably another name for the <i>aumakua</i> of the <i>kolea</i> birds elsewhere called Kumukahi (HM:119).
Komohanaokala (M)	<i>Komohana-o-ka-lā</i> HM: <i>Lit.</i> , entering in of the sun	Hawaiian god invoked to cure sickness (HM:12; RC:120).
Ku (M)	<i>Kū</i> PK: <i>Lit.</i> , upright	In some accounts, Kū and Hina were the first gods to reach Hawaii, and were followed next by Kāne and Kanaloa, and last by Lono (HM:11). Kū (upright) represented male generating power, and Hina (prostrate) was the expression of female fecundity and the power of growth. Kū refers to the rising sun, and Hina to the setting sun; hence their realm includes the whole earth and the heavens and all generations of man born and unborn (HM:12-13). Various forms of Kū were appealed to for rain and growth, fishing, and sorcery, but he was the best known as the god of war. When gathering medicine with their right hands, people prayed to Kū for success (PK:389). Reddish things were sacred to him (HM:19). The third, fourth, fifth, and sixth nights of the lunar month were sacred to Kū. He was also prayed to for canoe building. His body forms include forest trees (<i>lehua</i> , <i>koa</i> , etc.), the coconut tree, breadfruit (' <i>ulu</i>), ' <i>ie'ie</i> , the dog, ' <i>io</i> (hawk), fish (esp.

NAME	LEXICOLOGY	FUNCTION
		game fish), and the 'ō'ō bird (VA:15).
Kualanawao (M)	<i>Kū-ā'ā'ana-wao</i> PK: <i>Lit.</i> , Kū [of the] upland offering.	A god of the forest (<i>wao</i>) and of canoe makers. He was banished by Pele for attempting to protect Lohi'au from Pele's fires (HM:176-177;PK:389). Ku-ala-na-wao, or Ku-ae-la-na-wao, there stands the forests, a wood land deity, one of the gods of the <i>wa'a</i> (MA:133).
Kuhailimoe (M)	<i>Kū-haili-moe</i> PE: <i>Lit.</i> , Kū [of the] sleeping spirit.	The same god as <i>Ku-haili-moku</i> , who bedecked the land with greenery, a god also worshiped by canoe-makers (NB:146). One of the forms, or characters, of the god Kū, representing him as a smoother and beautifier of the landscape (NB:38). One of the Kū gods, whose function it was to induce or preside over dreams at night (NB:140).
Kuhaimoana (M)	<i>Kū-ha'i-moana</i> PK: <i>Lit.</i> , Kū following ocean.	A shark god, brother of Pele, who lived at Ka'ula islet, where he was left when the Pele family migrated from Kahiki to Hawaii. He was said to be thirty fathoms long and to be the husband of Ka-āhu-pāhau (HM:129). He was also called Kū-hei-moana (PK:390). Kūha'imoana...is descriptive of the horizontal movement of magma under the ocean and through the earth (KH:6).
Kuholoholopali (M)	<i>Kū-holoholo-pali</i> HM: <i>Lit.</i> , Kū sliding down steps.	As god of the forest and of rain Ku may be invoked as: Ku-holoholo-pali (HM:14-15). Ku-holoholo-pali (-ho'oholo-pali) who steadies the canoe when it is carried down steep places (HM:16).
Kuhuluhulumanu (M)	<i>Kū-huluhulu-manu</i> PE: <i>Lit.</i> , Kū [of the] bird feathers.	Kū-huluhulu-manu was the god of bird catchers, bird snarers (<i>poe-ka-manu</i>), bird limers and of all who did feather work (MA: 82).
Kukaieie (M)	<i>Kū-ka-'ie 'ie</i> PE: <i>Lit.</i> , Kū [of the] 'ie 'ie vine.	Worshiped by those who went up into the mountains to hew out canoes (MA:82). As god of the forest and of rain Ku may be invoked as: Ku-ka'ieie (HM:14-15).
Kukaohialaka (M)	<i>Kū-ka-'ōhi'a-laka</i> PK: <i>Lit.</i> , upright 'ōhi'a tree Laka.	A Hawaiian rain god, a patron god of the <i>hula</i> , a patron god of canoe builders (RC:124). Ku, the rough one, or the chip-maker, one of the gods of the <i>wa'a</i> (MA:133). Ku-mauna and Ku-ka-ohialaka were locally worshiped as rain gods (HM:15). He was the father of Hiku-i-ka-nahele (PK:391).
Kukuena (F)	<i>Kuku'ena</i> PE: <i>Lit.</i> , beating hot.	Kuku'ena is multifaceted. Her name surfaces in chants with other great female deities, and her counterpart in the fire family is Hi'iakakuilei. Like Hi'iakakuilei, Kuku'ena moves in the capacity of a faithful sibling to Pele. In the chants she tends to the flame, strings lei, cares for the <i>lehua</i> grove at He'eia, and is also responsible for preparing the 'awa for the family female's 'awa ceremony (KH:86). She was wont to act as the guide to travelers who had their way in the mazes of a wilderness. So soon, however, as the traveler had come clear into a clear place and was able to orient himself, she modestly disappeared (NB:221).

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Kulipeenui (M)	<i>Kūli-pe'e-nui</i> PE: <i>Lit.</i> , the great mass that creeps along.	A deity, or an idealization, of a lava flow. The feature that seems to be emphasized is the stumbling, crawling, motion, which as seen in a flow, may be compared to the awkward ataxic, movement of one whose knees are dislocated and leg-bones broken (NB:205).
Kumokuhalii (M)	<i>Kū-moku-hāli'i</i> PK: <i>Lit.</i> , Kū island spreader.	A god of forests and canoe makers; his wife was Lea (PK:390). Canoe builders prayed to the canoe-building gods for aid in their special capacities: Ku-moku-hali'i their chief (HM:15).
Kumauna (M)	<i>Kū-mauna</i> HM: <i>Lit.</i> , Kū [of the] mountain.	Ku-mauna and Ku-ka-ohia-laka were locally worshiped as rain gods (HM:15). Ku-mauna (Ku of the mountain) is one of the forest gods banished by Pele for refusing to destroy Lohi'au at her bidding. He is said to have lived as a banana planter in the valley above Hi'ilea in Ka-u district on Hawai'i which bears his name. There he incurred the wrath of Pele and was overwhelmed in her fire. Today the huge boulder of lava which retains his shape in the bed of the valley is worshiped as a rain god (HM:17-18).
Kumuhonua (M)	<i>Kumu-honua</i> PK: <i>Lit.</i> , land source.	An alleged mythical ancestor twenty generations before Wākea; also called Huli-honua (PK:390).
Kunuiakea (M)	<i>Kū-nui-ā-kea</i> PK: <i>Lit.</i> , Kū [of] wide expanse.	The head of all the Kū gods, a "national god." <i>Heiau</i> were erected to him in times of crisis, especially war. He was an unseen god living in the highest heavens. His visible symbols were Kū'ka-'ili-moku, Kū-ho'one'e-nu'u, Kū-ke-'olo'ewa, and Kū-ka-lani-ehu (PK:391). Ku-nui-akea was represented in the <i>heiau</i> by a block of 'ōhi'a wood freshly cut under strict ritual ceremonies. A human sacrifice was offered as payment for the tree both at the spot where it was cut down and at the posthole where the image was set up. (HM:26).
Kupaaikē (M)	<i>Kūpā-'ai-ke'e</i> PK: <i>Lit.</i> , adze eating crookedness.	A god of canoe makers worshiped as the inventor of the adze. In one story he was banished with other gods by Pele for trying to save Lohi'au from death by fire (HM:176-177; PK:391). Ku-palala-ke, or Kupa-ai-kee, the reversible ax, used by Hawaiians in hollowing the canoe (MA:133). Worshiped by those who went up into the mountains to hew out canoes: Ku-palala-ke (MA:82).
Kupepeiaoloa (M)	<i>Kū-pepeiao-loa</i> HM: <i>Lit.</i> , big eared Kū.	Worshiped by those who went up into the mountains to hew out canoes (MA:82). As god of the forest and of rain Ku may be invoked as: Ku-pepeiao-loa (HM:14-15). Ku-pepeiao-loa and -poko ...gods of the seat braces by which the canoe is carried (HM:16).
Kupepeiaopoko (M)	<i>Kū-pepeiao-poko</i> HM: <i>Lit.</i> , small eared Kū.	Worshiped by those who went up into the mountains to hew out canoes (MA:82). As god of the forest and of rain Ku may be invoked as: Ku-pepeiao-poko. Ku-pepeiao-loa and -poko ...gods of the seat braces by which the canoe is carried (HM:14-16).
Kupulupulu (M)	<i>Kū-pulupulu</i> PK: <i>Lit.</i> , Kū [of] moist	A god of forest and canoe makers; also called Kū-pulu-pulu-i-ka-nahele (Kū kindling in the forest) (PK:391). The chief god of canoe makers, who had his residence in the wildwoods (NB:38).

NAME	LEXICOLOGY	FUNCTION
	greenery.	Called the “chip maker” (HM:16).
Kupukupu (M)	<i>Kupu-kupu</i> PE: <i>Lit.</i> , to surge forth.	A benevolent deity who healed diseases and who caused vegetation to flourish (NB:144).
Kuwaā (M)	<i>Kū-wa‘a</i> PE: <i>Lit.</i> , Kū [of the] canoe.	A god who presided at the hauling of a canoe-log (NB:140).
Kuwahailo (M)	<i>Kū-waha-ilo</i> PK: <i>Lit.</i> , maggot-mouthed Kū [he ate a man infested with maggots].	A sorcery god, man-eater, introducer of human sacrifice, and a conductor of souls; husband of Haumea and father of Pele. Male chiefs worshiped him as a god of sorcery under the name of Kuwaha-ilo-o-ka-puni (HM:29-30). He had many forms; human, <i>mo‘o</i> , caterpillar, blood stream, and others. Some believe he ate the souls of men, while Ka-‘ōnohi-o-ka-lā conducted them to him (HM:110). Other names are Milu and Ka-hanu-o-‘awa (the breath of sourness) (PK:391). He appears in several Hawaiian legends (‘Au-kele-nui-a-iku, Kā‘ana-e-like, and Ha‘ina-kolo, for example) as a god who descends from heaven proceeded by thunder, lightning, and heavy winds. He may appear in various forms and laps up his victims with his thrusting tongue (RC:129).
Laamaomao (F)	<i>La‘a-maomao</i> PK: <i>Lit.</i> , distant sacredness.	A goddess of winds and the mother of Pāka‘a, to whom she gave the calabash containing the bones of her mother; the winds could be controlled by chanting the names of the winds (PK:391).
Laka (F)	<i>Laka</i> PE: <i>Lit.</i> , tame, domesticated, gentle, attracted to.	Laka is the primary deity of the <i>hula kuahu</i> . Laka is the female deity whose <i>kinolau</i> , or body forms, are some of the majestic and fragrant forest plants that are used on the <i>kuahu</i> , or <i>hula</i> altar (KH:123). Laka is the goddess of the <i>hula</i> , <i>maile</i> , ‘ <i>ie‘ie</i> , and other forest plants, often identified with Kapo-‘ula-kīna‘u. A god worshiped by canoe makers; also known as Kū-‘ōhi‘a-Laka (PK:392). Laka, or Kūka‘ōhi‘alaka, is the forest deity of the ‘ <i>ōhi‘a lehua</i> , <i>Metrosideros polymorpha</i> , and its multiple cycles (KH:99). Laka, goddess of the <i>hula</i> , was invoked as the goddess of the <i>maile</i> , which was one of five standard plants used on her altar. ‘ <i>Ie‘ie</i> was one of five plants used on the <i>hula</i> altar. The <i>palai</i> was one of the important plants placed on the <i>hula</i> altar to Laka. <i>Lama</i> wood was used in medicine and placed on <i>hula</i> altars because its name suggested enlightenment. <i>Kupukupu</i> was sometimes added to the <i>hula</i> altar to Laka, for knowledge to <i>kupu</i> (sprout) (wehewehe.org).
Laukaieie (F)	<i>Lau-ka-‘ie-‘ie</i> PE: <i>Lit.</i> , leaf [of the] ‘ <i>ie‘ie</i> vine	The <i>ieie</i> vine is said to be the form in which the goddess Laukaieie was worshiped (HM:99).
Lea (F)	<i>Lea</i> PR: <i>Lit.</i> , pleasing, delightful.	Goddess of canoe makers, wife of Kū-moku-hāli‘i, and sister of Hina-puku-‘ai, who sometimes assumed her form. Both sisters took the form of an ‘ <i>elepaio</i> flycatcher to help canoe makers choose proper logs. She was also called Hina-kū-wa‘a (canoe upright) and Laea (MA:82,133; PK:392). She was supposed to appear in the form of the wood-pecker, ‘ <i>elepaio</i> , whose movements

NAME	LEXICOLOGY	FUNCTION
		when she walked upon the newly felled tree were attentively observed and were ominous of good or ill luck (MA:133).
Lono (M)	<i>Lono</i> PE: <i>Lit.</i> , news, report, tidings, remembrance.	One of the four great gods, the last to come from Kahiki (PK:392). Lono presides particularly over non-irrigated agriculture, because he is the god of rain. Lono is also associated with fertility, birth, medicine, clouds bearing rain, thunder, and noise, the gourd, sweet potato, and <i>kukui</i> (<i>Aleurites moluccana</i>) (VA:14). Lono is associated with the black color of clouds that bring rain (HE:339). He had the form of the pig man, Kama-pua‘a. He was the patron of the annual harvest <i>makahiki</i> festivals, and his image (Lono-makua) was carried on tax-collecting circuits of the main islands (PK:392). Lono is associated with the “winds of Kona” [leeward winds] (HE:220). The twenty-eighth day of the lunar month is consecrated to Lono (MA:153;VA:17). Kane and Lono were the deities most commonly addressed by those who offered prayers for the restoration of any one to health (MA:96). For the <i>mawaewae</i> it was necessary also to have a taro leaf, which was one of a number of “plant forms” of Lono. [Presumably from the taro variety known as <i>Ipu o Lono</i> , Lono’s gourd or cup, or some other variety sacred to Lono]. The <i>mawaewae</i> sacrament called for animal (the ears of the hog), vegetable (the hog-ear shaped taro leaf) and marine (‘ <i>aholehole</i> , a fish whose “snout” [<i>nuku</i>] is shaped like a hog’s snout) “bodies” of Lono (PS:82).
Lonopuha (M)	<i>Lono-pūhā</i> HM: <i>Lit.</i> , Lono [<i>of the</i>] ulcer.	A god of healing (PK:393). Lono-puha (Lono of the ulcer) is said to be the first to practice the art of healing through medicinal herbs in Hawaii, and to found a school upon this system (HM:116). When an <i>alii</i> had recovered from a malady he built a <i>heiau</i> , which was called either a Lono-puha or a Kolea-muku (MA:109).
Mailehaiwale (F)	<i>Maile-ha‘i-wale</i> PE: <i>Lit.</i> , brittle <i>maile</i> .	One of the 4 sweet-scented sisters with human and plant forms. Fragrance had supernatural power and was associated with gods, royalty, and religion, especially for worshipers of Laka, the <i>hula</i> goddess (PK:393). The <i>maile</i> sisters were considered minor goddesses of the <i>hula</i> (wehewehe.org).
Mailekaluhea (F)	<i>Maile-kaluhea</i> PE: <i>Lit.</i> , fragrant <i>maile</i> .	One of the 4 sweet-scented sisters with human and plant forms. Fragrance had supernatural power and was associated with gods, royalty, and religion, especially for worshipers of Laka, the <i>hula</i> goddess (PK:393). The <i>maile</i> sisters were considered minor goddesses of the <i>hula</i> (wehewehe.org).
Mailelailii (F)	<i>Maile-lau-li‘i</i> PE: <i>Lit.</i> , small-leafed <i>maile</i> .	One of the 4 sweet-scented sisters with human and plant forms. Fragrance had supernatural power and was associated with gods, royalty, and religion, especially for worshipers of Laka, the <i>hula</i> goddess (PK:393). The <i>maile</i> sisters were considered minor goddesses of the <i>hula</i> (wehewehe.org).
Mailepakaha (F)	<i>Maile-pākaha</i> PE: <i>Lit.</i> , <i>maile</i> [with blunt ovate leaves].	One of the 4 sweet-scented sisters with human and plant forms. Fragrance had supernatural power and was associated with gods, royalty, and religion, especially for worshipers of Laka, the <i>hula</i> goddess (PK:393). The <i>maile</i> sisters were considered minor goddesses of the <i>hula</i> (wehewehe.org).

NAME	LEXICOLOGY	FUNCTION
Maiola (M)	<i>Ma'i-ola</i> PK: <i>Lit.</i> , cured sickness.	A god of healing who was said to occupy certain trees, the wood of which counteracted the noxious effects of poison from <i>kālai-pāhoa</i> wood (PK:393). Those who practiced medicine prayed to Mai-ola (MA:82). When anyone was seized with an illness a messenger was dispatched to the <i>kahuna</i> who practiced medicine <i>kahuna lapaau</i> , taking with him an offering for Mai-ola, the god of medicine (MA:107).
Makanikeoe (M)	<i>Makani-ke-oe</i> PK: <i>Lit.</i> , wind [of] the trailing whistling.	Wind god Makani-keoe (Makani-kau), one of the many gods of love named in Hawaiian lore, had control over plants and can himself take the form of a tree or cause plants to grow. A branch from his transformation form will serve as a love charm, but only a brave person can secure such an amulet because of the voices and visions which will pursue him (HM:93). A variant name was Kapua'i-'aiā (wicked footprint) (PK:394). Lau-kapalili (trembling leaf) is a variant name for Makani-ke-oe (PK:392).
Mau (F)	<i>Ma'ū</i> NB: <i>Lit.</i> , damp.	Ma'ū, associated with the wet forest, is the sister of Haumea and also wife of Makali'i, a famous navigator whose name is eternalized in the constellations, namely Nā Huihui a Makali'i (KH:86).
Mauliola (F)	<i>Mauli-ola</i> PK: <i>Lit.</i> , breath of life	Mauliola is the goddess of health and long life (KH:86). The call for Mauliola is a common practice with 'awa. One of the requests while in an 'awa ceremony is the consideration of health for the ocean, the land, the sky, the <i>ali'i</i> , and the people (KH:84). Mauliola is also the name of Pele's house, which occupies a section of Kīlauea Caldera (KH:161).
Moemoeaalii (M)	<i>Moemoe-'a'a-li'i</i> KH: the small rootlets [that] lie waiting.	Haumea is coupled with Moemoe'a'ali'i, a little-known male entity whose name reveals his function. Moemoe'a'ali'i represents the offspring that lie waiting to be exposed again. "Moemoe," in this instance, means to lie in wait; "'a'a-li'i" are the small rootlets from which new growth sprouts (KH:5).
Namakaokahai (F)	<i>Nā-maka-o-kaha'i</i> PK: <i>Lit.</i> , the eyes of Kaha'i [a chief found in many places in East Polynesia].	An older sister of Pele (HM:171). Because of a quarrel with Nāmakaokaha'i, Pele migrated with her family to Hawaii. Nā-maka came and also brought the <i>kauna'oa</i> dodder to Mānā, and the <i>pahapaha</i> seaweed <i>lei</i> to Poli-hale, Kaua'i...At Ka-lani-pu'u, Nā-wiliwili, Kauai, she planted the 'awa-papa kava and the rough skinned banana (<i>mai'a 'ili paka-paka</i>). She is the eldest female of the family and is the cause of fault lines in the earth. A weak point in a volcanic eruption is the <i>maka</i> , or source, where the fault is located and the breaking away begins (KH:6).
Opelunuikauhaalilo (M)	<i>'Ōpelu-nui-kau-ha'alilo</i> PK: <i>Lit.</i> , great 'opelu fish placed far away.	A god of thieves and medical practitioners. A son of Pele by Kamapua'a (HM:206-207; PK:395).
Papa (F)	<i>Papa</i> PK: <i>Lit.</i> , flat surface.	Probably the same as Haumea, and like Haumea, considered a symbol of the female principle. Commonly cited as the wife of Wākea (PK:396). The <i>hale o Papa</i> was the place where the women

NAME	LEXICOLOGY	FUNCTION
		chiefs had their services (MA:178). <i>Me-ha'i-kana</i> , the goddess of the breadfruit tree: said to be one with Papa (NB:79).
Pele (F)	<i>Pele</i> PE: <i>Lit.</i> , lava, volcano, eruption.	A volcano goddess. Pele is vulcanism in all its forms. Epithets coupled with her name include Honua-mea (reddish earth), Ka-wahine-'ai-honua (the earth eating woman), Ka-wahine-o-ka-lua (the woman of the pit), and, rarely, Ka-wahine-o-ka-'a'ahu-ke'oke'o (the woman with the white garment)...She appeared at different times as fire, a wrinkled hag, a child, and a beautiful girl (PK:118, 396). The primary form of Pelehonuamea is the red-hot magma (KH:4). Pele is land growth, the production of fresh lava (KH:115). <i>Okaoka</i> , is said to be the flame-body of Pele, or the small stones, <i>ilili</i> , that entered into the composition of her body (NB:115). Her body forms are the volcanic forces-eruptions, earthquakes, magma, and flowing lava steam. She also took the form of an old woman or a beautiful young woman. Terms for various forms of volcanic matter are: <i>pāhoehoe</i> -the smooth unbroken lava; <i>a'ā</i> -the rough rocky lava; <i>'elekū</i> -pumice; <i>one 'ā</i> -cinders; <i>'alā</i> -basalt; <i>lauoho</i> -Pele's hair; <i>waimaka</i> -olivine crystals; <i>pōpōahi</i> -giant lava balls emitted by a shield volcano, usually on the Mauna Loa ridge (NH:162).
Pikoiakaalala (M)	<i>Pikoi-a-ka-'alalā</i> PK: <i>Lit.</i> , Pīkoi son of the crow.	A demigod born at Wai-lua, Kauai, of a crow (<i>'alalā</i>) father, and with rat (<i>'iole</i>) and bat (<i>'ōpe'ape'a</i>) sisters. He sometimes appeared as a rat (PK:396).
Uli (F)	<i>Uli</i> PE: <i>Lit.</i> , dark color	The arch-goddess of sorcery and <i>anaana</i> (praying to death). She has healing power as well as power to kill (NB:146). She was invoked by Hi'iaka in her prayers of resuscitation for Lohi'au (PK:397). Those who practiced sorcery and praying to death or <i>anaana</i> worshipped Kū-koae, Uli and Ka-alae-a-Hina (MA:82). Uli may be described as the judicial spirit, as well as the detective one, fitted therefore to discover the one whose incantations had brought death to the deceased by <i>anaana</i> (MA:103).
Wahineomao (F)	<i>Wahine-'oma'o</i> PS: <i>Lit.</i> , green lady.	The green cloak of jungle of the upland forest (PS:22, 118).
Waka (F)	<i>Waka</i> PE: <i>Lit.</i> , sharp, protruding.	A <i>mo'o</i> guardian in many stories. She had <i>mo'o</i> , human, spider, and eel forms. As a guardian of Lā'ie-i-ka-wai in Pali-uli, she prepared for her a house thatched with feathers (HM:526-529). As guardian of Hina-ke-kā, or equated with her, she floated as a gourd in the sea and was taken to Wākea's canoe (HM:219; PK:398). The female chiefs worshiped as gods Kiha-wahine, Waka, Kala-maimu, Ahimu (Wahimu), and Alimanoano. These deities were reptiles, or <i>mo'o</i> (MA:82-83)
Wakea (M)	<i>Wākea</i> PK: <i>Lit.</i> , expanse.	The ancestor of all Hawaiians; according to Hawaiian tradition, a man rather than a god (HM:294; PK:398). The Sky-that-is-Bright-and-Wide (Wakea), the level Earth (Papa), were primordial Father and Mother (PS:118).

NĀ MO‘OKŪ‘AUHAU A MO‘OLELO O PELEHONUAMEA
The Genealogies & Stories that Relate to Pelehonuamea

Pelehonuamea, the goddess of volcanism, continues to have an immense influence on the landscape of Puna and culture of Hawai‘i today. Included in this section are a variety of *mo‘okū‘auhau* (genealogies) and *mo‘olelo* (traditional stories) that introduce the complexity of this deity, as well as the presence of her family in the district of Puna. McGregor explains, “Throughout all of the folklore for Puna, Pelehonuamea and her family of deities emerge as the natural primal elements that dominate and shape the lives of the chiefs and people of Puna” (2007:147). Within many *mo‘olelo*, Pele would often test the true nature of others and disguise herself as an elder woman or beautiful young maiden. During these tests, those who were good to her were spared and those who proved otherwise were destroyed. In addition, many of these *mo‘olelo* refer to the creation of specific lava formations and place names within the district of Puna. Presented below are two *mo‘okū‘auhau* of the Pele clan, followed by *mo‘olelo* associated with Puna.

Haumea Lāua ‘O Moemoea‘ali‘i, Haumea and Moemoea‘ali‘i

This *mo‘okū‘auhau* names Haumea as the mother and Moemoea‘ali‘i as the father of the Pele clan. According to Kanahale, “‘*Haumea lāua o Moemoea‘ali‘i*’ reveals the Hawaiian *akua*, or elemental forms, their connection to mother earth, Haumea, and their relationship to their *one hānau*, or birth places, which provide additional cultural innuendos” (2011:7). Kanahale further explains, “Both parents of this *mo‘okū‘auhau* are earthbound, and their offspring are the constructive forms of these volcanic islands. And when land is created, life is born” (2011:5). This genealogy is presented with an English translation by Kanahale (2011:2-3) with additional notes that collected from the Native Hawaiian Ethnographic Study for the Hawai‘i Geothermal Project Proposed for Puna and Southeast Maui (Matsuoka et al. 1966:162-163), and the Hawaiian Dictionary (Elbert & Pukui 1971). The genealogy of Haumea and Moemoea‘ali‘i follows:

<i>Makuahine: Haumea</i> (w)	Mother: Haumea (f)
<i>Makuakāne: Moemoea‘ali‘i</i> (k)	Father: Moemoea‘ali‘i (m)
<i>Nā keiki a lāua, ke one hānau</i>	Their children and place of birth
1. <i>Kamohoali‘i</i> (k)	<i>hānau ma ka manawa mai</i> born from the fontanel of Haumea

* *Lit.*, The royal selected one. His ocean form was the body of a *manō* (shark) and *hilu* fish. He had an earthly form of a *palikū* (standing cliff) which was lifted straight out of the ocean during the seismic shifting of the plates. He also had a human form.

2. *Kānehekili* (k) *hānau ma ka waha*
born from the mouth of Haumea
- * *Lit.*, Thunder Kāne. Kānehekili was in charge of thunder and assumed the body of thunder.
3. *Kauilanuimākēhāikalani* (k) *hānau ma ka maka*
born from the eyes of Haumea
- *Kauilanuimākēhāikalani is the lightning. He also has a *honu* (turtle) form in the ocean.
4. *Kūha‘imoana* (k) *hānau ma ka pepeiao*
born from the ears of Haumea
- **Lit.*, Kū following ocean. He took the form of a manō (shark). He was said to be thirty fathoms long and the husband of Ka‘ahupāhau.
5. *Kānemiloha‘i* (k) *hānau ma ka poho lima ‘ākau*
born from the right palm of Haumea
- *He took the form of a manō (shark).
6. *Leho* (k) *hānau ma ka ‘ōpu‘upu‘u lima*
born from the knuckles of Haumea
7. *Kāneikōkala* (k) *hānau ma ka manamana lima*
born from the fingers of Haumea
8. *Nāmakaokaha‘i* (w) *hānau ma ka umauma*
born from the chest of Haumea
- * *Lit.*, The eyes of Kaha‘i. She had an ocean from. Also probably had a *mo‘o* (dragon lizard) form.
9. *Pelehonuamea* (w) *hānau ma kahi mau e hānau ‘ia ai ke kanaka*
born from the usual place of birth as people
- *The goddess of the volcano. Her body forms are the volcanic forces-eruptions,

earthquakes, magma, flowing lava steam, etc. She also took the form of an old woman or a beautiful young woman. Terms for various forms of volcanic matter are: *pāhoehoe*-the smooth unbroken lava; *a 'ā*-the rough rocky lava; *'elekū*-pumice; *one 'ā*-cinders; *'alā*-basalt; *lauoho*-Pele's hair; *waimaka*-olivine crystals; *pōpōahi*-giant lava balls emitted by a shield volcano, usually on the Mauna Loa ridge.

10. *Kapō 'ulakīna 'u* (w)

hānau ma nā kuli

born from the knees of Haumea

* *Lit.*, Kapo red dotted with dark. She had a dual nature-as a benevolent hula goddess identified with Laka, and as a fierce goddess of sorcery. One of her forms was the *Halapepe* tree, branches of which were placed on hula altars. *Kīna 'u* is a term used for a certain type of *puhi* (eel).

11. *Kapōkohelele* (w)

hānau ma nā 'ōpu 'upu 'u wāwae

born from the ankles of Haumea

*Kapōkohelele saved Pele from being killed by Kamapua'a. Kapōkohelele means that she is able to throw her *kohe* (vagina). She was the one who enticed Kamapua'a away from assaulting Pele by throwing her *kohe* before him and up into the air. When it fell back down to earth it became *Kohelepelepe*, also known as Koko Head Crater on O'ahu.

12. *Hi 'iakakalukalu* (w)

hānau ma nā manamana wāwae

born from the toes of Haumea

*Kalukulu has to do with reforestation.

13. *Hi 'iakakuilei* (w)

hānau ma nā kapua 'i wāwae

Born from the feet of Haumea

*She was also a character that came along with Pele. She was the one that prepared the 'awa. The eldest usually prepares the 'awa.

14. *Hi 'iakaikapoliopole* (w)

hānau ma nā poho lima, ma ke 'ano me

he hua moa ala

born in the palm in the shape of an egg

**Lit.*, Hi‘iaka in the bosom of Pele. She is the *muli* (the youngest). She probably was the most talented of the family. She was able to be *kāula* (a seer). She was a prophet. She had powers in ‘*anā‘anā* (sorcery), not only snatching of life, but bringing life up from the dead. She had to do with the reforestation of lava flows. She was brought from Kahiki or Kapakapakaua or Kapaahu in the form of an egg, and she was cared for when she came up with her family. In Fornander, the mother of Pele is Kaikahinali‘i and the father is Kānehoalani. Kānehoalani, rather than Moemoea‘ali‘i, is more widely known as the father of Pele.

Ka Mo‘okū‘auhau O Kaikahinali‘i Lāua ‘O Kānehoalani, The Genealogy of Kaikahinali‘i and Kānehoalani

The following *mo‘okū‘auhau* of Pelehonuamea names Kaikahinali‘i as the mother and Kānehoalani as the father. This version was published in Kanahale’s book, *Ka Honua Ola* (2011:8-9). Kanahale refers to this genealogy stating, “This genealogy of Kaikahinali‘i and Kānehoalani is the beginning genealogy of the migration to Kanaloa, or Kaho‘olawe island... The purpose of this genealogy is to record the interrelationship of tsunami and volcanic eruption” (2011:11).

<i>Makuahine: Kaikahinali‘i</i> (w)	Mother: Kaikahinali‘i (f)
<i>Makuakāne: Kānehoalani</i> (k)	Father: Kānehoalani (m)
<i>Nā keiki a lāua, ke one hānau</i>	Their children and place of birth
1. <i>Kamohoali‘i</i> (k), <i>hānau ‘ia i Hapakuela</i>	Kamohoali‘i (m), born at Hapakuela
2. <i>Kahuilaokalani</i> (k), <i>hānau ‘ia i Hapakuela</i>	Kahuilaokalani (m) born at Hapakuela
3. <i>Pelehonuamea</i> (w), <i>hānau ‘ia i Hapakuela</i>	Pelehonuamea (f), born at Hapakuela

Ke Awa O Pele, The Canoe Landing of Pele

This *mo'olelo* tells of Pele's journey through the Hawaiian archipelago in search of a suitable home. Pele eventually makes her way to the island of Hawai'i, where she lands at an area within the *ahupua'a* of Koa'e in Puna. This landing place was given the name Ke awa o Pele, or the canoe landing of Pele. Provided below is a comprehensive summary of these events compiled by Kepā Maly (1998:15-16).

When Pele came to the Hawaiian islands from Tahiti Pakapaka-ua, she landed at various places on the islands searching out a suitable home. Pele first sought out a home for her family on *ka moku kā'ili lā* (the island that snatches the sun), which is also called Kamāwaelualani or Kāwili; and known today as Kaua'i, *ka mokupuni kīhāpai ua* (the garden island). On Kaua'i, Pele dug at a few places seeking a home for herself and her family. She dug into the earth at Ka'inapele, Pu'uopāpa'i, and Leleiwi at Pu'ukāpele, but none of the places were suitable.

Pele-Honuamea (Pele of the red earth) then moved to the island of O'ahu-a-Lua, and for a short time she dwelt at 'Aliapa'akai and Kalua'ōlapa. Because Pele was not satisfied on O'ahu, she departed and went to Moloka'i-nui-a-Hina, where she dug a new home at Kauhakō. But there, she struck water. Pele then moved once again, and dwelt at Honokalani, Maui, and she dug a new home for herself at Haleakalā.

It is at this point that some stories differ. Some people say that Pele was killed at Haneo'o and that she left her body at Ka-iwi-o-Pele (The-bones-of-Pele), at a hill near the pond of Haneo'o, between Hāmoa and Ka'uiki. Though another story states that *Pele* was not killed, but that she dwelt with her sister Kapo-kohelele, and that when she left Maui, she built the hill Kaiwiopēle, which is also called Pu'u-a-Pele (Hill-made-by-Pele).

Before Pele-Honuamea departed from Honokalani, Maui, she sent one of her sisters, Hi'iaka-pa'i-kauhale (Hi'iaka-who-thatches-the-house) to find a home for her on the island of Hawai'i. The first place that this Hi'iaka arrived at was Kona, and she dwelt at a cape, which came to be called Hi'iaka-noho-lae (Hi'iaka-who dwells-at-the-point). That is why to this day, the place is still Hi'iaka-noho-lae.

Because of the long delay in Hi'iaka's return, Pele journeyed to **Puna**, near **Pū'ula** (Red-conch-shell), **Koa'e**, and landed at the place called **Keawaopēle**. From **Pū'ula**, Pele dug the hills above **Poho-iki** (Little-depression or Little-hollow) and **Ke-ahi-a-Laka** (The-fire-of-Laka). From there, she moved up to He'eia (To be washed away or to have slipped away) and on to **Ka'auēa**, where she looked upon **Kīlauea** and made her royal home at Moku'āweoweo.

Hi'iaka Befriends Hōpoe

The following *mo'olelo* of Hi'iaka and Hōpoe was published by Ho'oulumāhiehie (2006:47-48) and translated by Puakea Nogelmeier (Ho'oulumāhiehie & Nogelmeier

2006:46). Hi‘iaka being a brave younger sister of Pele, was sent on a journey to Kaua‘i to fetch Pele’s lover, Lohi‘au. During this journey, Hi‘iaka told her traveling companion Wahine‘ōma‘o about her friend Hōpoe and how they first became acquainted. The *mo‘olelo* that Hi‘iaka shares with Wahine‘ōma‘o is given below.

*I kekahi lā ma mua lilo wale aku nei, iho malihini maila au i kai o **Kea‘au** i wahi lau limu, wahi hua ‘ōpihi, wahi he‘e pali nō ho‘i, me ona wahi hua ‘ina. A ‘oi ai au e kū ana i ka makalae, e nana ana i wahi no‘u e iho ai a hō‘ea i ka pa‘alā o lalo, aia ho‘i, pi‘i mai ana nei kaikamahine ‘ōpiopio mai lalo mai me kāna ‘eke lau hala, ua hele nō ho‘i a piha i ka ‘ōpihi kō‘ele, ka he‘e pali, ka limu, a me ka ‘ina.*

*Hō‘ea maila kēlā ma ko‘u wahi e kū ana, a pane maila ‘o ia ia‘u, “Kā! Maka malihini.” ‘Ae akula nō ho‘i au, me ko‘u ‘ōlelo ‘ana aku iā ia, “‘Ae, he malihini au mai kēlā kuahiwi mai, a i hō‘ea maila i kai nei lā i ka ‘ōla‘o wahi limu, wahi hā‘uke‘uke, kahi hua ‘ōpihi nō ho‘i ke loa‘a a‘e, a he ola maoli ho‘i ke loa‘a ‘o nā wahi he‘e pali. He nohona makapehu i‘a ‘ole ko ko a uka a mākou e noho mai nei.” Ia‘u i pane aku ai pēlā, ‘o ko ia ala ‘ōlelo maila nō ho‘i ia ika hua o ke
ola,
“Inā pēlā, ‘eā, eia ka i‘a, ua loa‘a. Nāu nō ho‘i kahi.” A ‘o ko‘u ‘ae akula nō ho‘i ia i kā iala ‘ōlelo o ke ola.*

*A laila, nīnau akula au iā ia i kona inoa, ha‘i maila nō ho‘i ‘o ia ia‘u, ‘o **Hōpoe**, ma muli o ka ‘ike mau o nā kānaka iā ia i ka hele mau i nā lā a pau i ke kui lei lehua i **Hōpoe**, ‘oi ai na‘e ‘o kona inoa maoli i hea ‘ia ai ‘o ia e kona mau mākuā, ‘o **Nānāhuki**, a pēlā ihola ke ‘ano o ko māua hale kipa ‘ana (Ho‘oulumāhiechie 2006:47-48).*

One day long ago, I visited the shore of **Kea‘au** to get some seaweed, ‘opihi limpets, perhaps some small octopus, and eggs of ‘ina urchins. While I was standing on a cape of land looking for a place to descend to the smooth rock flats below, this young girl was climbing up with her woven lauhala bag filled with dark-fleshed ‘opihi, small octopus, seaweed, and urchins.

She got to where I was standing and said, “Ah! An unfamiliar face.” I acknowledged it, saying “Yes, I am a stranger from that mountain, and came here to the shore to pick seaweed, sea urchins, and limpets if I find them, and would really feel lucky if I happened upon some of the small octopus. We uplanders get so hungry for seafood it makes the eyes bulge.” When I said this to her, she responded with these words of salvation: “If that is the case, here is your seafood. You have found it. Some can be for you and some for me.” And I agreed to her offer of sustenance.

Then I asked her name, and she told me **Hōpoe**, because people always saw her going daily to string garlands of lehua at **Hōpoe**, whereas her real name, given by her parents, is **Nānāhuki**, and that is how we made our acquaintance. (Ho‘oulumāhiechie & Nogelmeier 2006:46)

Pōhaku-o-Hanalei and Pōhaku-o-Lēkia

Pōhaku-o-Hanalei and Pōhaku-o-Lēkia are *pōhaku* (stones) that reside within the *ahupua'a* of Kapoho in Puna. These *pōhaku* are situated on either side of the lake called Wai a Pele, also known as Green Lake today (Pukui; Elbert; Mo'okini 1974:221). There are a few *mo'olelo* that refer to these *pōhaku* in Puna. One *mo'olelo* tells of Lēkia as a male stone and Hanalei, a female stone, who were a pair of twins that whispered during a thunderstorm, thus breaking the *kapu* (restriction) and turned into stone. In the *mo'olelo* given below, Pōhaku-o-Hanalei and Pōhaku-o-Lēkia travel to Hawai'i where they fall in love with one another and make Puna their home.

I ka hele 'ana mai o Pele a me kona 'ohana mai Kahiki mai, 'o ka Pōhakuohanalei, Pōhakuolēkia, Pōhakuokua, Pōhakuomālei, Pōhakuoka'a, Pōhakuokāne, Pōhakuoloa, a me Pōhakuolono kekahi i hele pū mai me lākou i nā moku o Hawai'i nei.

Noho 'o Pōhakuohanalei i Kaua'i, a 'o Pōhakuolēkia i Kapoho, Puna, a 'o Pōhakuokua a me ka Pōhakuolono i Ka'ū, Hawai'i. 'O Pōhakuoloa i 'Ōla'a. Hawai'i, a ma hope mai 'o ia i hele hou mai ai i ka mokupuni 'o O'ahu. A 'o ka Pōhakuomālei ho'i, i Makapu'u, O'ahu. 'O ka Pōhakuoka'a, he pōhaku kaka'a ia ma nā wahi āna e makemake ai. No laila, ua hiki 'ole ke hō'ike akāka 'ia kona wahi noho pa'a. A i Kona i noho ai ka Pōhakuokāne. 'O kēia mo'olelo, no ka Pōhakuohanalei a me ka Pōhakuolēkia.

I ka hele 'ana o Pele a noho pa'a i nā kuahiwi o Hawai'i, hū a'ela kona aloha iā Pōhakuohanalei e noho ana ma Kaua'i; no laila, ki'i aku nei 'o ia iā ia e ho'i a'e ma kona wahi noho ma Hawai'i. Ho'i aku nei ka Pōhakuohanalei a noho pū me Pele a me kona 'ohana i luna o Moku'āweoweo.

I kekahi manawa nō ho'i, hele lākou i Puna i ka 'au'au kai, ka he'e hōlua, a me nā le'ale'a 'ē a'e o ia wā. I nā wahi a lākou e hele ai i nā le'ale'a, 'o ka Pōhakuolēkia kekahi i hele pū me lākou. No ka ho'ohihi o ka Pōhakuolēkia i ka u'i o ka Pōhakuohanalei, noi aku nei 'o ia iā Pele e 'ae mai i ko lāua ho'āo. 'Ike aku nei 'o Pele i ko lāua makemake loa o kekahi i kekahi a hā'awi maila 'o ia i kona 'ae.

I ko lāua ho'āo 'ana, ho'i aku nei lāua i kahi o ka Pōhakuolēkia i wae ai i home no lāua. Eia nō lāua ke kū nei ma kēlā pu'u a hiki i kēia lā. 'O ka mo'olelo o lāua me ke kupua Kālaikini, he mo'olelo ia i kama'āina i ko Puna po'e (Pukui & Green 1995:113).

When Pele and her immediate family came from Tahiti, certain rock *kupua* accompanied her to the islands of Hawai'i, namely Pōhakuohanalei (Rock of Hanalei), Pōhakuolēkia (Rock of Lēkia), Pōhakuokua (Rock of Kua), Pōhakuomālei (Rock of Mālei), Pōhakuoka'a (Rock of Ka'a), Pōhakuokāne (Rock of Kāne), Pōhakuoloa (Rock of Loa), and Pōhakuolono (Rock of Lono). Pōhakuohanalei lived at Hanalei, Kaua'i; Pōhakuolēkia lived in **Kapoho, Puna**; Pōhakuokua and Pōhakuolono both dwelt in Ka'ū, Hawai'i. Pōhakuoloa lived

for a time in ‘**Ōla‘a**, Hawai‘i, but later moved to the island of O‘ahu. Another one of the group who lived in O‘ahu was Pōhakuomālei, at Makapu‘u. Pōhakuoka‘a was a rolling rock, going wherever he willed; therefore, one cannot clearly state where his home was. And Pōhakuokāne made his home in Kona. This story is concerned with Pōhakuohanalei (Rock of Hanalei) and Pōhakuolēkia (Rock of Lēkia).

When Pele came to live permanently in the mountains of Hawai‘i, her heart ached for Pōhakuohanalei, who was still living on Kaua‘i. Pele sent for her to become one of her household at Moku‘āweoweo, and Pōhakuohanalei accepted the invitation.

Sometimes they all went down to **Puna** for bathing in the sea, sledding, and other pastimes of the old days. Pōhakuolēkia always accompanied these pleasure parties. He was carried away with the beauty of Pōhakuohanalei and asked Pele if he might win her as his wife. Pele, seeing how fond they were of each other, consented.

After the marriage, the couple returned to the place, which Pōhakuolēkia had chosen for their home. There they stand on the hill to this day. The story about them and the *kupua* Kālaikini is well known to all the old inhabitants of **Puna** district. (Pukui & Green 1995:21)

The Story of Kālaikini

Kālaikini is a *kupua* (demigod, one who possesses magic powers) from the island of Manokalanipō, also known as Kaua‘i. He traveled throughout the Hawaiian archipelago in search of contenders to test his strength and power. It was in the *ahupua‘a* of Kapoho in Puna, that Kālaikini met his match with Pōhaku-o-Lēkia. The following *mo‘olelo* tells of their encounter and the formation of the blowhole in Kupahua, Puna called Ke Puhi a Kalaikini.

This is a short story about the doings of Kalaikini on the east side of the district of **Puna** called *Paia ‘ala i ka Hala* (The-Wall-of-Scented-Pandanus).

Kalaikini was a *kupua* who came in guise of a man from the land of the sunrise and sunset to contend with all the *kupua* of all kinds to be found in Hawaii in ancient times.

He came from Ma-no-ka-lani-po, Kauai, to the sea-coasts of green-ridged Hawaii. On his travels he formed the blow-holes which still exist.

On his journey, he came to **Kapoho, Puna**, to the spot later owned by Mr. R. A. Lyman and family, where the son, Henry J. Lyman, now lives.

Here he stood and cast his eyes over the landscape and discovered an opponent standing on the extreme edge of a precipice. “A-ha!” he exclaimed, “there is indeed a *kupua* in this land who is Kalaikini’s enemy; another day we will have a wrestling match.”

Kalaikini returned to a friend's house with great joy. That night he slept and in the morning ate until his appetite was appeased. Shortly after, he approached the spot where his enemy had firmly planted himself.

On the chain of hills surrounding **Kapoho** there are two *pōhaku 'ano kupua* (magic rocks) perched on the brink of the precipice. The one on the left hand is called Pohakuolekia, and it was this sorcerer whom Kalaikini intended to overcome. On the right stands the sorceress PohakuoHanalei. This was his wife.

When Kalaikini was ready to fight with his adversary, he pulled up the wrist-band of his garment and began to wallow in the dust around the place where his rival was standing.

A beholder at that time would have seen an exceedingly mighty whirlwind which blew the dust high in the air so that it stood in the form of a column.

Thus he persevered in energetic digging. *'O i 'eli! 'O i 'eli!* (Oh how he dug!) until the sun reached the hour of its triumph at midday, twelve o'clock noon, and his enemy was nearly undermined and thrown down. By this time, Kalaikini was consumed with hunger, and he returned to the house and wrestled with his appetite until he had conquered it.

In the meantime, the woman, Pohaku-o-Hanalei, turned and looked at her companion, her husband, even Pohaku-o-lekia, who was in wretched shape, staggering with weakness from the contest with the *kupua*, Kalaikini. Love overflowed her heart for her husband planted there on the edge of the quiet peaceful height. She was filled with sorrow and, strive as she would to hide her emotion, still the tears fell for her beloved. No longer able to restrain her grief, she uttered a cry of council, - "*E Pohakuolekia e! 'Oni ia! 'Oni ia! 'Oni ia a pa 'a loa!*" (O Pohaku-o-lekia! bestir yourself! twist about! twist till you hold fast!)

When the man heard his wife's love-cry, he made one more effort to exert his magical powers. He moved, he squirmed, he twisted! He went deep down into the depths! down fast! down to the unshakable – stamped down into the earth's foundations! Just as his wife told him to move, to make himself fast, so truly the nail was driven home, to be forever unchanged from that time to this and until the end of the world.

After Kalaikini had finished his noon meal, he returned with exultation to the spot where his enemy stood and began again to dig with all his might and to throw the dust in every direction.

The more Kalaikini exerted his strength, so much the more firmly did the Rock work itself down into the crevices of the earth, until Kalaikini's breath was quite exhausted and he gave up the battle, leaving the Rock in proud possession.

After this energetic *kupua* had been balked in conflict with Pohaku-o-lekia, he left that place and went to **Kupahua**. There he lifted up his eyes and looked all about the land but saw no other *kupua*, therefore he erected a monument of remembrance that should never be forgotten, namely, the *puhi kai* (blow-hole) which is to be found at **Kupahua, Puna**, and which still proclaims his name –

“*Ke Puhi a Kalaikini*” (The blow-hole of Kalaikini). (Beckwith & Roberts 1922:11-15)

Pelehonuamea and Kamapua‘a

This *mo‘olelo* refers to the interaction between Pelehonuamea and Kamapua‘a that resulted in the division of land on Hawai‘i Island. Elbert and Pukui describe Kamapua‘a as, “The pig demigod whose rooting’s created valleys and springs... He exchanged ribald taunts with Pele and then called on his plant forms – *olomea*, *hala* (pandanus), *‘uha-loa*, *‘āma‘uma‘u* (ferns) - to block her advancing fires, which they did. He finally mated with Pele, taking for himself Hilo, Hāmākua, and Kohala, and allotting Ka‘ū, Puna, and Kona to Pele” (1971:386). A brief summary of the interactions between Pele and Kamapua‘a is given below.

Kamapua‘a goes to the crater of **Halema‘uma‘u** and courts the Goddess in form of a handsome man. Her sisters attract her attention to him. Not at all deceived, Pelehonuamea refuses him with insults, calling him “a pig and the son of a pig.” His love songs change to taunts, and the two engage in a contest of invective. He attempts to approach her, but she sends her flames over him. Each deity summons its own God. Pelehonuamea’s brothers encompass Kamapua‘a “above and below” and would have smothered him had not the lovemaking God of Kamapua‘a lured them away with a beautiful woman. Kamapua‘a threatens to put out the fires of the pit with deluges of water, but Pelehonuamea’s uncles and brothers and the fire tender Lonomakua keep them burning. The reigning chiefess of Makahanaloa sends fog and rain to support her brother against the fire Goddess. Hogs run all over the place. The pit fills with water. The lovemaking God sees that if Pelehonuamea is destroyed Kamapua‘a will be the ultimate loser. The fires are all out; only the fire sticks remain. These the God decides to save. Pelehonuamea yields, and Kamapua‘a has his way with her. They divide the districts between them, Pelehonuamea taking **Puna**, Ka‘ū, and Kona (districts that are periodically overrun with lava flows) and Kamapua‘a ruling Kohala, Hāmākua, and Hilo (the windward districts, always moist with rain) (McGregor 2007:148).

Kamakau (1991:68-69) also shares his knowledge of Kamapua‘a:

When Kamapua‘a lived with (*noho ana*) Pele, he became an ancestor for those of Hawaii. Because their child brought forth (*hanau*) real ancestors (*kupuna maoli*), Pele and Kamapua‘a are called *kumupa‘a*. Their child was ‘Opelunuikauha‘alilo; this was the child born from Pele who became an ancestor of chiefs and people, and his descendants therefore call Pele their *kumupa‘a* because he was born from her body. She became an *‘aumakua* and a *kumupa‘a* for the descendants born from her body.

Ke One Lau‘ena A Kāne, The Great Sands of Kāne

The following *mo‘olelo* tells of an encounter between Pelehonuamea, Wakakeakaikawai, and Puna‘aikoā‘e that resulted in the vast transformation of Ke-one-lau‘ena-a-Kāne in Puna. According to McGregor, “Traditional *mo‘olelo* describe Ka‘ū and Puna as

beautiful lands without lava beds. It was said that there was only earthen soil from one end to the other. The *mo'olelo* reveal the existence of a very long sandy stretch called Keonelauenaakāne ('Kāne's great sand stretch') in the district of Puna. The lava covered the earth and sand and transformed Puna into a land of lava rock" (2007:147). Presented below is a brief summary of the *mo'olelo* associated with Ke-one-lau'ena-a-Kāne.

The mo'ō, Wakakeakaikawai and Puna'aikoa'e were destroyed by Pelehonuamea of the eternal fires. According to this legend, the fight between these mo'ō and Pelehonuamea began in Punalu'u in Ka'ū, continued in **Puna**, and ended in Waiākea in Hilo. Through the course of the battle, a long stretch of sand extending from Waiākea, Hilo, to **Pānau** in **Puna**, called Keonelauenaakāne, was covered with lava. Because Waka ran through **Puna**, with Pelehonuamea in pursuit, most of the land in **Puna** became covered with rough and smooth lava and remains so to this day. The famous stretch of sand disappeared. Only traces of it can be seen in small pockets, scattered here and there from Waiākea to **Puna** (McGregor 2007:147-148).

Pelehonuamea and Kumukahi

There are many *mo'olelo* that refer to the name Kumukahi. This name translates to "the first beginning" and was a name given to the easternmost cape of the Hawaiian archipelago. Kumukahi is located within the *ahupua'a* of Kula in Puna. This is an area of the rising sun that is associated with many deities who manifest themselves through this element. Kumukahi is also a name given to several individuals who once frequented the Puna district. According to Pukui the place Kumukahi was "named for a migratory hero from Kahiki who stopped here and who is represented by a red stone. Two of his wives, also in the form of stones, manipulated the seasons by pushing the sun back and forth between them. One of the wives names was Ha'eha'e. Sun worshipers brought their sick to be healed here. Another Kumu-kahi, the favorite younger brother of Kama-lālā-walu, lived here or near here" (Pukui; Elbert; Mookini 1974:124). Beckwith (1976:119) refers to Kumukahi as a relative of Pele who came from Kahiki with his brother Palamoā and sister Kahikinaakalā. Fornander refers to the younger brother of Mo'ikeha named Kumukahi who lived with his younger brother Ha'eha'e at Kumukahi in Puna (1919:323). The *mo'olelo* presented below involves an event that took place between Pele and a chief named Kumukahi.

According to the legends, Pele was very quickly angered. Her passions were as turbulent as the lake of fire in her crater home. Her love burned, but her anger devoured. She was not safe.

Kumu-kahi was a chief who pleased Pele. According to the legends he was tall, well built, and handsome, and a great lover of the ancient games. Apparently he had known Pele only as a beautiful young chiefess; for one day, when he was playing with the people, an old woman with fiery eyes came to him demanding a share in the sports. He ridiculed her. She was very persistent. He treated her with contempt. In a moment her anger flashed out in a great fountain of volcanic fire. She chased the chief to the sea, caught him on the beach, heaped up a great mound of broken lava over him, and poured her lava flood around him and beyond him far out into the ocean.

Thus the traditions say Cape **Kumu-kahi**, the southeast point of the island of Hawaii, was formed. (Westervelt 1999:27-28)

Pelehonuamea and Papalauahi

The *mo'olelo* of Pele and Papalauahi was collected from Westervelt's book, *Hawaiian Legends of Volcanoes* (1999:29-30). Papalauahi was a chief of Puna who angered Pele during a *hōlua* (sled) race. Consequently, Pele decided to break forth in her fiery *kinolau* (body form) of lava and destroy her opponent. The movement of Pele during this time, not only destroyed the chief, but also altered the landscape of Puna. Papalauahi is a name that often reoccurs in various *mo'olelo* and *mele* of Puna. The place in Puna called Papalauahi is described as a boundary point made up of an extensive *pāhoehoe* field within the *ahupua'a* of Keahialaka (BCT:123). A translation of the name Papa-lau-ahi is "the fire leaf smothered out", or it could also refer to a flat surface due to the destruction by lava (Pukui & Elbert 1986). Presented below is the *mo'olelo* of Pele and the chief of Puna named Papalauahi.

Papa-lau-ahi (The-fire-leaf-smothered-out) was a chief who at one time ruled the district of **Puna**. He excelled in the sports of the people. It was his great delight to gather all the families together and have feasts and games. He challenged the neighboring chiefs to personal contests of many kinds and almost always was the victor.

One day the chiefs were sporting on the hillsides around a plain where a multitude of people could see and applaud. Pele heard a great noise of shouting and clapping hands and desired to see the sport. In the form of a beautiful woman she suddenly appeared on the crest of one of the hills down which **Papa-lau-ahi** had been coasting. Borrowing a sled from one of the chiefs she prepared to race with him. He was the more skillful and soon proved to her that she was beaten. Then followed taunts and angry words and the sudden absolute loss of all self-control on the part of Pele. She stamped on the ground and floods of lava broke out, destroying many of the chiefs as they fled in every direction.

The watching people, overcome with wonder and fear, were turned into a multitude of pillars of lava, never changing, never moving through all the ages.

Papa-lau-ahi fled from his antagonist, but she rode on her fiery surf waves, urging them on faster and faster until she swept him up in the flames of fire, destroying him and all his possessions. (Westervelt 1999:29-30)

Pelehonuamea and Keli'ikuku

In the nineteenth century, an *ali'i* of Kona by the name of Kanuha shared this *mo'olelo* with a French explorer named Jules Remy. Kanuha believed that the events associated with the *mo'olelo* of Keli'ikuku and Kahawali may have taken place during the 1600's (McGregor 2007:149). Keli'ikuku was an *ali'i* of Puna who often boasted about the remarkable beauty of his land. Due to his continuous bragging, Pele devoured his lands and transformed Puna into lava rock.

Another chief was one who was called in Hawaiian legends, Ke-lii-kuku (The-Puna-chief-who-boasted). He was proud of **Puna**, celebrated as it was in song and legend.

*Beautiful Puna!
Clear and beautiful,
Like a mat spread out.
Shining like sunshine
Edged by the forest of Malio.*

Ke-lii-kuku visited the island of Oahu. He always boasted that nothing could be compared with **Puna** and its sweet-scented trees and vines.

He met a prophet of Pele, Kane-a-ka-lau, whose home was on the island Kauai. The prophet asked Ke-lii-kuku about his homeland. The chief was glad of an opportunity to boast. According to the “Tales of a Venerable Savage” the chief said: “I am Ke-lii-kuku of **Puna**. My country is charming. Abundance is found there. Rich sandy plains are there, where everything grows wonderfully.”

The prophet ridiculed him, saying: “Return to your beautiful country. You will find it desolate. Pele has made it a heap of ruins. The trees have descended from the mountains to the sea. The ohia and puhala are on the shore. The houses of your people are burned. Your land is unproductive. You have no people. You cannot live in your country any more.”

The chief was angry and yet was frightened, so he told the prophet that he would go back to his own land and see if that word were true or false. If false, he would return and kill the prophet for speaking in contempt of his beautiful land. Swiftly the oarsmen and the mat sails took the chief back to his island. As he came around the eastern side of Hawaii he landed and climbed to the highest point from which he could have a glimpse of his loved **Puna**. There in the distance it lay under heavy clouds of smoke covering all the land. When the winds lifted the clouds, rolling them away, he saw that all his fertile plain was black with lava, still burning and pouring out constantly volumes of dense smoke. The remnants of forests were also covered with clouds of smoke through which darted the flashing flames, which climbed to the tops of the tallest trees.

Pele had heard the boasting chief and had shown that no land around her pit of fire was secure against her will.

Ke-lii-kuku caught a long vine, hurled it over a tree, and hung himself. (Westervelt 1999:33-34)

Pelehonumea and Kahawali

Kahawali was an *ali'i* who lived within the district of Puna. McGregor refers to Kahawali and writes, “The handsome young chief Kahawali lived near Kapoho in Puna district of Hawai‘i during the days of the chief Kahoukapu. He had a wife and two children named Paupoulu and Ka‘ohe. His mother lived at Kūki‘i, and he had a sister,

Ko‘ae who lived at Kula. His father and another sister named Kānewahinekeaho lived on O‘ahu. Kahawali was an expert in the hula dance and in riding the hōlua. At the time of the Makahiki festival, when the hula pupils gathered for a public appearance, a sled race was arranged with his friend Ahua. Pele in guise of an old woman also offered to compete with Kahawali and he laughed at her impertinence. Angry at the chief’s rebuff, Pelehonuamea pursed him down the hill in her fire form” (2007:150). There are place names in Puna such as Pu‘u o Kahawali, Ka hōlua o Kahawali, ‘Ālo‘i, Kūki‘i, and Ka‘ohe whose names may have ties to this *mo‘olelo* (Pukui; Elbert; Mookini 1974:11,65). The *mo‘olelo* of Pelehonuamea and Kahawali is as follows:

For a long, long time the Hawaiians have had a proverb “Never abuse an old woman; she might be Pele.”

This saying was applied to several legends, but it belonged especially to the story of her punishment of Kahawali. Kahawali was a chief born and brought up on the island Kaua‘i. This island was one of the first in which volcanic fires were extinct. It became “The Garden Island.” It was the most luxuriant in vegetation. Its hillsides were covered with grass, which afforded the very best facilities for sliding down hill.

He‘enalu meant “surf-riding,” *He‘ehōlua* meant “sled-riding,” or sliding down grassy hillsides.

...Kahawali excelled all the Kaua‘i chiefs in this sport, so he determined to test his skill on the other islands. He had heard of a beautiful young chiefess on the distant island Hawai‘i who was a wonderful *hōlua* rider. His first great contest should be with Pele. He prepared for a long journey, and a stay of many months or even years. Some authorities have placed the time of this visit to Hawai‘i as about the year 1350.

Kahawali filled his canoes with choice sleds, mats, cloaks, calabashes, spears, in fact, all the property needed for use during the visit he had in mind. He took his wife, Kanakawahine, his two children, his sister Koai, his younger brother, and Ahua, one of the chiefs who was his *aikāne* (intimate friend), and also his necessary retainers and their baggage, and among the most cherished of all, his favorite pig, **Aloi-puaa**. This pig was so important that its name has been made prominent in all the Kahawali legends.

They journeyed from island to island. Evidently his father, Olonohailaau, and others of the family came as far as the island O‘ahu and there remained.

Kahawali passed on to Hawaii and landed at **Kapoho** in the district of **Puna**. Apparently the chiefs of this part of the island made Kahawali welcome, for he built houses for himself and his retainers and settled down as if he belonged to the country.

The visitors from Kaua‘i entered heartily into the sports of the people and after a time climbed some lava hills and began *hōlua* races. These hills were composed of lava, which easily turned into rich soil when subdued by alternate rain and sunshine. Grass and ferns soon clothed them with abundant verdure. *Hōlua*

courses were laid out, and the chiefs had splendid sport. Crowds came to watch and applaud. Musicians, dancers, wrestlers, and boxers added to the interest.

Kahawali and **Ahua** were frequently racing with each other. After each race there were dancing and games among the people. One day while racing Kahawali stuck his spear, which was peculiarly broad and long, into the ground at the end of the racecourse, then climbed the hill, which bore the name **Ka-hale-o-ka-mahina** (The-house-of-the-moon).

...A woman of ordinary appearance came to the hilltop as Kahawali and Ahua prepared for a race. She said: "I wish to ride. Let me take your *hōlua*." The chief replied: "What does an old woman like you want with a *hōlua*? You do not belong to my family, that I should let you take mine." Then she turned to Ahua and asked for his *hōlua*. He kindly gave it to her. Together the chief and the woman dashed to the brow of the hill, threw themselves on their *hōlua* and went headlong down the steep course. The woman soon lost her balance. The *hōlua* rolled over and hurled some distance down the hill. She challenged the chief to another start, and when they were on the hilltop asked him for his *papa-hōlua*. She knew that a high chief's property was very sacred and could not be used by those without rank.

Kahawali thought this was a common native and roughly refused her request, saying: "Are you my wife [*i.e.*, my equal in rank], that you should have my *hōlua*?" Then he ran swiftly, started his *hōlua*, and sped toward the bottom of the hill.

Anger flashed in the face of the woman, for she had been spurned and deserted. Her eyes were like red-hot coals of fire. She stamped on the ground. The hill opened beneath her and a flood of lava burst forth and began to pour down into the valley, following and devastating the *hōlua* course, and spreading out over the whole plain.

Assuming her supernatural form as the goddess of fire, Pele rode down the hill on her own *papa-hōlua* on the foremost wave of the river of fire. She was no longer the common native, but was the beautiful young chiefess in her fire-body, eyes flaming and her hair floating back in clouds of smoke. There she stood leaning forward to catch her antagonist, and urging her fire-waves to the swiftest possible action. Explosions of bursting lava resounded like thunder all around her. Kahawali leaped from his *hōlua* as it came to the foot of the hill, threw off his *kīhei* (cloak), caught his spear, and calling Ahua to follow, ran toward the sea.

The valley quickly filled with lava, the people were speedily swallowed up. Kahawali rushed past his home. Ellis says: "He saw his mother who lived at **Ku-kii**, saluted her by touching noses, and said, "Aloha 'ino 'oe eia iho nei paha 'oe e make ai, ke ai manei Pele" (Compassion rest on you. Close here perhaps is your death. Pele comes devouring).

"Then he met his wife. The fire-torrent was near at hand. She said: "Stay with me here, and let us die together." He said: "No, I go! I go!"

So he left his wife and his children. Then he met his pet hog, **Aloi-puaa**, and

stopped for a moment to salute it by rubbing noses. The hog was caught by Pele in a few moments and changed into a great black stone in the heart of the channel and left, as the centre of the river of fire flowed on to destroy the two fleeting chiefs. Rocks scattered along the banks of this old channel are pointed out as individuals and the remnants of houses destroyed by Pele.

The chiefs came to a deep chasm in the earth. They could not leap over it. Kahawali crossed on his spear and pulled his friend over after him. On the beach he found a canoe left by his younger brother who had just landed and hastened inland to try and save his family. Kahawali and Ahua leaped into the boat and pushed out into the ocean.

Pele soon stood on the beach hurling red-hot rocks at him, which the natives say can still be seen lying on the bottom of the sea. Thus did Kahawali learn that he must not abuse an old woman, for she might be Pele. (Westervelt 1999:37-43)

Beckwith also shares her knowledge pertaining to the landscape of Puna associated with the outcome of this *hōlua* race:

Lava rocks are said to mark the fate of members of Kahawali's family and of his favorite pig. The famous tree-molds (**Papa-lau-ahi**) above **Kapoho** are said to be a group of hula pupils caught in the trail of Pele's wrath. (1976:190)

Pelehonuamea and Kealohalani

The following *mo'olelo* refers to a chief named Kealohalani who was chased by Pele and turned into stone. Nimmo states, "He may be seen to this day, a red stone formation in the shape of a man lying in the water just below the sand hill" (2011:36). This sand hill is located in Puna and is named Honolulu. In addition, a *pōhaku* of Puna that is associated with the following *mo'olelo* was also named Honolulu. Provided below is a summary of Pele and Kealohalani, followed by additional accounts of the sand hill and *pōhaku* named Honolulu (Farias et al. 2011:140).

A **Puna** chief named Kealohalani angers Pele by courting one of her sisters. Pele chases him and, as he dives into the ocean, his helmet falls off onto a sand hill. Pele changes man and helmet into stone. Kealohalani can be seen below the sand hill as the red stone formation of a man lying in the water.

The sand hill became known as **Honolulu**, because the chief **Honolulu**, one of Kealohalani's retainers, composed the chant of this story. Later he settled in O'ahu.

The helmet stone, also called the **Honolulu** stone or the bell stone for its shape, was moved first to **Kalapana** and then to **Olaa**.

A Calabash of Poi

In the following *mo'olelo*, Pele tests the hospitality of two families. Later, these families are met with different fortunes that stem from their treatment towards Pele.

One of the disguises which Pele, the goddess of fire, was fond of assuming was that of an aged hag. In fact, it was hardly a disguise at all, for Pele was as old as the hills themselves; besides her quick temper and natural jealousy had furrowed her face with deep, hard lines, which a bitter disposition imprints upon a face, quite irrespective of its age. On this day Pele was intent upon a secret mission, and, taking a gnarled branch of the *koa*-tree for a cane, she trudged at a rather brisk pace down the mountainside. Only on approaching two Hawaiian houses of varying pretensions did she slacken her speed and finally pause at the outer palisade of the first.

It was a sizable house, or *hale*, as Hawaiian houses go, perhaps fifty feet long with its side thatched with *ti*-leaves—a sign of rank. Its only window, a small aperture about a foot square, looked out on a carefully planted *taro* patch, while rows of tasseled cocconut palms and fruit-laden banana plants made a pretty background to the setting.

Pele paused for a moment to make a mental summary of the growing crop, and then grasping her cane, hobbled to the threshold.

“Aloha,” she said to the small group of people sitting within the doorway.

“Aloha,” was the reply in a not over-cordial tone of voice.

Pele waited—apparently there was to be no invitation to enter or to refresh herself.

“I have walked many miles,” she said finally, assuming a small and feeble voice. “I am very hungry. Perhaps you have as much as a calabash of *poi* for me.”

“We are very sorry, but we have no *poi*,” said the Hawaiian chief, for such was the master of the house. “Besides our evening meal is *pau*.”

“Then, perhaps, a small piece of salted fish?”

“No, nor fish,” was the short rejoinder.

“Then, at least, some ripe ‘*ōhelo* berries for I am parched with thirst?”

“Our berries are all green, as you can see for yourself, providing your eyes are not too dimmed by age.”

Pele’s eyes were far from dim! She suppressed with an effort the flashes of fire that ordinarily blazed in their black depths at a moment’s provocation and, bowing low, made her way in silence to the gate. Passing a few steps further down the hard road, she entered a smaller and less thrifty garden and paused on the threshold of a small hut. The work of the day as well as the evening meal was over, and the family of bronzed-skinned boys and girls played about the man and woman who sat watching in rapt attention the last golden rays of the sun sinking in a riot of color behind the gentle slopes of Mauna Loa.

“Ah, I see your evening meal is past,” sighed Pele. “I am sorry for I am both tired

and hungry, and had hoped for a little refreshment after a day's walk down the steep mountain."

"Neither fish nor 'awa have we," promptly said the poor fisherman, "but to such as we have you are most welcome."

Almost before he had concluded these few words, his wife had risen, motioned Pele to a place on the mat and set before her a large calabash of *poi*.

Pele did not wait for a further invitation but fell to eating with much relish. Dipping her forefinger in the calabash, she raised it dripping with *poi*, waved her finger dexterously in the air wrapping the mucilaginous *poi* about it, and placed it in her mouth. She seemed to finish the entire contents in no time, and, looking up, remarked:

"I am still hungry. Would it be too much to ask for another calabash?"

Again the woman arose and placed before her a second calabash of *poi*, not perhaps as large as the first but filled to the brim.

Again Pele emptied the calabash with great relish. Wishing to test the extent of their patience and generosity, she sighed as she finished the last mouthful, calling attention to the empty calabash in her lap.

This time a third calabash - smaller than the second—but quite full, was placed before her.

Pele finished half of the third calabash, arose heavily to her feet, and, pausing before the chief, she uttered these words:

"When your neighbor plants *taro*, it shall wither upon its stem. His bananas shall hang as green fingers upon the stalk, and the coconuts shall fall upon his favorite pig. When you *taro* plant at night, you may pull it in the morning. Your cane shall mature over night and your bananas ripen in one day's sunshine. You may have as many crops as there are days in the year!"

Saying these words, Pele trudged out of the gate and was seen to disappear toward Halemaumau in a cloud of flame.

When the astonished fisherman passed beyond the threshold of his hut on the following morning, yellow bananas hung on the new plants, the full grown *taro* stood ready to be pulled, and the cane-cuttings reached to the eaves of his house. Looking across at his rich and powerful neighbor, he saw that, indeed, the curse of Pele had already descended upon him. In place of the rich man's prosperous acres stood the sun-parched remnants of but yesterday's proud crop.

"There, children!" said Alec, the old half-breed guide, "Whether you'se believe in the 'ole lady Pele or not, don't you ever forget to be nice to the 'ole folks. It just might be Pele. You'se can't always tell!" (Thorpe 1924:93-97)

NĀ MO‘OLELO O PUNA

The word *mo‘olelo* refers to the succession of talk, to stories, tales, myths and legends. *Mo‘olelo* are traditional sources of knowledge that can be utilized to learn about many aspects of Hawaiian culture. *Mo‘olelo* offer a direct link to experience Hawai‘i through a timeless bridge of cultural insights that have guided Hawaiians for many generations. Pukui explains the importance of *mo‘olelo* and writes, “Storytelling served as a principal source of entertainment while simultaneously providing instruction in the many interwoven aspects of life – ancestry, history, religion, human relations, crafts, and the natural world” (Pukui & Green 1995:xii). Traditionally, *mo‘olelo* were perpetuated through various forms of oral repetition. Before Hawaiian became a written language in the 1820’s, stories and legends were passed down from generation to generation through *mele* (songs), *hula* (dances), *kū‘auhau* (genealogies), *ka‘ao* (legends), or *mo‘olelo* (traditional stories) (Kalākaua et al. 1990:ii).

Today, through written form and English translation, *mo‘olelo* are sources of wisdom for a much larger audience. Included below are *mo‘olelo* of *akua* (gods), *kupua* (supernatural deities), *ali‘i* (chiefs), and *kānaka* (Hawaiian people) that relate to the district of Puna on Hawai‘i Island. Due to the limited amount of *mo‘olelo* that directly reference the *ahupua‘a* of Waiakahiula and Ka‘ohe, other *mo‘olelo* associated with Puna are included to bring awareness to the cultural history of this district.

Pā‘ao Arrives in Puna

Pā‘ao is the name of a priest that sailed to Hawai‘i from a distant land and built the first *luakini* (temple with human sacrifice) in Puna (Kamakau 1991:97-101). As Pā‘ao established himself in Hawai‘i, he introduced new customs that influenced Hawaiian culture in many ways. Kepelino refers to the changes that occurred in Hawai‘i after Pā‘ao’s arrival and writes, “The land was revolutionized and all the old kahunas were put to death during Pao’s time” (Beckwith 1976:370). According to Beckwith, “Tradition ascribes to Pao, the introduction of human sacrifice into the temple ritual, the walled heiau, and the red feather girdle as a sign of rank... Other institutions ascribed to him are the pulo‘ulo‘u tapu sign, the prostrating tapu (tapu moe or –o), and the feather god Kaili; some would call Pao rather than La‘a-mai-kahiki the introducer of image worship” (1976:371). Most notably, Pā‘ao is accredited with bringing the chief Pili from his homeland, establishing him as the *ali‘i nui* of Hawai‘i, and instituting his line of priesthood that lasted until the time of Kamehameha I (Beckwith 1976:371-372). The following excerpts provide an overview of the arrival of Pā‘ao, the establishment of a new chiefly line in Hawai‘i, and the building of Waha‘ula *heiau* in the *ahupua‘a* of Pūlama in Puna.

Pā‘ao was a priest; Makuaka‘ūmana, a prophet; and Pili, or Pilika‘aiea, a chief. He is the Pili right after La‘au in the Hema branch of the ‘Ulu genealogy.

The reason that Pā‘ao left his birthplace was because of a quarrel between himself and his older brother Lonopele, who was a *kahuna* and man of *mana*.

...When Pā'ao *mā* were out on the ocean, Lonopele sent many troubles-strong Kona winds, the 'Āpuku, the Kīkīao, the Lele-ku'i-lua, the Ho'oilolele-aka, the winds Haunone and the Moa'e-kū that breaks down houses. Pā'ao, however, had made ready for the dangers of the open ocean and had secured the canoes with mat covers. When the winds blew strongest, the *aku* fish crowded around and the 'ōpelu rippled the surface of the sea; the winds quieted down and the sea became calm.

That is the origin of the *kapu* of the *aku* and the 'ōpelu in the religious services of Pā'ao and his descendants down to the time of Hewahewa, the *kahuna* of Kamehameha.

Puna on Hawai'i Island was first reached by Pā'ao, and here in **Puna** he built his first *heiau* for his god Aha'ula and named it Aha'ula [Waha'ula]. It was a *luakini*. From **Puna**, Pao went on to land in Kohala, at Pu'uepa.

It is thought that Pao came to Hawaii in the time of the ali'i La'au because Pili ruled as *mō'i* after La'au. You will see Pili there in the line of succession, the *mo'okū'auhau*, of Hanala'a-nui. It is said that Hawai'i Island was without a chief, and so a chief was brought from Kahiki; this is according to the chiefly genealogies, Hawai'i Island had been without a chief for a long time, and the chiefs of Hawai'i were *ali'i maka'āinana* or just commoners, *maka'āinana*, during this time. (Kamakau 1991:97-100)

Cordy (2000:160) shares his knowledge of Pā'ao:

The early Hawaiian accounts of Malo, unspecified Lahainaluna students, and Kamakau emphasize that Pā'ao, a priest, fetched Pili to be ruler. They mention the *aku*/'opelu schools of fish on the voyage, which were said to have led to part of the *kapu* system of contact-era culture – a *kapu* associated with the strict religious cycle of Ku and Lono.

The following account refers to the Hawai'i chief named Kapāwa and the events that may have led to Pā'ao and Pili Kaaiea gaining control in Hawai'i.

What the particular crimes of *Kapawa* may have been which lost him the sovereignty of Hawaii, tradition does not mention. Whatever they were, if any, it is presumable that they were imputed to him by those who succeeded him; and it is equally probable that *Pao*, that southern chief and high priest who constituted his own family as a hereditary priesthood on Hawaii, had more or less to do with this downfall of *Kapawa*. On the expulsion or death of *Kapawa*, *Pao* sent to "Kahiki" for someone of the southern chiefs to come and take possession of the vacant sovereignty. *Lonokaeho* was first applied to, but refused; and then *Pili Kaaiea* was advised to go, and he came to Hawaii, and by the assistance of *Pao* was established as the territorial sovereign of that island, *Pao* remaining his high priest. And from *Pili* the ruling Hawaiian chiefs down to the *Kamehameha* family, claimed their descent (Fornander & Grant 1996:22).

...*Pao* is said to have made his first landfall in the district of **Puna**, Hawaii, where he landed and built a *Heiau* (temple) for his god and called it *Wahaula*.

The ruins of this Heiau still remain a short distance south of the village of **Kahawalea** in **Puna**, but it is almost impossible now to say what portions of it date back to the time of *Paa*, seeing that it was almost entirely rebuilt by *Imaikalani*, a noted chief over **Puna** and Kau districts tempore *Keawenui-a-umi*...and was again repaired or improved in the time of *Kalaniopuu*, who died in 1782. It was the very last Heiau that was destroyed after the tabus were abolished by *Kamehameha II* in 1820. It was built quadrangular or parallelogram form which characterized all the Heiau built under and after the religious regime introduced by *Paa*, and in its enclosure was a sacred grove, said to have contained one or more specimens of every tree growing on the Hawaiian group. (Fornander & Grant 1996:35-36)

According to Fornander and Thrum (1919:590-595), the first coconuts in Hawai‘i were planted in close proximity to Waha‘ula *heiau*. Provided below is a summary of Fornander’s account as written by Beckwith (1976:432).

It is Aukele-nui-aiku and his brother (Kane-) **Apua** who bring the first coconut to Hawaii. The first time **Apua** and his brother come from Kahiki they do not bring slips of food plants because they expect to find them growing here. Being almost famished, they return to Kahiki after plantings, and appear off Kaula-(u)ka’s place in Kahiki with a load of pretended food in the shape of a coral rock. Their not landing is laid to the rough surf. Of each plant they are shown they declare that it “germinates, sprouts, bears leaves and fruits in Hawaii,” and hold up a piece of coral resembling the shape of the plant. The owners of the food plants cast all away as worthless and the voyagers gather them into the canoes and carry them back to plant in Hawaii. The first coconuts in Hawaii are planted at **Kahaualea** (where stands the heiau of Waha-ula) and at **Kalapana** in **Puna** district, Hawaii.”

The following account refers to a chiefly visit to Waha‘ula Heiau during the time of chiefess Keakealaniwahine. John Papa ‘Ī‘Ī (1959:160) writes:

Later, when she became ruler, she was in charge of all the heiau on Hawaii. She offered human sacrifices in the six *luakini* heiaus of the six districts of Hawaii, which were Hikiau in Kona, Punaluu in Kau, Wahaula in **Puna**, Kanoa in Hilo, Honuaula of Waipio in Honokaa, and Mookini in Kohala.

Kahele and The Heiau of Waha‘ula

The following *mo‘olelo* is associated with the first *luakini* built by Pā‘ao when he came to Hawai‘i. This *heiau* was constructed in the *ahupua‘a* of Pūlama in Puna and given the name Waha‘ula. Westervelt refers to the *kapu* associated with Waha‘ula stating, “Wahaula was a tabu temple of the very highest rank. The native chants said, ‘*No keia heiau oia ke kapu*’ (Concerning this heiau is the burning tabu). “*Enaena*” means “burning with a red hot rage.” The heiau was so thoroughly “tabu” or “*kapu*,” that the smoke of its fires falling upon any of the people or even the chiefs was sufficient cause for punishment by death, with the body as a sacrifice to the gods of the temple” (1998:5). The following is a summary of a *mo‘olelo* that involves a chief named Kahele and the *kapu* of Waha‘ula written by Beckwith (1976:346).

The smoke from the altar at Waha-ula is regarded as the shadow cast by the god of the heiau and hence to cross through the smoke is sacrilege. A young chief, forgetful of the tapu, allows himself to be touched by the smoke and is accordingly seized and sacrificed and his bones thrown into the bone pit. His spirit comes in dream to his father, who is the high chief of Ka-u, and the father sets out at once to recover his son's bones. After first encountering and killing the olohe who slays travelers along the sea road out of **Kalapana**, he arrives at the heiau. As the spirits dance at night, he recognizes and seizes the spirit of his son, who points out to him where the bones are to be found. Some say that the father restores his son to life, others that he merely gives the bones a proper burial.

Below is a longer version of Kahele and the *heiau* of Waha'ula that was published by Westervelt (1998:7-13).

Many ages ago a young chief whom we shall know by the name Kahele determined to take an especial journey around the island visiting all the noted and sacred places and becoming acquainted with the alii, or chiefs, of the other districts.

He passed from place to place, taking part with the chiefs who entertained him sometimes in the use of the papa-hee, or surf-board, riding the white-capped surf as it majestically swept shoreward - sometimes spending night after night in the innumerable gambling contests which passed under the name pili waiwai - and sometimes riding the narrow sled, or holua, with which Hawaiian chiefs raced down the steep grassed lanes. Then again, with a deep sense of the solemnity of sacred things, he visited the most noted of the heiaus and made contributions to the offerings before the gods. Thus the days passed, and the slow journey was very pleasant to Kahele.

In time he came to **Puna**, the district in which was located the temple Wahaula.

But alas! In the midst of the many stories of the past which he had heard, and the many pleasures he had enjoyed while on his journey, Kahele forgot the peticular power of the tabu of the smoke of Wahaula. The fierce winds of the south were blowing and changing from point to point. The young man saw the sacred grove in the edge of which the temple walls could be discerned. Thin wreaths of smoke were tossed here and there from the temple fires.

Kahele hastened toward the temple. The Mu was watching his coming and joyfully marking him as a victim. The altars of the gods were desolate, and if but a particle of smoke fell upon the young man no one could keep him from the hands of the executioner.

The perlious moment came. The warm breath of one of the fires touched the young chief's cheek. Soon a blow from the club of the Mu laid him senseless on the rough stones of the outer court of the temple. The smoke of the wrath of the gods had fallen upon him, and it was well that he should lie as a sacrifice upon their altars.

Soon the body with the life still in it was thrown across the sacrificial stone. Sharp knives made from the strong wood of the bamboo let his life-blood flow down the depressions across the face of the stone. Quickly the body was dismembered and offered as a sacrifice.

For some reason the priests, after the flesh had decayed, set apart the bones for some special purpose. The legends imply that the bones were to be treated dishonorably. It may have been that the bones were folded together and known as unihipili, bones, folded and laid away for purposes of incantation. Such bundles of bones were put through a process of prayers and charms until at last it was thought a new spirit was created which dwelt in that bundle and gave the possessor a peticular power in deeds of witchcraft.

The spirit of Kahele rebelled against this disposition of all that remained of his body. He wanted to be back in his native district, that he might enjoy the pleasures of the Under-world with his own chosen companions. Restlessly the spirit haunted the dark corners of the temple, watching the priests as they handled his bones.

Helplessly the ghost fumed and fretted against its conditon. It did all that a disembodied spirit could do to attract the attention of the priests.

At last the spirit fled by night from this place of torment to the home which he had so joyfully left a short time before.

Kahele's father was a high chief of Kau. Surrounded by retainers, he passed his days in quietness and peace waiting for the return of his son.

One night a strange dream came to him. He heard a voice calling from the mysterious confines of the spirit-land. As he listened, a spirit form stood by his side. The ghost was that of his son Kahele.

By means of the dream the ghost revealed to the father that he had been put to death and that his bones were in great danger of dishonorable treatment.

The father awoke bunumbed with fear, realizing that his son was calling upon him for immediate help. At once he left his people and journeyed from place to place secretly, not knowing where or when Kahele had died, but fully sure that the spirit of his vision was that of his son. It was not difficult to trace the young man. He had left his footprints openly all along the way. There was nothing of shame or dishonor – and the father's heart filled with pride as he hastened on.

From time to time, however, he heard the spirit voice calling him to save the bones of the body of his dead son. At last he felt that his journey was nearly done. He had followed the footsteps of Kahele almost entirely around the island, and had come to **Puna** – the last district before his own land of Kau would welcome his return.

The spirit voice could be heard now in the dream which nightly came to him. Warnings and directions were frequently given.

Then the chief came to the lava fields of Wahaula and lay down to rest. The ghost came to him again in a dream, telling him that great personal danger was near at hand. The chief was a very strong man, excelling in athletic and brave deeds, but in obedience to the spirit voice he rose early in the morning, secured oily nuts from a kukui-tree, beat out the oil, and anointed himself thoroughly.

Walking along carelessly as if to avoid suspicion, he drew near to the lands of the temple Wahaula. Soon a man came out to meet him. This man was an Olohe, a beardless man belonging to a lawless robber clan which infested the district, possibly assisting the man-hunters of the temple in securing victims for the temple altars. This Olohe was very strong and self confident, and thought he would have but little difficulty in destroying this stranger who journeyed alone through **Puna**.

Almost all day the battle raged between the two men. Back and forth they forced each other over the lava beds. The chief's well-oiled body was very difficult for the Olohe to grasp. Bruised and bleeding from repeated falls on the rough lava, both of the combatants were becoming very weary. Then the chief made a new attack, forcing the Olohe into a narrow place from which there was no escape, and at last seizing him, breaking his bones, and then killing him.

As the shadows of the night rested over the temple and its sacred grave the chief crept closer to the dreaded tabu walls. Concealing himself he waited for the ghost to reveal to him the best plan for action. The ghost came, but was compelled to bid the father wait patiently for a fit time when the secret place in which the bones were hidden could be safely visited.

For several days and nights the chief hid himself near the temple. He secretly uttered the prayers and incantations needed to secure the protection of his family gods.

One night the darkness was very great, and the priests and watchmen of the temple felt sure that no one would attempt to enter the sacred precincts. Deep sleep rested upon all the temple-dwellers.

Then the ghost of Kahele hastened to the place where the father was sleeping and aroused him for the dangerous task before him.

As the father arose he saw this ghost outlined in the darkness, beckoning him to follow. Step by step he felt his way cautiously over the rough path and along the temple walls until he saw the ghost standing near a great rock pointing at a part of the wall.

The father seized a stone which seemed to be the one most directly in the line of the ghost's pointing. To his surprise it was removed very easily from the wall. Back of it was a hollow place in which lay a bundle of folded bones.

The ghost urged the chief to take these bones and depart quickly.

The father obeyed, and followed the spirit guide until safely away from the temple of the burning wrath of the gods. He carried the bones to Kau and placed them in his own secret family burial cave.

The ghost of Wahaula went down to the spirit world in great joy. Death had come. The life of the young chief had been taken for temple service and yet there had at last been nothing dishonorable connected with the destruction of the body and the passing away of the spirit.

Kūka‘ōhi‘alaka

The following *mo‘olelo* involves Kūka‘ōhi‘alaka who according to Malo “is one of the gods worshiped by those who go up into the forest to hew out canoes or timber for building” (1951:82). Beckwith further explains, “The Ku gods of the forest were worshiped not by the chiefs but by those whose professions took them into the forest or who went there to gather wild food in time of scarcity” (1976:15). In this *mo‘olelo*, Kūka‘ōhi‘alaka and his family come from Kahiki and settle in the district of Puna. Due to events caused by *pī* (stinginess) and *lili* (jealously), death takes place and brings forth the transformation of different *kinolau* (body forms).

‘O Kūka‘ōhi‘aakalaka ke ke kaikunāne a ‘o Kauakuahine ke kaikuahine. Mai Kahiki mai lāua a noho i Hawai‘i, ‘o Kauakuahine i ‘Ōla‘a me kāna kāne, a ‘o Kūka‘ōhi‘aakalaka i Kea‘au me kāna wahine. ‘A‘ohe keiki a Kūka‘ōhi‘aakalaka, a ‘o ke kaikuahine ho‘i, he mau keiki nō. He mahi ‘ai ka hana a ke kaikuahine i ‘Ōla‘a a he lawai‘a kā ke kaikunāne i Kea‘au.

I kēlā a me kēia manawa, ua iho ‘o Kauakuahine me ka ‘ai i kahakai na ke kaikunāne a ‘o ka i‘a kāna e ho‘iho‘i mai ai na kona ‘ohana. Ua kauoha ‘o Kūka‘ōhi‘aakalaka i kāna wahine e hā‘awi a nui i ka i‘a malo‘o i kona kaikuahine i nā wā a pau āna e iho mai ai me ka ‘ai. Ua nānā ihola ka wahine i ka i‘a malo‘o a minamina, a ho‘iho‘i aku nei ma lalo o nā moena e hūnā ai.

I ka iho ‘ana mai o Kauakuahine me ka ‘ai, ua hala ke kaikunāne i ka lawai‘a. ‘Ōlelo aku nei ke kaiko‘eke. “‘A‘ohe i‘a a māua lā. E nānā a‘e nō ‘oe i kauhale nei, ua nele. ‘O ka pa‘akai wale nō kahi mea i loa‘a.” Hele nō ‘o Kauakuahine a loa‘a ka līpahapaha, ‘o ko iala ho‘i nō ia. I ka iho hou ‘ana mai o Kauakuahine, ‘o ia ana nō, ‘o ka ho‘i nō me ka nele. I ahona nō i kahi līpahapaha.

No ka pī mau o ke kaiko‘eke, ua lilo ia i mea ho‘okaumaha iā Kauakuahine. I kekahi ho‘i ‘ana āna me ka līpahapaha, ua mana‘o ‘o ia he mea makehewa ka ho‘oluhi ‘ana iā ia iho e lawe mau aku i ka ‘ai i Kea‘au a ‘o ka līpahapaha wale nō ka i‘a e ho‘iho‘i aku ai na kāna kāne ho‘omanawanui a me nā keiki a lāua.

I ke kokoke ‘ana aku ona i ka hale o lākou ua holo maila ke kāne a me nā keiki e ‘ike iā ia. Ua pa‘ipa‘i pākahi akula ‘o ia iā lākou a lilo lākou i mau ‘iole. ‘O ka ‘iole māhuahua, ka makua kāne ia; ‘o nā ‘iole makali‘i, ‘o nā keiki nō ia. No Kauakuahine, ua lilo ‘o ia i pūnāwai me ka ua kilihune e helele‘i ana ma laila.

I ke kaikunāne e lawai‘a ana, ua hiki akula ka hō‘ike a nā akua iā ia i ke pī o ka wahine i ka i‘a a i ka lilo o ke kaikuahine i wai a ‘o ka ‘ohana i pua ‘iole. Ua

lilo kēia i mea kaumaha i kona no 'ono' o a ho'i aku nei i kauhale a nīnau aku i ka wahine, "Ua hā'awi anei 'oe i i'a na nā pōki'i o kāua?" " 'Ae, ke hā'awi mau nei nō au i ka i'a."

'O ko Kūka'ōhi'aakalaka lālau akula nō ia i nā moena o ka hale o lāua a hāpai a'ela i luna. 'Ike a'ela 'o ia i nā i'a malo'o, ua ho'onoho papa 'ia ma lalo a'e o ka moena, a e hoholo a'e ana nā pu'u. Ua piha loa 'o ia i ka inaina, a 'ī aku nei i ka wahine, "He keu 'oe a ka wahine loko 'ino. Pō'ino ku'u pōki'i iā 'oe." A me kēia mau hua'ōlelo ua pepehi 'ia kēlā wahine a make loa.

Ua pi'i akula 'o ia i 'Ōla'a i kahi a ke kaikuahine a 'ike aku nei 'o ia i ka hoholo mai o nā 'iole i kauhale a kulu iho nei kona waimaka aloha no ke kaiko'eke a me nā keiki. Hele pololei aku nei 'o ia a ka pūnāwai a iho nei ke po'o i lalo i loko o ka wai, a 'o ke kino, ua lilo a'ela i kumu 'ōhi'a.

He 'elua wale nō pua o kēia kumu 'ōhi'a i nā wā a pau, a ke haki ka lālā, kahe mai ke koko mai kona kino mai (Pukui & Green 1995:111-112).

Kūka'ōhi'aakalaka, Kū the 'Ōhi'a of the Forest, was the brother, and Kauakuahine, the Sister Rain, was the sister. They came from Kahiki and lived in Hawai'i, the sister in 'Ōla'a with her husband, and the brother at Kea'au with his wife. The brother had no children, the sister had a flock of them. Her husband was a farmer in 'Ōla'a, the brother a fisherman in Kea'au.

The sister often brought vegetables to the shore for her brother and returned with fish for her family. The brother told his wife to give his sister an abundance of dried fish when she came with the vegetables. The wife hated to give up the fish and laid it under the sleeping mats. While the husband was out fishing, the sister came with vegetables and the wife said, "We have no fish, as you can see for yourself; all we have is salt." The sister went and gathered coarse seaweed to take the place of fish. Again she came with vegetables and went back without anything. She was lucky to get the seaweed. This constant stinginess of her sister-in-law vexed the sister. It seemed to her useless to burden herself with carrying vegetables and to return with only seaweed for her patient husband and children. One day when she came close to the house and her husband and children ran out to meet her, she gave them each a slap and changed them into rats, the husband into a large rat and the children into young rats. She herself became a spring of water where fine rain fell.

While the brother was out fishing, the gods showed him how stingy his wife had been and how his sister had become a spring and her family had changed into rats. He was much distressed and returned home and asked his wife, "Did you give fish to our dear sister?"

"Yes, I always give her fish."

He saw the dried fish laid flat beneath the sleeping mats and what a heap of them there were. He was very angry with his wife. "What a cruel woman you are! You have brought misfortune upon our little sister!" And with many words of reproach, he beat his wife to death.

He ascended to his sister's place in 'Ōla'a and saw the rats scampering about where the house had stood, and he shed tears of love for his brother-in-law and the children. He went straight to the spring, plunged in headlong, and was changed into an 'ōhi'a tree.

This tree bears only two blossoms to this day, and when a branch is broken off, blood flows from the body of the tree. (Pukui & Green 1995:19-20)

Kahalaomāpuana

Elbert and Pukui describe Kahalaomāpuana as, "The youngest and most important of the Maile sisters *Lit.*, the pandanus of wafted fragrance" (1971:385). The following *mo'olelo* involves a woman's journey to visit Kahalaomāpuana in the uplands of Puna.

Sometimes an 'aumakua would reveal through a medium, or in a dream, a desired relationship which was referred to as *pili mai ka po mai*, or a spirit relationship coming from the night. When such a revelation was received it became as binding as a blood tie and involved the same rights and obligations.

A woman in Puna was once in great distress over the failing health of her youngest child. In a dream she was told by a man to go to Ola'a to her cousin Kahalaomāpuana and there she would receive help. She knew of no such person and asked, "Where is her house?" He answered, "Go on until you come to a house where a plover circles and screams. There your cousin lives." She awoke and went, in obedience to the instruction.

In the meantime, the other woman dreamt that she was told to arise and prepare for her cousin's arrival. She did as she was told and waited. Suddenly a plover circled the outside of her house and screamed. It was not the season for plovers and so she exclaimed, "So it is you!" (One of her 'aumakua had the form of a plover.) Just then she saw a stranger on horseback pause at her gate and hurried out she saw a stranger on horseback pause at her gate and hurried out to the gate saying, "I guess you are the guest that I am expecting!" "Are you Kahalaomāpuana?" asked the visitor. The other woman was surprised at this, for the name was never used except by her nearest relatives, but she replied, "Yes, I am she. Come in."

All the help needed by the Puna woman was given her. Thus began a close relationship, established by a Puna 'aumakua who was related to both. Whenever the Puna woman went to Ola'a, she always took fish or whatever she could get at the sea and when she went home she took with her the gifts that her relative *mai ka po mai* had grown or made. (Handy & Pukui 1998:120)

Ka U'i Keamalu, The Beauty Keamalu

The following *mo'olelo* involves a young man's journey to win the heart of a beautiful maiden named Keamalu. Keamalu lived in Paliuli, which is described by Pukui as "a mythical paradise, sometimes identified with one of the twelve islands of Kāne but in Hawaiian romance is placed on the island of Hawai'i, in the wooded uplands of 'Ōla'a

between Puna and Hilo” (1995:33). Below is a *mo‘olelo* that relates to Keamalu within the district of Puna.

Keamalu, or Clear Shade, lived in **Paliuli**, that wonderful land where Lā‘ieikawai dwelt. She was brought up as carefully as Lā‘ieikawai. Birds guarded her and fed her with *lama*, *pi‘oi*, and *māmaki* berries, and with the honey of *lehua* blossoms. She did not eat ordinary food; she was brought up on the food of birds.

A spring in the mountains of ‘**Ōla‘a** is called **Pūnāwai o Keamalu**, Spring of Clear Shade, and there Keamalu went to bathe. One day as she sat by the spring, a young man appeared to her and asked her to become his wife. She refused, for she did not want to marry, and when he insisted, the birds came and took the girl away on their wings. The young man returned to **Puna**, to his sweetheart Kalehua‘ula, the Red Lehua Blossom. While his body remained in **Puna** with that handsome woman, his thoughts were in the uplands of ‘**Ōla‘a**. Again and again he visited the uplands, finding no rest for his passion. Not finding Keamalu, he went back to Kalehua‘ula. Keamalu remained hidden in the house for fear of meeting the young man.

The parents of Kalehua‘ula heard how he was running after Keamalu, and they asked him teasingly, “Is the girl really so beautiful?”

“Yes, she is really beautiful,” replied the young man.

“Our daughter is indeed beautifully formed. How can that common girl of the forest be compared to our daughter?” Now it was true that Kalehua‘ula was beautiful, but her eyes were sullen.

Keamalu remained hidden until she thought that the young man had forgotten her; then she returned to the spring. But she was seized by the youth and released only when the hawk had scratched his face and arms. Then the birds carried her away once more. Keamalu’s guardian *kupua* heard of the slighting remarks made by the parents of Kalehua‘ula, and they determined to have a test of beauty between their child and the beauty of **Puna**. They sent a messenger to her parents, who accepted without hesitation, for their daughter was famous for her beauty all over **Puna**. They did not know that her opponent was the foster child of the *kupua* of **Paliuli**. Thus it was decided; Keamalu was to pick her flowers and place them inside a certain big gourd, and Kalehua‘ula was to place her flowers inside a gourd, and the gourd over which the birds hovered would be the winner.

When the day came for the contest, the **Puna** girl put pandanus blossoms and red *lehua* into her gourd; Keamalu filled hers with *maile* vine and white *lehua*. ‘Iwi hung over Keamalu’s flowers, while only a fly flew over those of Kalehua‘ula. The parents were angry and insisted that the girls themselves should be compared. This was just what the foster parents wanted. Everyone was invited to come on that day and witness the great contest. When Kalehua‘ula appeared, all praised her beauty, but when Keamalu was brought forward by her foster parents, the people saw that she was more lovely than anyone they had ever seen. They struggled for places to see this incomparable beauty. The parents of Kalehua‘ula turned away in shame. The young man’s proposal for Keamalu was accepted, and

the two were married and lived happily in the uplands of **Paliuli**.

As for the spring of Keamalu, it was hidden and is shown to very few people.
(Pukui & Green 1995:32-33)

Nā ‘Ōlohe O ‘Ōla‘a, The Robbers of ‘Ōla‘a

The following *mo‘olelo* tells of a family of *‘ōlohe* (skilled fighters) that lived in a cave within the forest of ‘Ōla‘a. Pukui shares her knowledge pertaining to the *‘ōlohe* and describes them as, “a class of robbers who understood the art of bone-breaking. They pluck out all their hair and oil their bodies for wrestling in order to give no hold to an antagonist.” Pukui also wrote about another *‘ōlohe* family who lived in a cave near the *heiau* of Waha‘ula in Puna. They would often terrorize the community, like those in the following *mo‘olelo* (Pukui & Green 1995:92).

The *‘ōlohe* of **‘Ōla‘a** were a band of robbers who lived in caves in the forest. Travelers from Ka‘ū to **Puna** district, from **Puna** to Hilo, and from Hilo to Ka‘ū were attacked, killed, and their bodies hidden away by these robbers.

This is how they did it. One of them would climb a tree and look toward the sea. If he saw no one, the spy called, “*Kai a malo‘o!* (Tide is out)” If he saw a few people, he called, “*Kai make!* (Low tide)” If the group was ten or more, he called, “*Kai nui!* (High tide)” and if a large company, “*Kai ko‘o!* (Rough sea)” By this means the number of those coming was made known. If the number was few, they were killed on the road; if a larger number, they were invited to the cave to eat and sleep, and large stones suspended above were dropped down on their heads where they were sitting, and thus they were killed. If the call was “*Kai ko‘o!* (Rough sea)” the travelers were allowed to go on their way.

One of the robbers was named Kapua‘euhi. He had two great, husky daughters who were his helpers. They had been taught the art of bone-breaking and wrestling and were just as good as men. They were also clever flatterers and decoys. At length, this robber band killed a certain young man of Ka‘ū. The distressed family consulted a *kahuna*, and he advised them to send young kinsmen to destroy that band of robbers. [Two] kinsmen to the man who was killed went to **‘Ōla‘a**, encountered the daughters of the robber, and began to wrestle with them. One man was almost overcome, but his loincloth loosened, and catching a corner of it in his hand, he wound it around the girl’s neck and strangled her. He then helped his brother put to death the second girl. They hid the girls’ bodies and went to the cave to await the father of the girls whom they had killed. When the old man saw them sitting at the entrance of the cave, he asked, “Where are my daughters?”

“Where indeed! We came by and stopped to rest.”

“Come inside here,” said the robber.

The young men looked up and, seeing the stones suspended, said, “No, thank you, we will sit here.”

The old man suspected that they had killed his daughters, and he sprang upon them and attempted to kill them. There were two of them, and he was a single man and aged, in the end they put him to death.

It is said that the plunder of these robbers is still in the cave of Kapua'euhi, but no one living knows how to move the stones to find the hidden cave. (Pukui & Green 1995:91-92)

Kepaka'ili'ula

The *mo'olelo* of Kepaka'ili'ula was published in the Hawaiian language newspaper, *Ka Hōkū o Hawai'i*, from March 20, 1919 to December 9, 1920. Included below is a summary concerning the upbringing of Kepaka'ili'ula that was organized by Kepā Maly. Following this is an excerpt from *Ka Hōkū o Hawai'i* that involves an uncle of Kepaka'ili'ula and the chiefess Hōpoe in the district of Puna.

This *mo'olelo* is set in the time of early settlement on the island of Hawai'i. It is an account of the birth and feats of Kepaka'ili'ula, who when born, given up for dead because he was born as an *'e'epa* (pre-mature – mysterious formed child). Kepaka'ili'ula's father was Maka-o-Kū, and his mother was Hina-i-ka-malama, both of whom were descended from Kūahailo and Hina the *akua – ali'i* (god-chiefs) who came to Hawai'i from Kahiki and established the highest chiefly bloodlines of Hawai'i. At the time of Kepaka'ili'ula birth, Makaokū and Hina dwelt near Moku-ola (now called Coconut island) and ruled the district of Hilo.

Kepaka'ili'ula's birth was accompanied by numerous displays of natural phenomena including fragmented rainbows that rested upon the ocean, rains that poured upon the land, and rivers that overflowed upon the land. His maternal uncles, Ki'inoho and Ki'ihele, took these signs as omens of Kepaka'ili'ula's supernatural nature. Without knowledge of Makaokū or Hina, Ki'inoho and Ki'ihele rescued Kepaka'ili'ula and raised him while instructing him in all manner of fighting techniques, and in the uses of his supernatural powers. When Kepaka'ili'ula came of age, his uncle Ki'ihele went in search of a suitably beautiful and highly ranked chiefess to whom Kepaka'ili'ula could be married. The journey took him along the *ala loa* (trail) that encircled Hawai'i. Along the way, he met with sacred chiefesses of the island's various districts. The first chiefess met with was Hōpoe, who dwelt on the shore of **Kea'au**. (Maly 1999:16-17)

The following excerpt was published in *Ka Hōkū o Hawai'i* on May 15, 1919 and translated by Kepā Maly (1999:17). This section refers to Ki'ihele and his encounter with Hōpoe.

Haalele iho la o Kiihele i ko lakou wahi, a hele mama aku la ma kai o Puna, ai kona hiki ana aku i Keaau, e noho ana ilaila kekahi wahine ui nona ka inoa o Hopoe. Ku ana keia ma ka ipuka o ka hale o keia wahine alii o Keaau, a pae ana ka leo kahea o Hopoe ia Kiihele, e komo maloko a hoomaha iki, a hoike hoi i ka manao o ka huakai hele o ke kakahiaka nui. "Aole wau e komo iloko o kou hale, oiai he huakai hele imi wahine ka'u na ka'u hanai alii, a oiai no hoi ua

lohe wale ia ae kou ui e Hopoe ka wahine ui o Keaau nei, a mamuli oia wawa wale ia ae hoi o kou ui, nolaila kipa kauhale mai nei wau.”

“A pehea iho la kou manao no ‘u, e lilo anei wau i wahine na ko hanai, a ua ku-like anei hoi kona ui me ko ‘u?” “Auhea mai oe e ka ui o Keaau, he ui nae i kokoke ole aku i ka ui poo ela o kuu hanai alii, a ia no kou ui la e ka alii wahine o Keaau nei i ka wawae o kuu hanai alii. O ke aloha no kou e ke alii wahine o Keaau nei, ae hele no wau ma ka ‘u huaka ‘i imi wahine na kuu hanai alii.”

Mamua o ka hiki ana ia Hopoe ke pane hou mai i kekahi olelo i kēia kanaka ano olelo hooahaaha i kona ui, ua hala aku la keia kanaka me ka mama nui. Hoes aku la oia i Kula, a ma ia wahi e noho ana he mau wahine mahoe, a he mau wahine kaukau alii ui no hoi a no laua na inoa o Waiwelawela me Waiapele...

Ki‘ihele departed from Hilo and traveled swiftly along the shore of **Puna** till he reached the place called **Kea‘au**, where there lived a beautiful woman named Hōpoe. Arriving at the *hale ali‘i* (royal compound) of this chiefess of **Kea‘au**, Ki‘ihele heard Hōpoe calling him to enter her house and rest, and explain why his journey had him traveling so early in the morning. Ki‘ihele told Hōpoe that he could not enter her house, as he was on a journey to seek out a wife for his royal ward. “I have heard of the beauty of Hōpoe, the beautiful woman of **Kea‘au**, thus I have come to visit you.”

Hōpoe then asked, “So what do you think, am I the woman for your ward, and are his features comparable to mine?” Ki‘ihele answered, “Listen to me oh beauty of **Kea‘au**, there is perhaps no beauty comparable to yours, but I must continue my journey to find if there is anyone else for my royal ward.”

Before Hōpoe could answer, Ki‘ihele moved swiftly along the trail and he arrived at **Kula**, where dwelt the chiefess Waiwelawela...

Ki‘ihele traveled the island of Hawai‘i searching for a suitable wife for Kepaka‘ili‘ula. He found the chiefess Mākole‘ā of Kahalu‘u, Kona who later became the wife of Kepaka‘ili‘ula.

Ka-Miki and Kahauale‘a

The *ka‘ao* (legend) of Kamiki was originally published in the Hawaiian language newspaper, *Ka Hōkū o Hawai‘i*, from the years 1914-1917. Kepā Maly translated a few excerpts from this publication and organized them into a summary about Ka-Miki in Puna (1999:21-23).

The *mo‘olelo* is about two supernatural brothers, Ka-Miki (The quick, or adept, one) and Maka‘iole (Rat [squinting eyes]), who travel around the island of Hawai‘i along the ancient *ala loa* and *ala hele* (trails and paths) that encircle the island. During their journey, the brothers Ka-Miki and Maka‘iole competed alongside the trails they traveled, and in famed *kahua* (contest arenas) and royal courts, against *‘ōlohe* (experts skilled in fighting or in other competitions, such as running, fishing, debating, or solving riddles, that were practiced by the ancient Hawaiians). They also challenged priests whose dishonorable conduct offended

the gods of ancient Hawai‘i. Ka-Miki and Maka‘iole were empowered by their ancestress Ka-uluhe-nui-hihi-kolo-i-uka (The great entangled growth of *uluhe* fern which spreads across the uplands), a reincarnate form of the goddess Haumea (the creative force of nature; also called Papa and Hina; who was also a goddess of priests and competitors).

The story is set in about the 1300’s, at the time when Pili-a-Ka‘aiea (Pili) was sovereign chief of all Kona. It was while on this journey that the brothers came to be at **Koa‘e**, where Ka-Miki competed at the royal compound of the chief **Pū‘ula**. Because of his exceptional skills in all manner of fighting, another form of contest was selected between Ka-Miki and **Kahauale‘a** was called to represent **Puna** (December 30, 1915). Excerpts of the account which describe resources of coastal **Kea‘au**, and the upland regions of **Kea‘au** and **‘Ōla‘a** are cited in the following narratives:

...The lands of **Kahauale‘a** were named for **Kahauale‘a**, one of the famous warriors and *‘ōlohe* of **Puna**. As **Kahauale‘a** prepared to enter the *kahua* [contest arena] **Pū‘ula** called out in a chant in which he spoke of **Puna**-

...*Pa‘a ‘ia ka hanohano o Puna i ke kai Kōloa*

E nū mai la i ka ulu hala o Kea‘au

I ka lā puka i Ha‘eha‘e

I ka lae oni o Kūki‘i a me Makanoni

Oni mai o Mauna loa me Kūlilikaua

Nā lae ani makani o Kaniahiku

Huki iluna ka papa lohi o ‘Āpua...

Secured is the glory of Puna
along the sea of Kōloa

The sea that rumbles through
the pandanus grove of Kea‘au
(Puna) the source of the rising
sun at Ha‘eha‘e

(Puna) of the protruding points
of Kūki‘i and Makanoni

Mauna loa appears above with
[the mist of] Kūlilikaua

The points of Kaniahiku wave
in the breeze

Pulled upon the glistening plain
of ‘Āpua...

It was agreed that **Kahauale‘a** and Ka-Miki would compete in three contests; *uma* (hand wrestling), *kūpahu* (pushing one’s opponent from the arena), and *kūkini* (running) contests. In the *kūkini* contest, Ka-Miki and **Kahauale‘a** were required to gather certain famous items to prove that they had actually reached the designated places. These things were: [1] the sacred water of the goddess *Waka-keaka-i-ka-wai* and accurately describe the nature of the spring Keakaikali‘ulā and the forest of Paliuli; [2] a valuable bark-cloth sheet – *kuina kapa ‘Ō‘ūholowai-o-La‘a* for which **Puna** was famed; [3] ten *‘olonā* (*Touchardia latifolia*) leaves of **‘Ōla‘a**; [4] one of **Puna**’s famed *moena makali‘i pua hīnana* (fine mesh mats woven from the pandanus flower sheaths); and [5] to bring back living *‘o‘opu ‘ai lehua* (*Gobidae* fish) of Hi‘ilawe and *‘anae momona* (fat plump rich mullet) which swam in the waters of Pāka‘alana. [January 6, 1916]

At the outset of the competition, **Keahialaka** provided the *kapa*, *olonā* leaves, and *moena*, thus eliminating Ka-Miki’s need to gather those items. The two competitors then participated in the *uma* and *kūpahu* contests and the roar of the

crowd was heard from the shore to the depths of the *waokele*, the upper forests of **Kali‘u** and **Malama**. **Kahauale‘a** was defeated in both of those contests. Then the *kūkini* contest between **Kahauale‘a** and Ka-Miki began. Ka-Miki was carried to Pali-uli [in the uplands of ‘**Ōla‘a** and **Kea‘au**] on ‘*Ōhi‘a-nui-moe-awakea* [one of the body forms of Ka-uluhe]. Thus, he arrived at the spring Keaka-i-ka-li‘ulā which was the dwelling place of Lā‘ieikawai (who came to be called Ka-wahine-i-ka-li‘ulā) and Lā‘ie-lohelohe, the sacred chiefesses and wards of Waka-ke-aka-i-ka-wai and Ka-puka-i-haoa-ka-lā-o-lalo. This was an exceedingly sacred area. Guarded by Waka, it was encircled by rainbows, filled with the songs of ‘*iwi*, and ‘*ō‘ō* birds, and surrounded by all manner of plants. On the lands around the spring were grown the prostrate sugar cane called *Mikioi-o-lehua*, the bananas called *Mānai-‘ula-i-ka-wao*, the taro called *Pāpākole-koa‘e-o-lele-kea*, and the ‘*awa* called *Waimaka-a-ka-manu o Puna*.

Ka-Miki took a leaf of the *pāpākolekoa‘e* taro, and folded it into a cup (‘*a‘apu lā‘alo*) to hold the water...and returned to **Pū‘ula mā**. Ka-Miki presented the water to **Pū‘ula** and described the beauty of Paliuli to those assembled. **Kahauale‘a** had been unable to reach Paliuli and the spring of Keakaikali‘ulā, so instead, he brought the water of Wai-uli, at **Kapu‘euhi**. His deception was detected, because of the dark nature of the water, thus Ka-Miki won this part of the *kūkini* contest... [January 13, 1916]

After gathering the water of Keakaikali‘ulā at Pali-uli, ‘*Ōhi‘a-nui-moe-awakea* lifted Ka-Miki atop Pali-uli where he could look out across all the lands of **Puna**. Then *Ka-‘ohu-kolo-mai-iluna-o-ka-lā‘au* caused a mist to settle upon the forest, stretching from Pali-uli to the shore (of **Kea‘au**) at ‘**Ā‘alāmanu**. The scene was described with the saying –

...Mai uka o Pali-uli a hō‘ea i kai o nā ‘ili‘ili nehe a ‘Ā‘alāmanu i ka wai ko‘olihilihi o Hōpoe, e ho‘olewa ala i Hā‘ena.

(From the uplands of Pali-uli all the way to the sea which nestles the pebbles of ‘**Ā‘alāmanu**, there in the water which props the eyelashes of *Hōpoe* who dances at **Hā‘ena**... [February 3, 1916]

...In the end, Ka-Miki won all the contests, and **Kahauale‘a** surrendered, giving his thanks to Ka-Miki and acknowledging Ka-Miki’s superior skills... [February 10, 1916]

Legend of Halemano

The following *ka‘ao* (legend) involves Halemano (an O‘ahu chief), Hua‘ā (a Puna chief), and Kulukulu‘ā (a Hilo chief). They all desired to win the heart of a chiefess named Kamalālāwalu. Halemano dreamt of this chiefess and sent his sister Laenihi to arrange their encounter (Elbert 1959:250-260). This portion of the *ka‘ao* is given below.

O Wahiawa ka makuakane, o Kukaniloko ka makuahine, o Kaukaalii ka makuahine o Kukaniloko, o Halemano e pili la me Lihue ka aina, i Waianaē. Ma ka noho ana o Wahiawa me kana wahine o Kukaniloko, ua hanau la laua mau keiki eono, eha kane, elua wahine. Eia na inoa o na keiki a laua: Maeaea ka

mua, he kane ia; Kaiaka kona muli iho; Anahulu kona hope iho; Halemano ka pokii loa o lakou; Pulee he wahine ia; Laenihi he wahine akua ia.

O Laenihi ka mua, a o Halemano ka hope, oia ka mea nona keia kaa. I Kaaokahi i hanai ia ai o Halemano a nui, he kanaka maikai o Halemano ma kona kino, aohe puu, aohe kee, pali ke kua, mahina ke alo.

*Ia Halemano e noho ana me kona kupunawahine me kaukaalii, ma Kaau i Waianae, ua loa ia Halemano ka moe uhane ma ia noho ana no Kamalalawalu. Oia ke kaikamahine a Hanakaulua me **Haehae**, no **Kapoho i Puna**, Hawaii. He mau alii na makua, no ia aina, a na laua o Kamalalawalu. He wahine maikai loa ia ke nana aku, a he wahine i oi mamua o ko **Puna** a me ko Hilo, he puupaa, a he kapu loa, aohe kanaka ike ia ia, aohe hoa noho, he kaikuahine wale no kona hoa noho, o **Kumukahi** ka inoa; he mau ilio elua lau, ko laua mau hoa noho.*

*Ia wa e noho ana o Huaa he 'lii no **Puna**, a o Kulukulua no Hilo, o laua a elua, e hookuli ana ia Kamalalawalu, i ka waiwai o **Puna** a me Hilo, me ko laua manao, na laua e wahi ke kapu o Kamalalawalu.*

Ma ka moe mua a Halemano ma ka po akahi ua halawai uhane laua me Kamalalawalu ma Kaau, pela ko laua launa pinepine ana, a aloha o Halemano ia Kamalalawalu. No ke aloha o Halemano, ua waiho oia i ka ai a me ka ia, a ua pau kona manao i na mea e ae, o Kamalalawalu wale no kona manao nui i na la a pau loa; no keia manao pono ole ia ia, ua nawaliwali kona kino a make iho la.

*No Laenihi, oia ko Halemano mua pono, ua hele oia ma na wahi a pau o keia mau mokupuni a pau, e imi i wahine na Halemano, kona kaikunane. Ua hele no hoi oia a kokoke i **Puna**, lohe e oia i ka make o Halemano, hoi e ia i Kaau, ma Waianae ma Oahu nei; nolaila, loa ole o Kamalalawalu ia ia. A hiki o Laenihi i Kaau, ma Waianae ma Oahu nei; he mana ko Laenihi e hoola i na mea make, no laila, ola hou o Halemano.*

*A ola o Halemano, ninau aku o Laenihi: "Heaha ke kumu o kou make ana?" I mai o Halemano: "He wahine. Eia ke ano ke hiki mai, he wahine maikai loa o na maka a me ke kino, he lauoho kalole eleele, he wahine kiekie hanohano, kohu alii, ke nana aku." Ninau hou aku o Laenihi: "A pehea kona kahiko o waho?" "He aala ke kapa e like me ke pele o Kauai a me ka mahuna, a he pa-u nahenahe ulaula ma hope, he lei hala, me ka lehua ko ke po'o, a me ko ka ai." I aku o Laenihi: "No **Puna** a me Hilo ka lehua, no **Puna** ka ouholowai o Laa, nolaila no ka pukohukohu, no **Puna** ko wahine, aole no ke komohana a ka la. Ina o ka wahine i lohe wale ai i **Puna**, o Kamalalawalu, he wahine maikai io no," pela aku o Laenihi ia Halemano.*

Ninau o Laenihi ia Halemano: "Ahea hiki ko wahine?" I mai o Halemano: "Aia a moe iho wau, o ka manawa ia e hui ai maua; e hoolohe no auanei oukou i ke kamailio a maua, ke moe ae au." "Ae," wahi a Laenihi. "I moe olua auanei me ko wahine, e ninau aku oe i ko wahine, i kona aina a me kona inoa."

A lohe o Halemano i na olelo a kona kaikuahine a Laenihi, mahope o laila, moe iho la laua me Kamalalawalu. Ma keia moe ana, ninau aku o Halemano ia

*Kamalalawalu: “Owai kou aina hanau, a owai kou inoa?” “O **Kapoho i Puna**, Hawaii, ko‘u aina hanau, aia ma ka hikina a ka la ko‘u aina, aole ma ke komohana; o ko‘u inoa, o Kamalalawalu.” Mahope o laila, ala ae la o Halemano a olelo aku ia Laenihi, a lohe o Laenihi, olelo aku la ia ia Halemano: “E ai oe i ka ai, e kii aku i ko wahine i Hawaii.” Ae mai o Halemano.*

*Mamua ae o ka holo ana o Laenihi i Hawaii, e kii ia Kamalalawalu, olelo aku ia i na ouli o kona hele ana, a hope e hooiaio aku ai i kona kii ana. Malaila ka loa a me ka ole o Kamalalawalu. Eia na ouli a Laenihi i olelo aku ai: “I ua ka ua, aia au i Molokai; olapa ka uwila, aia au i Maui; kui ka hekili, aia au i Kohala; nei ke olai, aia au i Hamakua; kahe ka wai ula, aia au i **Puna**. Alaila, loa ko wahine ia‘u, nolaila e noonoo oukou i keia mau mea a‘u e olelo nei, o poina auanei.” A pau ka olelo ana a Laenihi, hele mai la ia ma ke kino ia, o ia kela ia o laenihi a hiki i keia la.*

*Holo mai la o Laenihi i ke ahiahi, a hiki i Haleolono ma Palaau i Molokai, ua ka ua. Kahaha o hope no ka hikiwawe loa. Malaila aku a Hanakaieie, ma Kahikinui i Honuaua, ma Maui, olapa ka uwila. Kahaha hou o hope no ka emo ole loa. Mai Maui aku a Umiwai, ma Kohala i Hawaii, kui ka hekili; malaila aku a Pololikamanu, ma waho o Mahiki i Hamakua, nei ka olai. Malaila aku a hala o Hilo, a komo i loko o Panaewa, a hiki i Kukulu ma waho o **Puna**, kahe ka wai ula. Alaila, noonoo o hope nei, ua loa o Kamalalawalu.*

*Ma keia hiki ana o Laenihi i **Kapoho** ma **Puna** i Hawaii, noonoo iho la ia i ka mea e ike ai ia Kamalalawalu, i loko o kona kapu e paa ana, a loa iho la. Eia ke ano; Hoala mai la oia i ka makani, makai o **Puna**, he unuloa ka inoa o ia makani, a ala mai la ke kai mai kona lana malie ana, a hai a nalu iho la ma waho o **Kaimu**. Oia kahi hee nalu mau i na wa a pau loa. I ke kakahiaka nui, hai mai la ka nalu mua, ala ae la na kanaka, a nana aku la me ka uwa nui loa, ma keia uwa ana, lohe aku la o **Kumukahi**, ke kaikunane o Kamalalawalu, hele mai la ia e nana i ka hai o ka nalu, a ike hoi aku la olelo ia Kamalalawalu. A lohe o Kamalalawalu, ala ae la ia a hele.*

*Olelo hoaakaka no Kumukahi; ke kaikunane o Kamalalawalu. He punahele o **Kumukahi** i kona kaikuahine, aohe ana olelo hookah e hoole ia, e hiki i kona kaikuahine ke ae i na mea a pau a kona kaikunane e olelo ai, aole e hoole, mai ka mea nui a ka mea liili.*

*Hele aku la o Kamalalawalu e heenalu ma **Kaimu**; ia ia i hiki aku ai ma ka ae one, nana aku la ia i ka nalu i ka hai mai. Ku ka nalu mua, he kakala ka nalu mua, a hai ia, he pakaiea ka nalu alua, a hala ia, he opuu ka nalu akolu, a hala na nalu ekolu, au aku la o Kamalalawalu, e heenalu. A hiki i kahi o ka nalu e hai ana, hee mai la ia, ekolu nalu i hala ma kana hee ana, pio loa iho la ka nalu, aohe nalu o ia wa; kakali iho la ia, me ka manao e ku hou mai ua nalu hou, pela kona lana ana a opili ia, manao iho la e hoi i uka.*

*Ia wa hoala hou o Laenihi i ka nalu, a ike o Kamalalawalu, hee hou iho la ia, a kokoke e pae i uka, lilo iho la ka nalu ana i hee ai i ia, pau ae la ka nalu. O keia ia, o Laenihi no ia, ua lilo iho la ia, i ia, ia wa. A ike o **Kumukahi** ke kaikunane aloha a Kamalalawalu i ka ia, kahea aku la ia, penei: “E Kamalalawalu e! kuu puni o ka ia.” Aole e hiki ia Kamalalawalu ke hoole, no ka mea, he leo no kona*

kaikunane. Lalau iho la i ka ia a hoi aku la i ka hale, hoo iho la i loko o ka ipu wai a lilo ae la ia i milimili na kona kaikunane.

I ka po, i ka moe ana o loko o ka hale, lilo ae la o Laenihi mai ke kino ia, a ke kino moa, i awa lele ae la a ma ka haka moa o waho kani, pela kona kani ana, a pau na moa elima. Wehe mai la ke alaula o ke kakahiaka nui, iho aku la ia me ke kino moa a hiki i kahakai, lilo ae la i kino wahine. Pii mai la o Laenihi me ke kino wahine a hiki i ka hale o Kamalalawalu ma e noho ana. Ninau aku o Kamalalawalu: “Mahea mai oe?” “Maanei mai nei.” “Aohe o onei wahine e like me oe, a ina no hoi no anei aku nei, aole no e hele mai e lapaau ia oe, aia ko ‘u wahi i **Kaimu**, o Nawahinemakaakai ko ‘u inoa.” Lilo ka lei ia Laenihi, nonoi hou o Laenihi i ka pa-u, haawi no o Kamalalawalu, alua mea i lilo ia Laenihi.

A loa keia mau mea ia Laenihi, hoi mai la ia mai Hawaii mai a hiki i Waialua, a kahi o Halemano e noho ana, hoike aku la o Laenihi i ka lei, a me ka pa-u, ia wa, wikiwiki iho la o Halemano e holo i Hawaii, hoole mai o Laenihi: “Aole e loa pela. Eia ka mea e loa ai, e hana i milimili na ke kaikunane punahele o Kamalalawalu, o **Kumukahi** ka inoa, no ka mea, ua ike aku nei au, o kana mea e olelo ai, oia ka kona kaikuahine e hana ai, aole ia e hoole i na leo a pau a kona kaikunane e pane ai.”

Nolaila, olelo o Laenihi, e kalai kii, mai Waialua a Waianae, e paele i ka alaea a me ka nanahu, a e hana i moa laau, hooholoholo i luna o ka nalu, a i koieie i luna o ka wai, a i lupe hoolele i luna. I waa ula, i kanaka ula, i la ula, he hoe ula, he kaula ula, a he waa nui, a he waa iki. A makaukau keia mau mea a pau loa, holo aku la lakou a hiki i **Puna** ma Hawaii, he mau aina liilii e pili ana i **Puna**, o **Makuu**, o **Popoki**; i laila hoolele ka lupe, uwa o uka i keia mea lele.

Ia lakou e uwa ana, lohe aku la o **Kumukahi**, ke kaikunane o Kamalalawalu, hele mai la ia e nana, a ike ia, holo mai la a ka ae one e pili ana me ke kiai, kahea mai la i na kanaka o luna o ka waa: “Na ‘u ka mea lele.” I aku o Laenihi ia Halemano: “Haawi ia aku na ke keiki.” A lilo ka lupe ia **Kumukahi**. Hookuu ka waa liilii i luna o ka nalu, uwa hou o uka; alaila, kii hou o **Kumukahi**, a nonoi aku penei: “E! kela waa, keia waa, e na mea i luna o ka pola, na ‘u ka waa liilii.” Ae aku o Laenihi. Pela wale no ka hana ana a hiki i ke kii, hoolale ae ana o Laenihi i na waa a pau, e kukulu kii o kela waa keia waa, ma keia ku ana o na kii a pau loa, huli hou o **Kumukahi** a nonoi hou i na waa, nana na kii.

Olelo aku o Halemano a me Laenihi: “He punahele no oe i ko kaikuahine?” “Ae,” pela mai o **Kumukahi**; “ma ka ‘u e olelo ai, malaila ia.” “Kahea ia hoi ha.” Kahea o **Kumukahi**: “E Kamalalawalu e! Hele mai, aia ka a hele mai oe, alaila, loa kuu milimili.” A hiki o Kamalalawalu, olelo hou lakou la: “He punahele no auanei oe i ko kaikuahine, ke olelo aku oe e huli aku ke alo mahope, a o ke kua mamua nei?” “Ae.” A huli kua aku la o Kamalalawalu, nana aku lakou ma ke kua, aohe puu, aohe kee. A pau ko lakou nana ana, olelo hou lakou i ke kaikunane. “He punahele no oe i ko kaikuahine ke olelo aku e huli mai ke alo i mua nei?” “Ae,” a huli mai la ke alo o Kamalalawalu.

*Ia wa, pii o Kamalalawalu i luna o na waa; a hiki ia i luna, kahea o Halemano i ka poe hoewaa e hoe, ia wa lilo elua i Oahu nei. Hahai mai la o **Puna** a me Hilo, aohe launa mai, hao mai la ka mana o na waa o Halemano a me Laenihi.*

*Ma keia holo ana, pae ae la kekahi waa me **Kumukahi** i Hauula ma Koolauloa. Ilaia kekahi kii e ku ana, o Malaekahana ka inoa, hoohihi iho la o **Kumukahi** i ke kii, noho iho la i laila. O Halemano, holo loa aku la lakou a pae ma Waialua a me Waianae, e hele mai laua e hookupu ia Kamalalawalu.*

*A pau ka hookupu ana, ekolu la i hala, haohao o Kamalalawalu ia **Kumukahi** i ka ike ole ia aku. Ninau aku la ia ia Halemano a me Laenihi: “Auhea o **Kumukahi**?” “Aia i Hauula, ua noho ia puni ana o ke kii.” I aku o Kamalalawalu: “E kii aku a hoi mai.” A hoi mai la o **Kumukahi**, olelo aku la o Kamalalawalu: “E hoi oe me ka waiwai i Hawaii, i na makua o kaua a me na makaainana, o poino mai kekahi o lakou.” Ia wa, hoi aku la o **Kumukahi** i Hawaii.*

[Translation]

Wahiawa and Kukaniloko were the father and mother of Halemano. Kaukaalii was the mother of Kukaniloko, and the land of Halemano, which is next to Lihue in Waianae, is the place where Halemano was born. Through the married life of Wahiawa and Kukaniloko, his wife, six children were born to them, four males and two females. The names of the children were as follows: Maeaea, the first, was male; Kaiaka, the second, was also a male; Anahulu, the third, was another male; Halemano, the youngest of the children, was another male; Pulee was a female; Laenihi was a female with supernatural powers.

Laenihi was the eldest, and Halemano, the youngest [of the family], and the hero of this story. He was nurtured in Kaau until he grew up, and became a very handsome man, perfect in form, without pimples or deformity, with straight back and open countenance. While Halemano was living with his grandmother, Kaukaalii, at Kaau, in Waianae, he was subject to dreams.

Concerning Kamalalawalu; she was the daughter of Hanakaulua and **Haehae** of **Kapoho, Puna**, Hawaii. The parents of Kamalalawalu were chiefs of the land of **Kapoho**. She was a very beautiful woman to behold, far superior to all the women of **Puna** and Hilo, a virgin, brought up under very strict kapu; no person was allowed to see her and she had no companion other than her own brother, **Kumukahi**. These two had eight hundred dogs for their companions.

At this time Huaa was the king of **Puna**, and Kulukulua was the king of Hilo. Both of these kings were courting Kamalalawalu, giving her large quantities of properties from **Puna** and Hilo, with the idea that in time one of them would win her hand and take her to wife.

In Halemano's first dream, he dreamed that he met Kamalalawalu in Kaau. After that he met her in his dreams frequently, and this happened so often that he fell deeply in love with the object of his dreams. Because of this great love, Halemano refused to take food and meat, and he denied himself everything; his

whole mind was centered on Kamalalawalu, both night and day. And because of this he became very ill and finally died.

Laenihi, who was the elder of Halemano, in the meantime was traveling from place to place in search of a wife for Halemano her brother. In her search she went until near **Puna**, when she was recalled upon hearing of the death of Halemano which forced her to return to Kaaui in Waianae, Oahu. Because of this she failed to meet Kamalalawalu. When Laenihi arrived at Kaaui, through her power to restore the dead to life, Halemano was again brought back to life.

Shortly after Halemano was restored to life, Laenihi asked him: "What was the cause of your death?" Halemano replied: "It is because of a woman. This is the manner of her appearance [in my dreams]: she is very beautiful; her eyes and body are perfect; she has long straight, black hair; is tall, dignified, and seems to be of very high rank like a chiefess." Laenihi again asked him: "What is the nature of her outward dress?" "Her dress seems to be scented with *pele* and *māhuna* of Kauai, and her pa-u is made of some very light material dyed red. She wears a hala wreath and a lehua wreath on her head and around her neck." Laenihi then said: "It is **Puna** and Hilo that the lehua blossoms are found. It is in **Puna** that the *ouhollowai* of Laa and the *pūkōhukōhu* are found; therefore, your lover must be a woman of **Puna**; she is not of the west. If it is Kamalalawalu, the woman I heard so much of while in **Puna**, then she must be very beautiful indeed." Laenihi then again asked: "How do you meet her?" Halemano replied: "When I fell asleep we meet very soon after, and you could hear us talk if you should listen; even now you could hear us if I fall sleep." Laenihi then said: "Yes, you may go to sleep now. If you should meet your lover, ask her to give you her name and the name of the land in which she lives."

After Halemano had received these instructions he fell asleep and again met Kamalalawalu. In this dream Halemano asked Kamalalawalu: "What is the name of the land of your birth and what is your name?" "**Kapoho** in **Puna**, Hawaii, is the land of my birth; it is where the sun rises, and not in the west. My name is Kamalalawalu." Shortly after this Halemano awoke from his sleep, and he told Laenihi of his dream. When Laenihi heard this she said: "You must partake of some food and I will go and bring you your lover from Hawaii.." Halemano then consented and took some food.

Before Laenihi set out for Hawaii to bring Kamalalawalu, she told of the signs of her going so as to make known to those behind of her arrival and coming home, whereby they could tell whether her mission was a success or not. The signs were as follows: "If it rains, then I am at Molokai. If the lightening flashes, then I am at Maui. If it thunders, I am at Kohala. If you feel an earthquake, I am at Hamakua. If the red water flows, I am at **Puna**. If the signs show that I am at **Puna**, then you can be sure that I will be able to get your lover. You must consider these things I am telling you, else you forget." Soon after this Laenihi went off in the form of a fish; and the fish that is called *laenihi* is named after her. This is the name of this fish to this day.

It was in the evening that Laenihi set out and when she was off the coast of Haleolono in Palaau, Molokai, it began to rain [in O'ahu]. Those with whom she had left the instructions were surprised at the speed she was traveling. From this

place she next passed off Hanakaieie at Kahikinui in Honuaula, Maui, and the lightning flashed. The people were again greatly amazed at her great speed. From Maui she next passed off Umiwai in Kohala, Hawaii, when the people heard the roar of the thunder; then when she was off the coast of Pololikamanu outside of Mahiki, Hamakua, the people felt an earthquake. Next she passed Hilo and then off the coast of Panaewa, then off Kukulū, directly outside of **Puna**, when the red water flowed. At sight of this the last sign the people knew that Laenihi had reached Kamalalawalu.

When Laenihi arrived at **Kapoho** in **Puna**, Hawaii, she began to devise a way by which she would be able to meet Kamalalawalu, as she was then within the confines of her kapued place. At last Laenihi hit upon a plan. She, through her power, first caused the wind from the sea to blow, called the *unuloa*, which caused the sea to be aroused from its calm repose and the surf off **Kaimu** began to roll in. When the people rose from their sleep and saw the surf, they all began to shout and yell. While the people were shouting, **Kumukahi**, the brother of Kamalalawalu heard it and he came out to see the cause, and saw that it was the surf; so he returned and told Kamalalawalu of the matter. On hearing this she rose and prepared to go out [surf riding].

A few words in relation to **Kumukahi** the brother of Kamalalawalu. **Kumukahi** was a great favorite with his sister, not a single request would be refused by his sister that she could comply with, from the greatest to the smallest.

When Kamalalawalu saw the surf rolling in at **Kaimu** she started out for the beach. Upon arriving at the place she stood on the sand and watched for a chance to swim out. She allowed the first roller, known as the *kākala*, to come in until it reached the shore; then the second, known as the *pakaiea*; then the third, the *‘ōpu‘u*; as soon as this roller reached the shore, she plunged in and swam out to the place where the rollers began to curve up. When she arrived at this place she took the first roller that came along and rode in on it. This she repeated three times, when the surf began to grow smaller till after a short while there was none to be seen. She then waited with the hope of again seeing the surf grow larger; but after waiting until she was almost stiff with the cold not a single surf could be seen; so she concluded to return to the shore.

At about this time, Laenihi caused the surf to rise again and it began to roll in. When Kamalalawalu saw this she again returned and took the first surf and rode in, but before she reached the shore it ceased and the surf again disappeared. Just as she reached the shallow water she saw a fish and **Kumukahi** at the same time called out to her: “Kamalalawalu, take up my favorite, the fish.” This fish was Laenihi herself, Kamalalawalu could not refuse the request of her brother; so she took up the fish and returned home. After arriving at the house the fish was put into a calabash of salt water and it became a plaything for **Kumukahi**.

That night after everybody had fallen asleep, Laenihi transformed herself from a fish into a rooster; it then flew onto the roosting place outside and began to crow. The crowing was kept up until the dawn began to break. The rooster then proceeded down to the house where Kamalalawalu was living. When she arrived at the house Kamalalawalu asked her: “Where are you from?” “I am from here.” “There is no woman like you near here, and even if you belonged to any place

near, you would not come, because they all know that people are forbidden from coming here on pain of death.” Laenihi then said: “I come from shoreward.” “If that is so you are telling me the truth.” Laenihi then proceeded to speak of her errand: “Have you ever met a man in your dreams?” “No,” said Kamalalawalu. Laenihi again asked: “Have you no wreath that you have worn until withered?” “I have a wreath, but I am not going to give it to you, for you may cause my death with it.” Laenihi replied: “All right, you give it to me and in case you should become ill, come for me and I will come and cure you. I am living at **Kaimu**; my name is Nawahinemakaakai. Laenihi took the wreath and then asked for the pa-u of Kamalalawalu which was also given up.

After Laenihi had received these things she returned from Hawaii to Waialua and from there on to where Halemano was living. Laenihi then showed him the wreath and the pa-u. Upon seeing these things Halemano hastily prepared himself to go to Hawaii; but Laenihi rebuked him, saying: “You will not be able to get her in that way. Here is the way to get her: You must first make some playthings for the favorite brother of Kamalalawalu, **Kumukahi** by name; because I have seen that whatever things he desires his sister would always do; she will deny nothing that her brother requests of her.”

Laenihi then instructed the people of Waialua to Waianae that wooden idols be hewed out and that they be painted red and black. Orders were also issued that wooden chickens be made to ride on the surf, also *kō'ie'ie* floaters, and kites to fly above; also that a red canoe be prepared and red men be had to paddle the canoe. The men should be provided with red paddles and the canoe must be rigged with red cords, and that a large and a small canoe be provided. After these different things were ready they set out for **Puna**, Hawaii. Upon their arrival off of **Makuu** and **Popoki**, two small pieces of lands next to **Puna**, the kite was put up. When the people on the shore saw this flying object they all shouted with joy.

While the people were shouting **Kumukahi**, the brother of Kamalalawalu, heard it and he came out to see the cause of the shouting. When he saw the kite he ran to the beach and called out to the men in the canoe: “Let me have the thing that flies.” Laenihi said to Halemano: “Let the boy have the kite,” and it was given to **Kumukahi**.

The small canoe was then let down and as it floated through the surf the people ashore again shouted with joy. **Kumukahi** turned back and called out to those in the canoe, saying: “Let me have that small canoe.” Laenihi gave her consent. He then requested all the things exhibited by the people until the idols were the only things left. Laenihi then ordered that the idols be made to stand up in all the canoes. When **Kumukahi** saw the idols he asked that they all be given to him.

At this Laenihi and Halemano said: “Are you a favorite with your sister?” “Yes,” answered **Kumukahi**, “She will do anything I ask of her.” “Call for her then.” **Kumukahi** then called out: “Kamalalawalu, come here. I cannot get these playthings unless you come.” Upon the arrival of Kamalalawalu another request was made of **Kumukahi**: “Are you a favorite with your sister, and would she mind if you asked her to turn her back this way?” “Yes.” Kamalalawalu then turned her back toward the canoes. The people then looked at her and saw that

she was neither humped back nor deformed in any way. After inspecting her they said to the brother: “Are you a favorite with your sister, and would she obey you if you request of her to turn her face this way?” “Yes.” Kamalalawalu then faced toward the canoes.

Soon after this Kamalalawalu went aboard one of the canoes; whereupon Halemano gave orders to the paddlers that they start on their return, and the two were thus carried off to Oahu. The people of **Puna** and Hilo pursued them but could not come near them, as by the power of Halemano and Laenihi they were soon left far to the rear.

In this fight to Oahu, one canoe, the one in which was **Kumukahi**, landed at Hauula, Koolauloa. There was at this place an image standing, Malaekahana by name; upon seeing this image, **Kumukahi** took such a fancy to it that he remained there. Halemano and the others, together with Kamalalawalu, continued on their way and landed at Ukoa at Waialua. As soon as the canoe in which Kamalalawalu was a passenger landed, a crier was sent out to make a circuit of Waialua and Waianae with orders to the people to come and give presents to Kamalalawalu.

About three days after the *ho'okupu*, Kamalalawalu for the first time missed **Kumukahi**, so she asked of Halemano and Laenihi: “Where is **Kumukahi**?” “He is at Hauula where he is enraptured by an image that is there.” Kamalalawalu then said: “Go and bring him here.” When **Kumukahi** arrived, Kamalalawalu said to him: “You had better return to Hawaii with the presents to our parents and to our people, else some of them will feel troubled over us.” **Kumukahi** in obedience to his sister returned to Hawaii.

Pīkoiaka‘alalā in the Uplands of Puna

Pīkoiaka‘alalā, born on Kaua‘i, became renowned for his archery skills, skills taught to him by his father, ‘Alalā and his mother, Ko‘uko‘u who were known to be experienced rat shooters. Pīkoi made an honorable name for himself throughout the Hawaiian Islands during the time of Keawenuia‘umi and eventually married the daughter of Keawenuia‘umi and became the son-in-law of Hawai‘i’s high chief (Pukui & Curtis 2010:42). In the following *mo‘olelo*, Pīkoi travels through the upland forest of Puna and utilizes his archery skills to help the chiefs of this district. The *mo‘olelo* of Pīkoiaka‘alalā in the uplands of Puna is given below.

For many weeks Pīkoi and the young chiefess lived happily in Hilo. Pīkoi was son-in-law of the high chief now, a very great man. He enjoyed games and dances. More than all he enjoyed his wife.

But one day he said to her, “I came to see Hawai‘i, and I have seen only Hilo. I long to see all of this great island.”

The young chiefess smiled at him. “Men long to see the world,” she said. “Go then, my husband. Go to **Puna** first. It may be my father will go soon to our home in Waipi‘o, and we shall meet you there. Oh travel fast, Pīkoi, for I shall be very lonely.”

Keawenui chose young men to go with Pīkoi, young men who knew the trails, young men who could travel steadily for days. These young men found Pīkoi a fine companion, a good walker, and a wonderful shooter of rats. By the time they reached **Puna**, they were telling of the shots they had seen.

The chief of **Puna** gave a feast for the son-in-law of Keawenui. At the feast he heard stories of Pīkoi's shooting. "He shot rats we could not even see!" the young men said. "He killed the enemies of our high chief."

Hope woke in the heart of the **Puna** chief. "I, too, have enemies," he said to Pīkoi. "Two birds come at night to my gardens and the gardens of my people. They are eating all our food -kalo, sweet potatoes, everything. In the morning we find only empty vines. They are bringing us starvation."

"Has no one tried to kill them?" Pīkoi asked.

"No one can see them. They come only after dark. In the morning they are gone. But you, O Pīkoi! Your young men say that your sight is better than the sight of others. Your skill is greater than the skill of others. O Pīkoi, kill those enemies of mine."

"I will try," Pīkoi promised.

A little later he left the eating house. Darkness had come. Pīkoi stood looking over the chief's garden, bow and arrows in his hands. For a time his keen eyes searched the patches of *kalo* and potatoes. There! In among the sweet potato vines, something moved! He saw those evil birds and shot. Looking around, Pīkoi saw that the men were still inside the eating house. He went to the potato patch to get his arrow but left the dead birds on the ground. Then he went back into the eating house to join the talk and laughter.

It was late when the men made ready for sleep. The chief led Pīkoi to the best pile of mats. "This is your place, my friend," he said. "May you sleep well. But, O Pīkoi, I beg you to wake at dawn to kill my enemies. When full daylight comes they will be gone."

"I shall wake in time," Pīkoi answered as he pulled the kapa covers over him. He was tired and slept soundly.

But the chief could not sleep. Every little while he got up and went to the doorway of the sleeping house. The night was very black.

Dawn at last. Now was the time, the only time to kill those birds! In a little while they would be gone. But Pīkoi was sleeping soundly. The chief did not know what to do. "He said he would wake in time," the chief thought, "but he does not wake. Shall I call him? No. He is the son-in-law of Keawenui, too great a man to anger. I dare not wake him." The chief went to the doorway again. With heavy heart he watched the daylight grow.

The sun was shining when Pīkoi awoke. He greeted the chief. “Have you been out to look for your birds?” he asked.

“Its too late,” the chief answered sadly. “You slept soundly and now the birds are gone.”

“Go out and look,” said Pīkoi. “Look in your sweet potato patch.”

The chief went. He found the dead birds. “Dead!” he cried joyfully. “My enemies are dead! But what could have killed them?” He stooped to look. “Shot! But who-?”

Suddenly he knew! He hurried back and met Pīkoi outside the sleeping house.

“They are dead!” the chief cried in excitement. “O my friend, I don’t know when you did it. But you have killed my enemies! My people will have food!”

The chief of **Puna** offered Pīkoi canoes to finish his journey. “Good!” Pīkoi said. “The trails are rough and long.” He and his young men paddled. As they went along the coast, they stopped at villages, they climbed the mountain slopes, they looked at the great lava flows, and they listened to those who had seen Pele coasting down the mountainside on her fiery sled.

One day they stopped for water. “You are welcome to the water that flows from our springs,” the people said. “But the springs are on the edge of the ocean, and the water is a little salty.”

“Let us get water from the mountainside,” said Pīkoi.

“There is no spring on all the mountainside,” the people answered.

Pīkoi looked for a long time at the mountain. “Do you see that place where the fog rests? Just above it is a spring.”

“Not so,” the men of the village told him. “We have climbed all over that mountain slope. There is no spring.”

“You two,” Pīkoi said to two of his young men, “climb to that place. Take two men of the village with you, and take water gourds. Watch my arrow, for where it strikes the earth, there is the spring.”

The men of the village did not want to go. “A long climb for nothing,” they said.

“Pīkoi is wonderful,” his young men answered. “He has shot rats so far away we could not see them. He shot birds in the dark.”

“Yes, rats and birds a man may shoot, but no one can shoot a spring where there is no spring!” At last, however, two men said they would go.

The four climbed to the place where fog rested on the mountain. Then they turned to look below. They saw Pīkoi raise his arms to shoot. They heard the

arrow strike the earth above them. In a moment they had reached the place. There was the arrow sticking in dry earth.

“What did we tell you!” said the two from the village. Pīkoi’s young men pulled out the arrow and water flowed – cool, clear water. The men of the village stared in wonder as the others filled their gourds. Then they ran down the mountain. “Water!” they shouted. “A good spring that flows freely. Bring your water gourds!” The whole village climbed to see the wonder and to drink the good water of the spring.

Water still flows from that mountain spring, and when children stop to drink, they hear, again, the story of Pīkoi. (Pukui & Curtis 2010:59-63)

Pīkoiaka‘alalā: Ke Keiki Akamai I Ka Pana, Pīkoiaka‘alalā: The Child Skilled In Bow and Arrow

Presented below is an accumulation of excerpts that reference Pīkoiaka‘alalā in the district of Puna. These excerpts were collected from several articles written by S.M. Kauai, from Kulanakauhale Ali‘i, O‘ahu that were published in the Hawaiian language newspaper, *Ka Nūpepa Kū‘oko‘a*. The following is a brief description of Pīkoi’s family and a summary of his journey through in the district of Puna.

O Alala ka makuakane, o Koukou ka makuahine. O ko laua aina i noho ai, o Waioli i Kauai. Ua ao no laua i ka laua hana o ka Pana iole i ko laua wa. A hanau mai na laua eono kaikamahine Akua, a hookahi kaikamahine kanaka. A o ka muli loa ‘o Pīkoiakaalala, ke keiki kaulana hoi no ke akamai i ka Pana Iole, ka mea hoi nona keia Kaa. [Dec. 16, 1865:1]

...O ka wa koke iho la no hoi ia i hoao ai o Pīkoiakaalala me Keakalaulani. A noho iho la no hoi e like me ka Keawenuiaumi olelo; hui pono ae la hoi ka piko o ke one i Waiolama, ia wa no hoi i kukuni paa loa‘i ka puuwai palupalu o Keakalaulani maluna o ke keiki Kauai. O i noho aku hoi laua nei a lua wale one o Punahoa. Lana mai la ka manao o Pīkoiakaalala e hele i ke kaapuni ia Hawaii Loa, no ka mea, o kana huakai no ia i olelo mua ai ia Waiakea, i kona wa i Oahu.

Olelo aku la ia i kana alii wahine, “Ina he mea oluolu i kou puuwai a me kou manao, i ka hooko ana mai i ke noi a kau kauwa kane nei, alaila, e hooko aku au i ka mea a ko‘u naau i kau nui ai.” Alaila, pane mai la kana wahine me kona mau leo nahenahe, “Heaha la ka mea a kuu puuwai i kau nui ai, e noi mai nei e ae aku wau, ina paha o ka hapalua o ko‘u kino palupalu nei, alaila, e hooko aku no au ia mea a i ole paha ia, o kekahi mea e aku paha,” pane aku la o Pīkoiakaalala, “e aho e ae mai oe e ia‘u e hele hoi au e makaikai i kou moku o Hawaii nei.” A he mea oluolu loa ia imua o kana alii wahine, me kona kauleo e mai no hoi i kana kane, a penei no ia: “Ke ae aku nei au ia oe, o hele, eia nae ka‘u kauoha ia oe, i hookahi anahulu la ou e hele ai a puni o Hawaii nei ia oe,” (oia hoi he umi la.) A he mea maikai no hoi ia imua o Pīkoiakaalala, i ka lohe ana ‘ku i ka leo uwauwali o kana wahine. A o ka hooko wale no ka hana i koe ia Pīkoiakaalala no kana mea i makemake ai o ka hele makaikai ia Hawaii Loa. [Jan. 27, 1866:1]

O ka hoomaka koke iho la noia o ko Pikoiaakalala hele, oia a me kekahi mau kukini mama a Keawenuiaumi, elima lakou, a oia no ke ono.

Hele aku la o Pikoiaakalala me kana aliiwahine pu no, e ukali ana a kahi e hoi mai ai. A kipa ae la e ike i ko laua makua alii, a pau ka ike ana, o ka hele loa aku la no ia o Pikoiaakalala, a hoi no hoi kana aliiwahine me ke kaumaha o ko Hilo kini, hoi luuluu i ke one o Hanakahi, i ka hele o ka mea aloha he kane, ka mea hoi nana e hoopumehana kona poli o na po anuanu o ua aina la.

*Ma kai o **Puna** ka hele ana, a hala o **Keaau**, mai laila aku a ka lae hala o **Kookoolau**, hoomaha iho la lakou ilaila. Nana a'ela o Pikoiaakalala mauka a'e o **Waiakahiula**, ike aku la ia i kekahi mau iole elua e kau ana iluna o ka laau. Ua hele a pau ka hulu i ka helelei i ka mahuna i ka ai i ka akaaka o ka awa kau laau a ka manu. 'O ko laua mau inoa pakahi, o Pahuhale, a o Panuhuwai. Olelo ae la ia i kona mau hoa hele, "Ike hoi i na iole nui e kau mai la iluna o ka laau." "Aia i hea?" wahi a na hoa hele. "Aia no hoi i kela uka nahele la, ua hele a hulu ole, i ka ai paha i ka awa a ka manu."*

Pane aku la kona mau hoa hele, "Ka inoa he keiki pono oe, o ka makou hele pu ana mai nei me oe, aole ka! he keiki wahahee ka oe. Aia no hoi ilaila ko makou maka e nana la, aole o makou ike, a ke i mai nei oe, aia i kela uka nahele la; pehea la oe i ike ai i kahi e loa, o ko kakou mau maka pu ana no hoi?" A no ka nui loa o ka hoomoloka o kona mau hoa hele, pane aku la o Pikoiaakalala ia lakou penei: "E pana hoi ha au i kuu pua, a e holo hoi oukou malalo a kahi e haule ai kuu pua, a o ka manawa no nae ia e ku ai o na iole, ilaila e pau ai ko oukou hoomaloka, a hoi mai hoi oukou, paa pu mai me kuu pua." Ae aku la kona mau hoa hele, eha o lakou i holo, hookahi i koe me ia nei.

*O ka hookuu aku la no ia o Pikoiaakalala i kana pua, o ka lele akahēle ae la no ia o ua pua nei maluna o ka poe e holo ana malalo. Ua kuhi ua poe kanaka nei, he wahi kokoke iki mai; he eiwa paha mile ka loa mai ka lae o **Kookoolau** a hiki i Pahuhale ma ke ana iliwai.*

Holo no hoi na kanaka malalo, kau aheahe no hoi ka pua maluna o ka lau o ka laau. A i lohe aku ka poe hahai i ka alala ana mai a ka waha o ka iole mua, o Pahuhale. A hiki ua poe kukini nei i kahi o olelo ia o Pahuhale, e waiho mai ana ua ku i ka pua; a ia lakou e uwa ana i ka iole i-o, alala hou mai ana no mauka iki iho, oia hoi o Panuhuwai. A holo hou aku la lakou, a ike i ka lua o ka iole, ua hele no hoi a mahuna i ka awa, e like me ka Pikoiaakalala olelo. O ka pau ae la no hoi ia o ko lakou kapa ana he wahahee ke keiki Pikoiaakalala. A o ka hoi aku la no ia o lakou me ka pua a Pikoiaakalala; a hiki ana lakou i o Pikoiaakalala la, e noho mai ana laua me ke kau wahi hoa hele ona. "Pehea mai la?" wahi a Pikoiaakalala. "Ua oiaio no kau," wahi a na hoa hele. Ke hookau aku la nae i ke ano o ke ahiahi.

*Eu ae la no hoi lakou nei a hele, ike aku la o Pikoiaakalala i kekahi mau manu, e kau mai ana mamua o lakou. 'O ka hana mau aia mau manu, o ka aihue i ka ai, ke kalo, me ka uala, aohe nao ai a na kanaka oia wahi i ka pau i na manu; a ua pana ia no hoi e ko laila poe akamai, aohe no hoi he ku iki. 'O ka inoa o ua mau manu la, o **Kanekiki**, a me **Koae**. Ua hele no hoi a uluhua o Hua-a ke alii o*

Puna, me na makaainana, i ka aihue o na manu i ka ai.

A ia lakou nei i kaalo ae ai ma ka puka pa o ka hale o ke alii o **Hua-a**, ikeia ae la na kukini a Keawenuiaumi e hele pu ana me ke akamai lua ole, oiai aole no hoi i ike ko **Puna** poe i keia keiki.

Ninau ae la na kamaaina o **Puna** i na hoa hele o **Pikoiakaalala**, “Nohea kela keiki?” Hahai aku la kona mau hoa hele, i aku la, “O **Pikoiakaalala** keia, o ke keiki akamai o **Kauaii** ka pana, a he kane hoi na ke kaikamahine a ko kakou **Haku Keawenuiaumi**.” A lohe ae la o **Hua-a** ke alii iaia o **Puna**, hoolale koke ae la i na aipuu e kalua i mea ai na ke kane a ke aliiwahine opio.

A makaukau ka mea ai, paina iho la ka aina ahiahi, a pau ka paina ana, hoopuka ae la o **Hua-a** i kona manao no ko lakou mau enemi nui o na manu, a pau ka **Hua-a** olelo ana. Ninau aku la o **Pikoiakaalala**, “Aia i hea ua mau manu la?” “Aia no i ko laua wahi i pee ai. Aia a aumoe lea iho la, alaila, o ko laua la manawa iho la ia e lele mai ai e aihue i ka ai, a ao ae, o ke kalina ke muu mai ana iwaena, aohe ai o ka pue, pela no hoi ke kalo.” A pau ka **Hua-a** olelo ana, alaila, nee ae la o **Pikoiakaalala** a ka paepae o ka puka o ka hale, o ka inoa oia hale, o **Halepuua**, eia nae i ka po ia e olelo nei, o ka nana aku la no ia o **Pikoiakaalala** a ike aku la no i ua mau manu la, e ekepue mai ana laua la i ka waena uala o kanaka, o ka hoolale koke ae la no ia o **Pikoiakaalala** i kana mea make, me ka ike ole mai o **Hua-a** a me ka poe a pau e ala pu ana me ia, o ka hookuu malu aku la no ia i ka pua ana a ku no o **Kanekiki**, waiho iho la iwaena, a pela no hoi o **Koae**, waiho pu ana laua i kahi hookahi, a ike o **Pikoiakaalala** ua make na manu i olelo a’e la, puka ae la iwaho me he puka hana wai ana la, i kii ka i ka pua ana.

Mai kahi ana i hemo mai ai a **Halepuua**, kahi a na manu e waiho ana me ka pua ana, ua like me hookahi hapaha mile paha; a hoi mai la o **Pikoiakaalala** mai ka alu iki ana ‘ku ma waho, o ka moe aku la no ia o **Pikoiakaalala**. Ia **Pikoiakaalala** e niolopua ana i ka hiolani a me ka hiamoe, kiei iho la o **Hua-a** ma ke poo, me ka manao e ala ae ana o **Pikoiakaalala** i ke aumoe, o ka manawa la hoi ia e hele ai e nana i na manu. Eia ka, ua ku e i ka wa e kamailio ana i ke ahiahi, o ko ia la mea ka ia i kau ai o ke keha i ka uluna lauhala o **Puna**. A i ke ao ana ‘e, olelo aku la o **Pikoiakaalala** ia **Hua-a** ke alii o **Puna**, “O hele nui hoi e nana i ua mau manu la, aia ke waiho la laua i kahi hookahi, ua make nae.”

A hooko io iho la o **Hua-a** e hele e nana i na manu, ma kahi a **Pikoiakaalala** i olelo aku ai. Hele aku la oia me na kanaka he nui; a ia lakou i hiki ai ma kahi i kuhikuhi ia ia lakou, e waiho make ana ke kino o ua mau manu la (**Kanekiki** a me **Koae**) aia no kela mau aina i **Puna**; a hoi aku la o **Hua-a** ma a hiki i kona hale, e noho ana no o **Pikoiakaalala**, ninau mai la nae oia, “Pehea mai la ka oukou hele ana ‘ku la?” “Ua oiaio no kau, a i aha la auanei ka ‘u makana ia oe e haawi aku ai nau,” wahi a **Hua-a**. Alaila, olelo mai la hoi o **Pikoiakaalala**, “Ina oe e manao e haawi mai i makana na ‘u ea, i mau kanaka mama i ke kukini, i elima kau e haawi mai ai e pono ai,” “ua lilo ia,” wahi a **Hua-a**. Kena ae la no hoi o **Hua-a** i kekahi mau kukini mama ona elima; a o ka makaukau iho la no ia o ka huakai, a o ka hele aku la no ia o **Pikoiakaalala** me kona mau hoa hele mai Hilo mai elima lakou, a elima hoi keia poe i oleloia ‘e la, loa he umi hoa hele.

A hiki lakou i **Kapoho**, ike aku la o Pikoiaaalala i ka Iole, a oleloia'e la ia i kona mau hoa hele, "He iole nui hoi kela, ua hele a nakaka ka ili i ka awa, hele no hoi na niho a lena, i ka ai paha i ka awa," "Aia i hea?" wahi a na hoa hele. "Aia no hoi mamua o kakou," o kela wahi a Pikoiaaalala i ike ai ua iole la, aia no kela wahi mauka'e o **Malama**, o **Kipukaakaiole** ka inoa, i kapaia ka inoa, oia wahi pela, no ke kuapuka o ke kua o ua iole la i ka nakaka i ka awa; a o **Kipukaakaiole** no ka inoa oia wahi a hiki i keia la.

A no ia hai ana o Pikoiaaalala he iole aia mamua o lakou, ia wa, hooiaio nui ae la no ka poe hoa hele mua ona mai Hilo mai, oiai ua ike lakou i ka mea i hana ia ia lakou. A o na hoa hele hou hoi o **Puna** aku, he oi loa ko lakou hoole ikaika ana, a hoopaapaa nui iho la ka poe i ike mua me ka poe i ike ole. Ka ka poe i ike olelo, he oiaio, he iole io no kela, ka ka poe ike ole hoi, aohe he iole, a he keiki wahahee loa keia. A no keia hoopaapaa ino iwaena o kona mau hoa hele; hoomaka iho la ia e hooko i kana hana i kaulana ai o ka pana, i pau koke ai hoi ka hoopaapaa iwaena o kona mau hoa hele.

Ia Pikoiaaala i hoomakaukau ai i kana pana, olelo mua aku la ia i ka poe hoomaloka, "E pana ana au i ka iole, a ia'u e hookuu ai i kuu pua, alaila, e holo mama oukou malalo, a e nana'e no nae hoi oukou i kuu pua, a ma kona wahi e haule aku ai, malaila no hoi oukou e hookolo aku ai; a i ike oukou ua make ka iole, alaila, e hoihoi mai oukou i kuu pua ke hoi mai oukou." Alaila, ae mai la no hoi ua poe kanaka la. O ka pana aku la no ia o Pikoiaaalala, o ka holo aku la no ia o ka poe i olelo ia'e nei. I ka poe kanaka e holo mama ana malalo, ke lele ae la no hoi ka pua maluna o lakou, o ka loihi oia wahi, mai **Kapoho** a hiki i **Malama-uka**, he umi paha mile ka loa oia wahi.

A haule no hoi ka pua ma kahi i olelo ia, ku no hoi ka iole, a mahope aku no hoi ka poe uhai, i lohe aku lakou i ka alala ana mai a ka leo o ka iole, i hiki aku ua poe la, ua make io ka iole, e paa mai ana ka pua ma ke kua, i nana iho ka hana, aole no hoi o kana mai o ka iole nui, ilaila pau ko lakou hoomaloka, i ka olelo a ke keiki akamai. A o Pikoiaaalala ma hoi, hele mai la no lakou mahope, a i ka poe kanaka i hahai ai, i ko lakou hoi ana'e i kai o **Malama**, halawai pu ae la lakou me Pikoiaaalala ma, ninau aku la o Pikoiaaalala i ua poe la, "Pehea mai la ka oukou mea i ike ai?" "Ua oiaio no kau, he iole io no, ua hele no hoi a nakaka ka ili, a lelo na niho, a no ke ku ana i ka pua ma ke kua, ua naha ke kua, a ua paa pu mai nei makou i ko pua, eia la." A pau ko lakou olelo ana no ka iole i oleloia'e la.

Hele nui aku la lakou a hiki ma **Puaakanu**, ike aku la o Pikoiaaalala i kekahi mau iole e paani ana i ka pahoehe o **Kikala**; a i ka poe hoa hele hoi ona e noho ana i ka malu o ka hala o **Puaakanu**, hooho hou mai la o Pikoiaaalala, "E! na iole nui hoi," "Auhea?" wahi a na hoa hele, "Aia no hoi ke paani mai la i kela pahoehe mamua o kakou," ua ane hiki paha i ka eono mile ka loa oia wahi, mai **Puaakanu** a hiki i **Kikala**. Aole hoi o lakou mea i hoomaloka iki mai ma ia olelo ana a Pikoiaaalala no ua mau iole la; a o ka inoa o ua mau iole la, o **Iole** a me **Lahokea**, a ua kapaia ka inoa oia mau aina e waiho la maanei mai o **Kikala**, ma ka inoa o ua mau iole la. Aole nae i pana o Pikoiaaalala mai **Puaakanu** aku, aia a hiki aku lakou ma **Kehena**. Ia lakou i hiki ai ilaila, e noho ana na'lii oia wahi me na kanaka pu, e nanea ana i ka puumanienie, haule iho la no hoi lakou nei hoomaha ilaila.

A ia lakou e hoonanea ana me na kamaaina, pane ae la ke keiki kaulana i kana olelo penei: “Me kakou no hoi e walea nei, pela no hoi kela mau iole e walea mai la i ka pahoehoe.” A ma keia mau olelo a Pikoiaakalala, ninau mai la ke konohiki oia aina, (**Kehena**) “Aia i hea ia mau iole?” “aia no hoi ke paani mai la i kela pahoehoe e uliuli mai la la.” A i na kanaka e nana ana ma kahi a ke keiki i kuhikuhi aku ai, aole loa he wahi mea a ike aku o lakou. A no ko lakou ike ole aku i na iole i olelo ia, ke kumu nui hoi ia o ko lakou hoopaapaa ana me na malihini, oi hoopaapaa na hoa hele ona me na kamaaina; a no ka nui loa o ko lakou hoopaapaa ana, nolaila, pane aku la o Pikoiaakalala, “E aho e pili kakou, na oukou no hoi na na kamaaina, he mau iwi ko makou ko na malihini, a na makou no hoi, he mau iwi no hoi ko oukou ko na kamaaina, he mea make hewa wale no ka hoopaapaa ana.” A no keia mau olelo pili i na iwi a Pikoiaakalala i pane aku ai. Ku mai la ke keiki kamaaina, ke konohiki hoi, a olelo mai la, “O ka oukou waiwai no paha ia o na iwi, o ka makou waiwai, he puua, he ilio, he moa, he kihapai kalo, he moo uala, he ahu moena makalii, he kuina kapa, he malo, oia na waiwai pili o ko makou aoao, a o na iwi no hoi ko oukou.” “Ua mau” wahi a Pikoiaakalala. O ke kumu o kona ae ana ma keia pili, no kona manao nui i ka pololi o kona mau hoa hele, nolaila, aole oia i manao e pilikia io ana lakou ma ia pili ana, i imi wale no oia i mea e pale ae ai i ka pilikia o kona mau hoa i ka mea ai ole.

O ka hoomaka iho la no ia o Pikoiaakalala e pana, me kona olelo mua aku nae, “Ina e pana au, alaila, e holo kekahi mau kanaka o oukou i elua, a i elua no hoi o ko makou aoao.” Ae mai la no hoi na kamaaina; o ke kuu aku la no ia o ke keiki Pikoiaakalala i kana pua, o ke kolili no ia a ku ana ua mau iole la o **Iole** a me **Lahokea**, a mahope aku no hoi ka poe kanaka i oleloia. A ia lakou i hiki aku ai, e waiho mai ana ua mau iole la i ke alanui, e paa ana ka pua ma na huelo, a hoihoi mai la ua poe kanaka la i na iole me ka pua, a hiki ana i ke alo o ka aha kanaka. A ike iho la na kamaaina ua oiaio ka ke keiki malihini olelo; a o ke eo ae la no hoi ia o ke konohiki ia Pikoiaakalala. Alaila, kena koke ae la ke konohiki i umu no ka puua, ka ilio, ka moa, a i umu okoa no hoi ko ka ai.

A moa ka mea ai i eo ai ia Pikoiaakalala, paina iho la lakou, a o na kamaaina pu no hoi kekahi i paina pu, e like me ka mea mau. A pau ko lakou hoopihia ana i ka lua o ka inaina, oia hoi na opu o lakou, ua hele aku hoi ka la e nalo ma ke kua o na mauna. A malu mai la hoi ke ano o ke ahiahi, hoolale ae la o Pikoiaakalala i kona mau hoa hele. Ina kakou, o ka eu ae la no ia, aohe hoi he wahi mea a kaohi iki mai o na kamaaina ia lakou e moe. A no ke kaohi ole mai o ke konohiki ia lakou e moe, nolaila, hoouna ae la o Pikoiaakalala i kekahi hoa kukini mama ona e holo hou ihope i o Hua-a la, e hai aku ia ia i ka hana lokoioa a ke konohiki o **Kehena**.

O ka holo no hoi ia a ke kukini ihope, a hele no hoi lakou nei. Aole no hoi i nalowale ke kii o ke kanaka, hiki ana ke kukini io Hua-a la, a hai aku la no hoi ke kukini i na olelo i hooili ia ‘ku ai iaia e ahai. A lohe iho la o Hua-a ke alii o **Puna**, i ka pono ole o ka hana a ke konohiki o **Kehena**.

A pau ka hahai ana a ke kukini i kana olelo, o kona eu ae la no ia e holo hou mahope o Pikoiaakalala. I ke kukini no hoi a hala aku, kena ae la o Hua-a i kona mau puuli koa, e hele e hao, a e kipaku aku i ke konohiki pono ole; a kai nui aku la no hoi na koa. A o kahi kukini hoi, hoes aku ana, o ka hiki ana iho no ia o

Pikoiakaalala ma ma kahi i ku ai na iole, oia hoi kela mau aina, o **Iole** me **Lahokea**, ekolu hapaha mile mai **Kehena** aku a laila, a mai laila aku hoi a **Halepuua**, he iwakalua a oi ae paha mile, he oi no hoi ka mama o ua wahi kanaka nei. Ninau mai la o Pikoiakaalala, “Ua hiki aku nei no oe io Hua-a la?” “Ae,” wahi a ke kukini, “A ua hai aku nei nae paha oe e like me ka ‘u olelo?” “Ae, ina aku paha ke hele mai la na koa, haalele aku nei auanei au, e hoomakaukau ana na koa.” A pau keia mau olelo a ke kukini; a o ka hele nui aku la no ia ma ia po a moe aku lakou nei i **Kaimu**, a ao ae, aohe he hana a Pikoiakaalala malaila, aka nae, ua hookipa maikai ia lakou e ko laila konohiki. A o na koa hoi o Hua-a, ua hiki mai lakou ma **Kehena** ma ia po no. A ua hao ia ke konohiki a me kona hookuke ia ana; a hoi aku no na koa o Hua-a, i ka pau ana o ka lakou hana, i kena ia mai ai e ko lakou alii. (Hua-a)

Hele no hoi o ua o Pikoiakaala ma ia la, o ke kolu hoi ia o na la i hala iaia; a hiki lakou ma **Puumanawalea**, aia no kela wahi i **Leapuki**. Ia lakou e hoonanea ana i ke aheahe a ka makani Puulena, e hoomaha ana hoi ilaila no ka lohi o ka hele ana. Ike aku la o Pikoiakaalala i kekahi iole nui e iho ae ana i ka pali o **Hoolei**, o ka hana mau ia a ia iole, o ka pii mau i kela la keia la iuka o **Panau** i ka aihue ai; aohe no hoi he nao ai oia mau aina i ka pau i ua iole nei; a olelo ae la ia i kona mau hoa hele a me na kamaaina pu hoi kekahi, no ka mea, o kahi no ia a na kamaaina e hele mau ai i ka wai, he wai hoi ia o **Puumanawalea**.

A i na hoa hele i lohe ai i ka Pikoiakaalala olelo, hooiaio iho la lakou; a o na kamaaina hoi, hoole mai la lakou, me ka olelo nui mai, he keiki wahahee keia. A no ka lohe ana ‘ku o Pikoiakaalala i ka lakou la olelo, nolaila, pane hou aku la o Pikoiakaalala, “He oi wale no kela o ka iole nui,” “Aia i hea ia iole e ke keiki wahahee?” wahi a na kamaaina. “Aia no hoi ke iho ae la i kela pali la, ua hele a kuahina ka hulu, hele no hoi na niho a wili ma ke kua,” Hoole ikaika mai la na kamaaina, “Aohe he iole nui o nei pali i lohe oe,” pane aku la no hoi o Pikoiakaalala, “He nui maka wale no paha ko oukou aohe ike i ka iole.” [Feb. 3, 1866:1]

Ia Pikoiakaalala e hoopaapaa ana me na kamaaina o **Leapuki**, a hai aku la kekahi kanaka kamaaina ia olelo imua o kekahi keiki alii oia wahi, oia o Hoiu; e lohe ae la o Hoiu no ka hoopaapaa o ke keiki malihini me na kamaaina, hele mai la ia a hiki i **Puumanawalea**, kahi hoi a ka aha hoopaapaa e ku pinai ana, hookowa ia'e la ka aha, i komo lea 'ku ka mea hanohano. A hiki o Hoiu ma ke alo o Pikoiakaalala, ninau aku la ia, (Hoiu) “O oe no anei ke keiki nana i olelo ae nei i ka iole nui kuahinahina?” “Ae, owau no,” wahi a Pikoiakaalala. “Aia i hea?” wahi a ke keiki alii; “Aia no hoi ke moe mai la iwaena o kela pali la, mai luna ae la ka iho ana 'e la i ka wa a makou e hoopaapaa ana, a no ka maona o ua iole la, moe iho la iwaena o ka pali.”

Ma keia olelo a Pikoiakaalala no kana mea i ike ai, pane mai la ke keiki alii me ke okalakala kunahihi ano huhu, “nohea mai oe e na keiki wahahee, o kau ike ana 'ku la, he iole ko ia pali? Owau ke keiki kamaaina o nei wahi, aohe nae au i ike he iole nui kuahinahina, ua hele hoi a wili na niho ma ke kua, he iole liilii wale no nae; a oia ka mea nana e ai ka uala o uka o **Panau**.” Alaila, pane aku la o Pikoiakaalala, “Ua kuhihewa oukou na ka iole liilii i aihue ka ai, aohe, na kela iole nui no e moe mai la iwaena o ka pali la, nana no i aihue ka ai o **Panau**; a no ka maona i ka ai e moe mai la.” “He wahahee,” wahi a ke keiki kamaaina. “Ina

he iole io kau e olelo mai nei, a he aha kou kumu pili?” “He mau iwi no ko kamahahele kumu a mau no hoi i kou mau iwi,” wahi a Pikoiakaalala. “He mau iwi no paha kou ko ke keiki malihini wahahee, he puua nui ka ke keiki kamaaina,” wahi a Hoiu.

A no ka pololi no o na hoa hele, nolaila, pane aku la o Pikoiakaalala, “Aole e make pono ko‘u mau iwi ia wahi puua wale iho no, aia he mau umeke poi, a he mau imu uala, a he ilio, he ia, alaila, pili pono ana hoi paha i ko‘u mau iwi.” “Ua mau,” wahi a Hoiu.

A pau ka pili ana, alaila, olelo aku la o Pikoiakaalala ia Hoiu penei: “I eha ou kanaka, a i eha hoi o‘u kanaka, a i pana au i ka iole, alaila, o ka manawa ia e holo ai o na kanaka e nana i ka iole, eia nae, e pana ana au i ka iole, aole e ku ma ke kino, e ku ana kuu pua ma ka nuku.” A no keia olelo a Pikoiakaalala e ku ana ka iole ma ka nuku, ia wa i ulu nui mai ai ke keiki Hoiu, me ka hoole mai, “Aohe iole, a ina he iole io, alaila, aole e ku ma ka nuku; a ina hoi e ku ma ka nuku o ku iole nui au e wahahee mai nei ea, alaila, o ko‘u mau kanaka he umi, a me a‘u hoi, (Hoiu) e pau makou i ke kalua ia i ka imu, a o na waiwai i pili mua ia, na oukou no ia, aka hoi, ina he iole liilii, a ua ku ia oe ma ke kino, e pau hoi kou mau kanaka he umi a me oe pu i ke kalua ia i ka imu,” pela wahi a Hoiu. Alaila, pane hou mai la o Pikoiakaalala, “E ku ana no ka iole nui ma ka nuku, aole nae e make koke iho i ilaila, e holo ahai ana kela i kuu pua a make aku i kahakai.” A no ia olelo ana a Pikoiakaalala, hoolale koke ae la o Hoiu i kona poe kanaka e hoa i ka imu.

A hoa ia ka imu, alaila, lalau ae la o Pikoiakaalala i kana pua i ka puolo; a kena ae la oia i ka poe kanaka i oleloia e holo e mamua o kona pana ana. A i na kanaka i hiki ai ma ke kumu o ka pali o **Holei**, ia wa, hookuu aku la o Pikoiakaalala i kana pua, oia kau-ahaehe no ia a ku ana ka iole, ike aku la na kanaka hahai i hiki mua‘i i ka holo ana mai a ua iole nei, aole no hoi o ka nui o kana mai, e paa ana no ka pua ma ka nuku e like me ka mea i oleloia e Pikoiakaalala. I ka iole e holo mai ana, makau aku la ka poe makai, a emi hope mai la lakou, a no ka holo loa ana o ka iole ma kai, alualu aku la ka poe hahai mahope o ka iole; a i ea aku ua poe la, e waiho mai ana ua iole la, o ka inoa o ka iole, o **Apua**, nona kela olelo ana, “ma ka iole i **Apua**,” e paa ana no ka pua ma ka nuku; a ike iho la lakou i ka iole nui launa ole, ua hele a kuahina, a wili no hoi ka niho ma ke kua; a hoi mai la ka poe hoike i oleloia. A hiki ana lakou imua o ka aha i **Puumanawalea**, ninau ia mai la lakou, “Pehea ka oukou mea i ike ai?” Hahai mai la lakou e like me ka lakou mea i ike ai no ka iole; a ua like no me ka Pikoiakaalala mea i olelo ai, aohe he kue iki. A lilo iho la ka olelo a Pikoiakaalala i olelo oiaio, a hooko koke ia iho la ka pili mua, a me ka pili hope, o ka pili mua, he ai, he puua, he ia, a o ka pili hope hoi, o Hoiu me kona poe kanaka he umi, ulua aku la a loko o ka imu, pau lakou i ka make. A o Hoiu, aia no kela wahi ma kai o **Leapuki**, ke waiho la a hiki i keia la, na ko laila poe e hai mai i ka oiaio.

A moa hoi na waiwai i eo ia lakou, paina iho la lakou a pau ka paina ana, hoee ae la lakou e hele, oia i e hoi aku ana ka la e pee ma ke kua‘ku o Maunaloa, a e kau mai ana na ao malumalu maluna o ka pali o **Holei**; a o ko lakou hele aku la no ia, ia lakou e hele akahahele ana, haupu mai la ka manao kauoha a kana aliiwahine, oia hoi o Keakalaulani, ina paha pela wale no lakou e hele akahahele

*ai, pau e na la i haiia mai ai iaia, e aho paha e hele mama ka pono; a no ia manao maikai i loaa iaia, nolaila, pane aku la ia i kona mau hoa hele, “E aho e holo mama kakou a moe iluna o Kau,” “Aole paha kakou e hiki i Kau poeleele e,” wahi a na hoa hele. Pane mai o Pikoikaalala, “Ka inoa no hoi i ao oukou i ka mama i ke kukini na Keawenuiaumi no ka mama hoi, a he aha hoi ko kakou mea e hiki ole ai i Kau i keia ahiahi? Ka inoa na ‘u e hopo na ka mea i ao ole i ke kukini, he pana ka ‘u mea i ao ai,” “Oia hoi ha, e holo kakou,” wahi a na hoa hele, o ka holo nui aku la no ia a hala o **Apua**, a hala mai o Kukalaula, a hiki ana lakou nei i Punaluu, i ka wa a ka noe o ka po i uhi mai ai i kona mau eheu; a ia lakou i hiki aku ai i Punaluu, e noho ana ilaila o Kohaikalani ke alii o Kau. Hele aku la na kukini a Keawenuiaumi, na hoa hele hoi o Pikoikaalala imua o Kohaikalani; a olelo aku la lakou penei, “I kauoha mai o Keawenuiaumi ia makou ke hiki i Kau nei i ou la, e hai aku ia oe i ka hunona ana, ei ae me makou, o ke kane hoi a ke aliiwahine opio,” “Auhea?” wahi a Kohaikalani, aia no i waho o kahua, kena koke mai la o Kohaikalani, “Kii ia ‘ku ke kane a ke alii a hoihoi mai i ka hale nei, eia ka hale,” o ke kii aku la no ia o ke kahu o Kohaikalani a ka lima o Pikoikaalala; a o ke komo aku la no hoi ia iloko o ka hale, me na hoa hele ona, a ike ae la o Kohaikala me Pikoikaalala ka malihini, ke kane hoi a ke aliiwahine, ka Haku hoi o lakou.*

Hoomakaukau ia no hoi na mea ai a na malihini, e like me ka mea mau. A pau ka paina ana, moe nui lakou ilaila, a ia Pikoikaalala no ke ao, o ke ala ae la no ia a hoala aku la i kona mau hoa hele e ala, “ina kakou,” wahi a Pikoikaalala. Ala like ae la lakou, paina iho la ke kakahiaka, a pau ka paina ana, ninau mai ia o Kohaikalani, “E hele ana ka huakai a ka hunona a kuu Haku i hea?” “I ka makaikai,” wahi a Pikoikaalala. [February 10, 1866:1]

‘Alalā was the father and Ko‘uko‘u was the mother. The land where they both lived was Wai‘oli on Kaua‘i. They both learned to shoot rats with an arrow during their time. Born to them were six supernatural children, and one human child. The youngest was Pikoika‘alalā, the child renowned for his skill in shooting rats, the one this legend is for. [December 16, 1865:1]

...Shortly after Pikoika‘alalā married Keakalaulani. They lived like Keawenuia‘umi had said; The umbilical cord of the sand of Waiolama was joined. At that same time Keakalaulani’s soft heart burned strongly for the Kaua‘i child. While they were living alone on the sands of Punahoa, the idea came to Pikoika‘alalā to travel around Hawai‘i because his trip was first mentioned to Waiākea during his time on O‘ahu.

He told his wife, “If it’s something that sits well in your heart and mind, to fulfill the request of your outcast husband, then I will fulfill the things that weigh heavily on my heart.” Then his wife responded in her delicate voice, “What are the things that weigh heavily on your heart, I am asking to grant you [this request]. If it be half of my soft body, then I would without a doubt fulfill these things and possibly more.” Pikoika‘alalā answered, “It would be better if you allow me to go and tour your island of Hawai‘i.” And it was a great thing in front of his wife, with her voice speaking to her husband like so: “I’m allowing you to go. However, here is my command to you: in one *anahulu* you will travel around Hawai‘i” (that is ten days). It was a great thing presented to

Pīkoiaka‘alalā when he heard the soft voice of his wife. And all that was left for Pīkoi to fulfill was his desire to go and tour all of Hawai‘i. [January 27, 1866:1]

Pīkoiaka‘alalā quickly began his journey. He and some swift runners of Keawenuia‘umi, there were five of them, and he was the sixth.

Pīkoiaka‘alalā went with his chiefly wife, who was escorting them to the place that they would return to. They visited their chiefly parents, and after visiting them, Pīkoiaka‘alalā began his long journey. His chiefess sadly returned to Hilo’s multitude, sorrowfully returning to the sands of Hanakahi, because of the departure of her beloved husband, the one who warms her bosom during the cold nights of this land.

The shore of **Puna** was the path traveled. After passing **Kea‘au**, they rested at **Ko‘oko‘olau**. Pīkoiaka‘alalā looked just inland of **Waiakahiula** and saw two rats perched on top of a tree. Their fur was molted and their skin was scaly in appearance because they ate the ‘awa that was suspended in the trees from the birds. Their individual names were Pahuhale and Panuhuwai. [Pīkoiaka‘alalā] said to his traveling companions, “Do you see those two large rats perched atop the tree.” “Where?” said his companions. “It is there in the forested uplands, they are without fur, probably from eating the ‘awa of the birds.”

His traveling companions replied, “I thought you were a righteous child, that is why we traveled with you, but oh no! You are a deceitful child. Our eyes are looking over there, we don’t see anything, and you are assuming that those rats are in the upland forest. I don’t know how you can see to such a far place, our eyes are looking there too?” Because his traveling companions were so skeptical, Pīkoiaka‘alalā replied in the following manner, “I will shoot my prized arrow, and all of you will run below to where my arrow falls, and when it hits the rats, it is there that you will end your skepticism, and when you all return, bring my arrow as well.” His companions agreed, four of them ran off and one remained [with Pīkoiaka‘alalā].

Pīkoiaka‘alalā released his arrow, the arrow immediately flew above while the people ran below it. The people assumed the place was near by; it was some nine miles from the point of **Ko‘oko‘olau** all the way to Pahuhale at the surface of the water cave.

The men ran below, while the arrow glided pass the leaves of the forest. The people who followed [the arrow] heard the squeal from the mouth of the first rat, Pahuhale. When the swift runners arrived at the place where Pahuhale was heard, [Pahuhale] was put down, pierced by the arrow; and while they were shouting at the rat, another squeal was heard just inland, which was Panuhuwai. And they ran again, and saw the second rat, which had become scaly from the ‘awa, just as Pīkoiaka‘alalā had said. The men immediately stopped calling Pīkoiaka‘alalā a deceitful child. They returned with the arrow of Pīkoiaka‘alalā; and upon their arrival to Pīkoiaka‘alalā, he was sitting with his traveling companion. “How about it?” said Pīkoiaka‘alalā. “What you said was true,” said the traveling companions. Then evening came.

They were all encouraged to go, as Pīkoiaka‘alalā saw some birds passing just ahead of them. The birds were doing what they usually do, that is stealing food, taro and sweet potatoes. There wasn’t a crevice with food in which the birds did not consume; and they were indeed shot by the clever people of that place, however, [the birds] did not stop. The names of the birds were **Kanekiki** and **Koa‘e**. The chief of **Puna** and the people became frustrated with the food being stolen by the birds.

As they [Pīkoiaka‘alalā and the traveling companions] passed the doorway of the chief Hua‘ā’s house, Keawenuia‘umi’s messengers were seen traveling with the unparalleled expert unknown to the people of **Puna**.

The people of **Puna** questioned the traveling companions of Pīkoiaka‘alalā, “Where is that child from?” The traveling companions followed along and answered, “This is Pīkoiaka‘alalā, the child who is skilled in shooting from Kaua‘i, and a husband of the daughter of our great lord Keawenuia‘umi.” Upon hearing this Hua‘ā hastened his stewards to bake food for the young chiefess’s husband.

When the food was ready, [they] had a small dinner party, and when the party was done, Hua‘ā shared his thoughts on their big enemy—the birds, until Hua‘ā was done speaking. Pīkoiaka‘alalā asked, “Where are these birds?” [Hua‘ā replied] “They are in their hiding place. It is not until midnight that they fly here to steal the food until the break of dawn, as for the long sweet potato vine that is heaped up in the middle, they do not eat it, and same for the taro.” When Hua‘ā was done speaking, Pīkoiaka‘alalā moved toward the pavement of the house entrance, the name of the house was **Halepua‘a**. However, that night, Pīkoiaka‘alalā noticed the birds, as they were crouching amongst the sweet potato of the people. Pīkoiaka‘alalā quickly hurried to his killing device, without being seen by Hua‘ā and all of the people. He [Pīkoiaka‘alalā] stealthily released his arrow and it struck **Kanekiki**, who dropped in the middle [of the sweet potato patch], and the same happened to **Koa‘e**. Both of them were left for dead in the same place. When Pīkoiaka‘alalā knew the two birds were dead, he went to fetch his arrow.

From **Halepua‘a** to where the birds and his arrow remained, was about one and a half miles; after returning from hunting for his arrow outside, Pīkoiaka‘alalā immediately went to sleep. While Pīkoiaka‘alalā was sleeping and dreaming, Hua‘ā peered through the door, with the thought that Pīkoiaka‘alalā would wake at midnight to observe the birds. However, the birds were already shot in the evening while they were talking, and all that was left to do was to lay the head on the *lauhala* pillow of **Puna**. When dawn broke, Pīkoiaka‘alalā said to Hua‘ā - the chief of **Puna**, “Come everyone to see the birds, they are both lying dead in the same place.”

Hua‘ā went to see the birds where Pīkoiaka‘alalā said they were. Hua‘ā went with a lot of men, and when they reached the place where Pīkoiaka‘alalā pointed them to, the bodies of the birds (**Kanekiki** and **Koa‘e**) were lying there. Those lands (**Kanekiki** and **Koa‘e**) are in **Puna**. When Hua‘ā returned to his house, Pīkoiaka‘alalā was sitting. He asked Hua‘ā, “How was your walk?” “What you said was true, what is my reward to you,” said Hua‘ā. Then, Pīkoiaka‘alalā said,

“If you are thinking of giving me a reward, I will take some swift runners, five would be sufficient.” “It is yours,” said Hua‘ā. Hua‘ā summoned five of his swiftest runners to prepare for a journey, and they departed; Pīkoiaka‘alalā with his five traveling companions from Hilo and five from **Puna**, amounted to ten traveling companions.

When they reached **Kapoho**, Pīkoiaka‘alalā saw a rat, and said to his companions, “That’s a big rat, the skin is cracked and peeling from the ‘awa, its teeth have become yellow, perhaps from eating the ‘awa.” “Where is it?” said the companions. “It is right in front of us,” The place where Pīkoiaka‘alalā saw the rat, was just inland of **Mālama**, **Kipukaka‘iole** is its name. The place was named for the back of the rats, which were cracked and peeling due to the ‘awa; and it is **Kipukaka‘iole** that is the name of this place ‘till this day.

When Pīkoiaka‘alalā said there was a rat in front of them, the companions from Hilo all agreed and believed, because they had seen for themselves what was done to them in the past. But, the companions from **Puna** all disagreed and those that had previously seen argued strongly with those who did not understand. Those that understood and knew, agreed that indeed there was a rat, and those that did not understand claimed he was a deceitful child. Because of the argument between his companions, [Pīkoiaka‘alalā] began to fulfill his work that he was so famous for, that is shooting his bow and arrow, and this quickly ended the arguing amongst his companions.

While Pīkoiaka‘alalā was preparing his bow, he said to his skeptics, “I will shoot the rat, and when I release my arrow, it is then that you folks will run swiftly to where my arrow falls; and you will see that the rat has died, then you folks will return my arrow upon your return.” Then, the men agreed. Pīkoiaka‘alalā shot his arrow, and the skeptics began to run. While the people swiftly ran below, the arrow flew above them. The distance from **Kapoho** all the way to **Mālama** is about ten miles.

The arrow fell where [Pīkoiaka‘alalā] said it would; the rat was hit, and shortly after, the chasers heard the loud wail from the voice of the rat. When the people arrived, the rat was indeed dead, the arrow stuck in his back. Not long after dealing with the big rat did they end their skepticism. The men chasing the rat returned toward the sea of **Mālama** where they met with Pīkoiaka‘alalā folks. Pīkoiaka‘alalā asked the men, “What did you folks see?” “What you said was true, that was indeed a rat, and its skin was cracked and peeling, and its teeth were yellow, and because the arrow struck its back, the back split, and we obtained your arrow, here it is.” Then they were done talking about the rat.

They all traveled until they reached **Pua‘akanu**. Pīkoiaka‘alalā saw some rats playing on the *pāhoehoe* lava of **Kīkala**, while his companions sat in the shade of the pandanus trees of **Pua‘akanu**. Pīkoiaka‘alalā called out, “Hey, there’s some big rats!” “Where?” answered the companions. “They are playing on that lava in front of us,” It is about six miles from **Pua‘akanu** to **Kīkala**. None of the men had a hint of skepticism when Pīkoiaka‘alalā spoke of the rats; the names of these rats were **‘iole** and **Lahoeka**, and these are the names of the lands that are from [Pua‘akanu] to **Kīkala** that are named after these rats. Pīkoiaka‘alalā did not shoot from **Pua‘akanu**, he waited until they reached **Kehena**. When they

reached there, the chiefs and the people of that place were sitting and resting on the hill of *mānienie* grass. They stopped there to rest.

While they were resting with the local people of that land, the famous child [Pīkoiaka‘alalā] said like so: “Just as we are indulging in rest, that is how the rats are indulging on the lava.” As soon as Pīkoiaka‘alalā spoke, the *konohiki* (the one in charge of the lands) of **Kehena** asked, “Where are these rats?” “They are playing on the lava, shaking.” And when the men looked to where the child was pointing, they did not see a thing. Because they did not see the rats, it caused a great argument between the visitors and the locals; Due to their huge argument, Pīkoiaka‘alalā said, “Let’s all try to join together, for you locals, we visitors have bones, and for us, you locals have bones, arguing is useless.” Because of Pīkoiaka‘alalā’s statement about bones, the native born, *konohiki* stood up and said, “Your wealth may be bones, our wealth is pigs, dogs, chickens, taro gardens, tracks of sweet potato, heaps of fine mats, sheets of bark cloth, loincloths, its these things that are associated with wealth on our side, and yours is bones.” “It is endless,” said Pīkoiaka‘alalā. The reason for him agreeing with this, is because he thought about the hunger of his traveling companions, therefore, he didn’t think to cause trouble. He only sought to protect the well-being of his traveling companions.

As Pīkoiaka‘alalā prepared to shoot his arrow, he said, “When I shoot, then two of your men will run with two from our side.” The local people of that area agreed; Pīkoiaka‘alalā released his arrow and saw the two rats, **‘Iole** and **Lahoeka** flutter as the arrow pierced them. When they arrived, the two rats were laying on the road, with the arrow stuck in their tails, and the men made their return with the rats and the arrow, until they reached the gathering of people. The locals saw that the words of the foreign child were true; and the *konohiki* was defeated by Pīkoiaka‘alalā. Then, the *konohiki* quickly summoned for an *umu* (an oven above ground) for pigs, dogs, chickens, and other kinds of food.

When the food that Pīkoiaka‘alalā won was cooked, they had a party. The locals partied with them too, as this was the custom. And when they were done filling their pits of enmity, that is their stomachs, they departed and vanished to the windward side of the mountain. When the peacefulness of evening fell, Pīkoiaka‘alalā encouraged his traveling companions. Let’s get going immediately, no one, not even the locals are holding us back to sleep. And since the *konohiki* did not try to hold us back to sleep, for that reason, Pīkoiaka‘alalā sent for one of his swift runners to run back to Hua‘ā to tell him about the inhospitable behavior of the *konohiki* of **Kehena**.

The runner ran back, while the rest of them continued on. The image of the man did not vanish, and the runner reached Hua‘ā. The runner told Hua‘ā the words that were told to him to report. And Hua‘ā the chief of **Puna** heard about the improper behavior of the *konohiki* of **Kehena**.

After obeying the words [of Pīkoiaka‘alalā], he quickly began to run again after Pīkoiaka‘alalā. After the runner left, Hua‘ā summoned his host of warriors to go in force and banish the improper *konohiki*; all of the warriors headed toward the sea. The runner arrived at the place where Pīkoiaka‘alalā struck the rats, **‘Iole** and **Lahoeka**, about three fourths of a mile from **Kehena**, and from **Halepua‘a**

about twenty or more miles. That man was exceedingly swift. Pīkoiaka‘alalā asked, “Did you reach Hua‘ā?” “Yes,” replied the runner. “And have you told him what I said to you?” “When I left, the warriors were preparing to leave.” When the runner was done speaking, they all continued until they reached **Kaimū**, where they slept. When dawn broke, Pīkoiaka‘alalā had no work to do there, however, they were greeted and entertained by the *konohiki* of that place. The warriors of Hua‘ā arrived at **Kehena** that night. The *konohiki* [of **Kehena**] was taken by force and banished, and the warriors of Hua‘ā returned after they finished their work that was summoned to them by their chief [Hua‘ā].

Pīkoiaka‘alalā folks left that day, and three days later, they arrived at **Pu‘umanawale‘a**. That place is in **Leapuki [Ka Lae ‘Apuki]**. As they relaxed in the breeze of the Pu‘ulena wind, they rested there because of their long journey. Pīkoiaka‘alalā saw another large rat descend upon the cliff of **Hōlei**, doing what this rat usually did, that is climbing to the uplands of **Pānau** everyday to steal food; there was not a piece of food from those lands that the rat did not consume. That is what was said by his traveling companions, as well as the locals of that area, because that is the place where the local people always went to gather water, being that **Pu‘umanawale‘a** is a source of fresh water.

When his traveling companions heard what Pīkoiaka‘alalā had said, they confirmed it; however, the local people did not believe it, they all said that he was a deceitful child. When Pīkoiaka‘alalā heard what they were saying, Pīkoiaka‘alalā replied, “That is the biggest of all the rats.” “Where is that rat you deceitful child?” said the local people. “It is climbing down the cliff, and the fur on his back is gray, and its are teeth curled into its back.” The local people strongly disagreed, “There is no big rat on the cliff.” Pīkoiaka‘alalā replied, “There are many eyes, however none of you see the rat.” [February 3, 1866:1]

While Pīkoiaka‘alalā was arguing with the local people of **Leapuki**, one of the locals spoke to a young chief from that area, whose name is Hoiu; Hoiu heard about the argument between the young foreigner and the local people, and traveled all the way to **Pu‘umanawale‘a**, the very place where the disputing parties gathered. This area was separated by space, so that the honorary ones could enter. Hoiu confronted Pīkoiaka‘alalā and asked him (Hoiu) “Are you really the child who speaks of the giant silver-backed rat?” “Yes, I am,” said Pīkoiaka‘alalā. “Where is it?” asked the young chief. “It is still resting between that cliff, it made its descent from above while we were arguing, and because this rat is satisfied from eating, it sleeps between the cliffs.”

When Pīkoiaka‘alalā spoke about what he had seen, the chiefly child responded in an angry boisterous manner, “Where are you from, you deceitful child? Have you seen a rat that belongs to this cliff? I am a local child of this place, however, I have never seen this giant silver-backed rat, who moves about with teeth twisted into its back. It is just a small rat; and it is he who eats the sweet potato of **Pānau**.” Then, Pīkoiaka‘alalā answered back, “You are all mistaken about the small rat that steals food, oh no, it is surely the big rat who is sleeping between the cliffs. He is the one that steals the food of **Pānau**; and for that reason he sleeps because he is satisfied from eating the food.” “Lies,” said the local child. “If it’s a real rat you’re talking about, then what’s your rationale?” “There are bones [fig. life] for the far reaching source and it continues to your bones,” stated

Pīkoiaka‘alalā. Your bones may perhaps be those of a deceitful foreign child, a big pig that belongs to the local child.” said Hoiu.

Because the traveling companions were hungry, Pīkoiaka‘alalā answered, “It is not reasonable that my bones perish, just those of the pig, some calabashes of poi, cooked sweet potato, dog, fish, and then my bones will perhaps adhere well to yours.” “It is everlasting” said Hoiu.

When this meeting was over, Pīkoiaka‘alalā said to Hoiu like so: “Four of your men, and four of my men, when I shoot the rat, that’s when the men will run and observe the rat. However, when I shoot the rat, it will not be pierced in the body, my prized arrow will pierce its snout.” When Pīkoiaka‘alalā said that the snout of the rat would be pierced, denial increasingly grew within the child Hoiu as he refuted, “There is no rat, and if there really is one, it wouldn’t get hit in the snout; and if the snout of the large rat that you are lying about is hit, then, ten of my men, along with myself, (Hoiu) shall die by way of being baked in the imu (an underground oven), and all of my riches will be for you folks. However, if it is a small rat, whose body you have pierced, then ten of your men including yourself will die by being scorched in the *imu*,” said Hoiu. Then Pīkoiaka‘alalā once again replied, “That large rat will be pierced in the snout, however, it will not immediately die there, it will flee with my prized arrow and die near the coast.” Due to these words of Pīkoiaka‘alalā, Hoiu immediately had his people prepare the *imu*.

When the *imu* was lit, Pīkoiaka‘alalā pulled his arrow out of his pack; and summoned his men who were to run in front of his arrow. When his men arrived at the base of the cliff of **Hōlei**, that’s when Pīkoiaka‘alalā shot his arrow. It immediately shot straight ahead and hit the rat. The following men who arrived first, saw the rat running, its size was huge, with the arrow stuck to its snout just as Pīkoiaka‘alalā had said. When the rat was running, the people along the coast were frightened, and drew back. Because the rat ran all the way to the coast, the men followed in pursuit. When the people caught their breath, the rat was laying down. The name of this rat was **‘Āpua**, whose phrase is “at the rat in Apua” (“ma ka iole i Apua”). The arrow was stuck in its snout; and they saw its unparalleled size, and the hair on its back that grew until it turned gray, with its teeth curled into its back. The people returned and reported what they had seen. When they arrived in front of the assembly at **Pu‘umanawale‘a**, they were asked, “What did you folks see?” They reported what they had witnessed in regards to the rat; and it was just like what Pīkoiaka‘alalā had said, with no opposition. The words of Pīkoiaka‘alalā were words of truth, and the first and last wager were immediately fulfilled. The first wager was for food; pigs and fish, and the last wager was that of Hoiu and his ten men, who were assembled in the *imu*, and killed. As for Hoiu, that place is on the coast of **Leapuki**, remaining there ‘till today, and the people of that place will tell the truth.

When the valuables that were won by them were cooked and ready to serve, they celebrated, and when the celebration was done, they got moving while the sun began to hide on the slope of Maunaloa, and the dark clouds began to rise on the cliff of **Hōlei**; they traveled along. While they were carefully walking, the advice of his wife was remembered, that is Keakalaulani. If this is how they would continue to walk, the amount of days that were agreed upon would quickly run

out, it would perhaps be better if the travelling was done quicker; what a good thought she had, therefore, he told his traveling companions, “It’s better if we quickly travel and spend the night in Ka’ū,” “We may not reach Ka’ū until the darkness of night,” replied the traveling companions. Pīkoiaka‘alalā answered, “You are all known as the swift runners of Keawenuia‘umi, what exactly is it that makes it impossible to reach Ka’ū this evening? I worry about this title because I have not been taught to be a runner, I was taught to shoot bow and arrow,” “Hurry up, lets all go,” said the traveling companions. They all traveled past ‘Āpua, and past Kūkala‘ula, until they arrived at Punalu‘u during nightfall. When they arrived at Punalu‘u, Kohaikalani was the chief of Ka’ū that was living there. The runners of Keawenuia‘umi, who were the traveling companions of Pīkoiaka‘alalā confronted Kohaikalani and said, “Keawenuia‘umi has commanded us to arrive here in Ka’ū, to tell you the son-in-law is here with us, the husband of the young chiefess,” “Where is he?” said Kohaikalani, “He is still outside of the platform,” Kohaikalani quickly ordered, “Fetch this husband of the chiefess and bring him here to the house,” The attendant of Kohaikalani immediately grabbed the hand of Pīkoiaka‘alalā and brought him into the house, along with his traveling companions. Kohaikalani saw Pīkoiaka‘alalā the foreigner; who was the husband of the chiefess, the Lord of them all.

Preparations were made for the visitors, as customary. When the feast was over, they all spent the night there. Pīkoiaka‘alalā awoke at dawn and began to awaken his companions, “Let’s go,” said Pīkoiaka‘alalā. They all awoke, feasted at breakfast, and when the feast was over, Kohaikalani asked, “Where is the son-in-law of my Lord going?” “to tour the island,” replied Pīkoiaka‘alalā. [February 10, 1866]

Pō‘ai and The Chiefs Who Went Around Hawai‘i

This *mo‘olelo* commemorates two Puna *ali‘i* and their journey to *māka‘ika‘i* (tour) Hawai‘i Island. Upon their return, they were welcomed by the *niu moe* (reclining coconut trees). This tradition involved bending young coconut trees down to grow crookedly, thus commemorating great events such as the return of these *ali‘i* (Pukui & Elbert 1986:267). Another way their journey was honored was by naming a child. Pō‘ai, which means “to make a circuit” was the name given to a young chiefess of Puna when these chiefs returned home. This *mo‘olelo* of Pō‘ai and the chiefs who went around Hawai‘i is given below.

Two young brothers, chiefs of **Puna**, had long planned to see their island of Hawai‘i. “Now is the time,” said one. “**Puna** is peaceful, its gardens flourish, and our overseers are men whom we can trust. Let us go now.”

They started, these two alone, and climbed the slope of **Kilauea**. “This is the very trail that **Kalapana** climbed.” One said, and they thought of the frail old man toiling up until turned back by rain. Their active legs carried them more quickly until they stood beside the fire pit.

Lava seethed and bubbled below, but they saw no old woman stirring the fire. Nor did they see the brother of Pele surfing on lava waves or her sisters stringing lei or dancing among the flames.

After a night's rest they started on the trail that led along the slopes of Mauna Loa. They crossed rough lava flows. On some, ferns and *lehua* trees were already taking root, but much was desolate and lonely.

At last they reached the beach. There were scattered villages and here they found warm welcome, for word had come already of the chiefs who traveled. The *imu* was filled with food, and the two were urged to stay a long time for rest and entertainment. Wrestling, boxing, *maika* rolling, and *hōlua* sledding! Young chiefs came from nearby districts to show their skill.

The two came in sight of Mauna Kea, now wearing its helmet of white. They tried to picture the ocean rolling over their great white island while the Waipi'o fisherman and his wife cowered together on Mauna Kea's top.

They talked of Pīkoi, who also had journeyed here, paddling swiftly with this young men, impatient to reach Waipi'o yet stopping to kill rats, birds, or lizards. They drank from the spring his arrow had found and chuckled to think of the surprise and joy of the villagers. In Kohala they saw the bay where Punia had tricked the sharks.

At last they reached Waipi'o, that lovely valley where Kiha had labored as a servant. Waipi'o was full of memories. There Hi'iaka had battled with the whirlwind. There Puapua had raced with the stolen *pū* whose sound had echoed from its walls. There Līloa had ruled, 'Umi had gathered his warriors, and the lovely daughter of Keawenui had welcomed Pīkoi on his return.

They walked through the forest of Pana'ewa, beautiful with vines, flowers, ferns, and flitting birds. It was hard to picture the fierce battle that had raged when the goddess fought the *mo'o* and the forest was a mass of tangled growth and evil beings.

They saw the crater on Hāla'i Hill where Woman-of-Fire had offered herself so that her people might have food. The chiefs give life to the land," the brothers said solemnly. "We too are chiefs."

Paliuli, where Lā'ie had once lived in a golden-feathered house – that land, alone, they did not see, for the gods have hidden it.

After two years they returned to **Puna** and paused to look at the stone figures still standing on its plain, those who laughed at Pele and felt her punishment. As they neared their own village, they heard a sudden shout. Someone had seen them. Soon an eager crowd gathered around two young men. Shouts of welcome filled the air. "You have been gone long, very long," the people said.

"Our journey has been good," the chiefs replied. "We have indeed seen this great and famous island. But coming home is best of all."

"Your coming is best for **Puna**," said an old kahuna solemnly, "for the chiefs give life to the land."

More days of feasting, games, and *hula*. Then the old *kahuna* said, “Come, O Heavenly Ones, for there is one thing more.” He led them out to where two coconut trees stood with ropes tied to them. The chiefs understood. One stepped forward and laid his hand on the trunk of a young coconut. Men pulled the ropes. Slowly the young tree bent, as if the chief himself had pushed it over, until it lay along the ground. There is was made fast. The other chief laid his hand upon the second tree as it also was bent over.

Then came a serving woman. “O Heavenly Ones,” she said, “your sister has a little child –a girl – and waits for you to name her.”

“Let her be called Chiefs-Who-Went-around-the-Island,” they answered, and so the child was named.

For many years the reclining coconut trees and the woman, Pō‘ai, Chiefs-Who-Went-around-the-Island, reminded people of this journey. Both trees and chiefess are gone now, but the story lives on, as do these other legends of Hawai‘i. (Pukui & Curtis 2010:227-230)

The Recumbent Coconuts of Kalapana

The following narrative also acknowledges the tradition of the *niu moe* within the district of Puna. This *mo‘olelo* follows:

Long ago two young chiefs of **Puna** named Hinawale and Owalauahi (-wahie) who were two cousins and intimates stole away incognito to tour the island. Returning after several months they joined a group of men who were testing their strength by attempting to bend to earth two full-grown coconut trees. Unrecognized they waited until all had failed, then they too made the attempt. Hinawale grasped one tree, Owalauahi the other, and with a strong downward pull laid them low. The people shouted applause. Upon discovering that the men were their own chiefs their joy knew no bounds. (Beckwith 1976:95)

‘Umi-a-Liloa Acquires Puna

Fornander refers to six *ali‘i ‘ai moku* (district chiefs) of Hawai‘i Island during the time of ‘Umi. These include: Wahilani of Kohala, Wanua of Hamakua; Kulukulu‘ā of Hilo; Hua‘ā of Puna; Imaikalani of Ka‘ū; and Hoe-a-Pae of Kona (Fornander & Grant 1996:106). The following excerpt written by Kamakau, refers to Hua‘ā and the means by which ‘Umi acquired the district of Puna.

Ke Au ‘Oko‘a, December 1, 1870:

O Hua-a ke‘lii o Puna, aka, ua lilo mai no o Puna ia Umi a me kana mau keiki hookama o Piimaiwaa, o Omaoakamau a me Koi na keiki koa, a mau alihikaua kaulana a he mau kuhina kaulana no ko Umialiloa noho aupuni ana no ke aupuni o Hawaii, a make o Huaa ia Piimaiwaa ma ke kahua kaua ma Kuolo i Keea, ua lilo o Puna ia Umialiloa (Kamakau 1870:1).

Hua-‘a was the chief of **Puna**, but **Puna** was seized by ‘Umi and his warrior adopted sons, Pi‘i-mai-wa‘a, ‘Oma‘o-kamau, and Ko‘i. These were noted war leaders and counselors during ‘Umi’s reign over the kingdom of Hawaii. Hua-‘a was killed by Pi‘i-mai-wa‘a on the battlefield of **Kuolo** in **Kea‘au**, and **Puna** became ‘Umi-a-Liloa’s. (Kamakau 1992:17-18)

Cordy (2000:211) refers to the *heiau* built by ‘Umi after he united Hawai‘i Island under his rule and writes:

Several other heiau scattered about the island are also associated with ‘Umi, said to have been built when he toured the island after coming to power. Dressed or cut-stone blocks were the hallmark of their construction. One of these *heiau* was **Kūki‘i heiau** in **Kula ahupua‘a** in **Puna**. It was built atop a cinder cone **Pu‘u Kūki‘i**.

‘Umi-a-Liloa Acquires Puna and Ka‘ū

‘Īmaikalani was a noted chief who ruled over the districts of Ka‘ū and Puna. Fornander states, “Some legends refer to difficulties between *Umi* and *Imaikalani*, the powerful blind chief of Kau and parts of Puna” (Fornander & Grant 1996:99). In Fornander’s version, ‘Umi sent his best warriors one after another to kill ‘Īmaikalani. They all struggled to defeat him and were forced to retreat. Fornander refers to the warrior named Omaokamau as the one who killed ‘Īmaikalani (Fornander & Thrum 1919:378-382). In another version provided by Kamakau, it was the warrior named Pi‘imaiwa‘a who secured the victory over ‘Īmaikalani. As a result of this defeat, ‘Umi acquired the lands that ‘Īmaikalani once ruled. Provided below is Kamakau’s written account (1992:18-19).

I-mai-ka-lani was the chief of Ka-‘u. He was blind, but noted for his strength and skill in battle. Many chiefs who had fought against him were destroyed. He was skilled in striking left or striking right, and when he thrust his spear (*pololū*) to the right or to the left it roared like thunder, flashed like lightning, and rumbled like an earthquake. When he struck behind him, a cloud of dust rose skyward as though in a whirlwind. ‘Umi-a-Liloa feared I-mai-ka-lani. He had pet ducks that told him in which direction a person approached, whether from in front, at the back, or on either side. All depended on the cries of the birds. In former days I-mai-ka-lani was not blind, and ‘Umi was never able to take Ka-‘u. The war lasted a long time. ‘Umi went by way of the mountains to stir up a fight with I-mai-ka-lani and the chiefs of Kona. He became famous as a chief who travelled through the mountains of Hawaii, and [its trails] became the routes by which he went to war. After I-mai-ka-lani became blind the fight between him and ‘Umi continued.

I-mai-ka-lani was never taken captive by ‘Umi, but Pi‘i-mai-wa‘a was crafty and studied the reason for his great strength and skill with the spear. Not a single thrust failed its mark, and with one blow [the victim] was torn from head to buttocks. Pi‘i-mai-wa‘a discovered the reason for the skill and fearlessness of this blind man. Ducks flew overhead and cried, and when he heard them, before, behind, or on either side, he declared, “A man approaches from the rear.” The man who guided him about answered, “Yes, there is a man.” Where is his club

(*lā‘au*)?” “In the front of him.” He recognized it as a club (*lā‘au hahau*). “Is he near?” “Yes.” The blind man smote with his club (*lā‘au pālau*), and the other was torn from head (*pūniu*) to buttocks (*‘ōlemu*). Whenever a bird cried, there was a man. “Where is his club?” I-mai-ka-lani asked. “On the right side.” A left stroke will get him.” When the other smote he missed, but when the blind man smote, [his opponent] was struck from head to abdomen. As Pi‘i-mai-wa‘a studied and knew every angle of I-mai-ka-lani’s strength and marvelous skill, he said to himself, “I shall kill you yet.” He went to kill the bird guards, the two men who led I-mai-ka-lani on each side, and the forty men who carried his weapons, long and short spears. I-mai-ka-lani thrust ten spears at a time, five with the right [hand] and five with the left. The spears flashed forth like lightening and no man was able to dodge the spears when he faced I-mai-ka-lani. All these men were destroyed by Pi‘i-mai-wa‘a, and the blind man was at a loss for the lack of helpers. Well could Pi‘i-mai-wa‘a say in a boast, “Death to him from Pi‘i-mai-wa‘a.” After I-mai-ka-lani’s death Ka-‘u became ‘Umi-a-Liloa’s.

‘Īmakakoloa, A Chief of Puna

‘Īmakakoloa was a chief of Puna during the time of Kalani‘ōpu‘u, and while in Kohala, Kalani‘ōpu‘u learned of ‘Īmakakoloa’s plans to rebel. Kamakau wrote about the events that took place between these chiefs in the Hawaiian Language newspaper, *Ka Nūpepa Kū‘oko‘a* (February 9, 1867). This article was later re-printed with diacritical marks in the book titled, *Ke Kumu Aupuni* (Kamakau 1996:58). Given below is an excerpt of this article.

‘O ‘Īmakakoloa ke ali‘i o Puna, ua kipi a‘ela ‘o ia; a ‘o nā waiwai o ke aupuni, ‘o ka pua‘a, ‘o ka ‘eleuli, ‘o ka mamaki, ‘o ka ‘ahu hīnalo me ka ‘ahu ‘ao, ‘o ka hulu ‘ō‘ō me ka mamo o Puna, ua hao a‘ela o ‘Īmakakoloa, ka pū ‘awa hiwa hīnalo o Puna (Kamakau 1996:58).

It was I-maka-koloa, a chief of **Puna**, who rebelled, I-maka-koloa the choice young ‘awa [favorite son] of **Puna**. He seized the valuable products of his district, which consisted of hogs, gray tapa cloth (*‘eleuli*), tapas made of *māmaki* bark, fine mats made of young pandanus blossoms (*‘ahu hīnalo*), mats made of young pandanus leaves (*‘ahu ‘ao*), and feathers of the *‘ō‘ō* and *mamo* birds of **Puna**. (Kamakau 1992:106)

The following is a description of events that led to the death of ‘Īmakakoloa. In addition, this narrative also provides information concerning the actions of Kamehameha I that angered many supporters of the chief Kīwala‘ō. Kamakau writes:

I ka noho ‘ana o Kalani‘ōpu‘u ma Kohala, ua ho‘oholo ihola nā ali‘i a me nā kuhina, e kauoha ‘ia ke keiki ho‘oilina o ke aupuni (Kalanikauikeaoulīkīwala‘ō), e ho‘i mai ‘o ia mai Maui mai. Ma Waipi‘o kahi i noho ai ‘o Kalani‘ōpu‘u, hiki mai ka ho‘oilina o ke aupuni.

I ka hiki ‘ana mai o Kalanikauikeaoulīkīwala‘ō, ho‘oholo ihola nā ali‘i a me nā kuhina, a me ka Mō‘ī Kalani‘ōpu‘u nō ho‘i. Aia a make ‘o Kalani‘ōpu‘u, a laila, e ili aku ke aupuni i ka ho‘oilina. ‘O ke kapu ‘ana o nā heiau a me ka palaoa pae, e ili aku nō ia mau hana ma luna o ka ho‘oilina o ke aupuni.

Ho'oholo ihola ho'i 'o Kalani'ōpu'u i ke kauoha no ke keiki a kona kaikaina, 'o ia ho'i 'o Kamehameha, 'o ke akua 'o Kūkā'ilimoku kona kauoha, a e noho aku nō ho'i ma lalo o Kīwala'ō, kona kaikua'ana.

Ho'āla a'ela ka hana 'ana o ka hale o ke akua, he haiau, 'o Moa'ula, aia nō ma Waipi'o. A pau ke kapu 'ana o ka heiau, 'o ka ho'omaka nō ia o Kalani'ōpu'u a me nā ali'i a me nā pū'ali kaua a me nā koa, ma luna o nā wa'a, a ma uka nō ho'i kekahi po'e, no ka hele i Hilo a me ke kaua ma **Puna** me 'Īmakakoloa, ke ali'i kipi o **Puna**.

I ka hiki 'ana o Kalani'ōpu'u ma Hilo One, ho'āla a'ela 'o ia i ka heiau o ke akua, aia ma Pu'ueo, 'o Kanowa ka inoa o ua heiau nei. A pau ke kapu 'ana, ho'i a'ela 'o Kalani'ōpu'u a noho ma 'Ohele i Waiākea, a 'o nā ali'i ho'i a me nā pūkaua, a me nā māmakakaua, a me nā pū'ali a me nā koa, hele akula lākou i ke kaua ma **Puna**; he kaua nui loa ho'i kēia me ke ali'i o **Puna**, me 'Īmakakoloa, ua lō'ihī ho'i ke kaua 'ana ma **Puna**, akā, ua he'e na'e ho'i 'o 'Īmakakoloa, a ua hūnā 'ia 'o ia e nā maka'āinana o **Puna**; ua 'ane'ane makahiki ka lō'ihī o ka manawa i hūnā 'ia ai.

No ka hūnā 'ia 'ana o 'Īmakakoloa, no laila, ha'alele ihola 'o Kalani'ōpu'u iā Hilo, a hele akula 'o ia i Ka'ū, a noho ihola ma Punalu'u, e kakali ana 'o ka loa'a a'e o 'Īmakakoloa, akā, 'a'ohe na'e he lohe 'ia o kona loa'a 'ana, no laila, ha'alele akula 'o Kalani'ōpu'u iā Punalu'u, hele maila 'o ia a noho ma Wai'ōhinu, a mai laila aku a noho ma Kamā'oa, ma Ka'ū Hema, a ho'āla a'ela iā Pakini i hale no ke akua, e kokoke ana i Kamā'oa, 'o ia ho'i he heiau, me ke kali nō na'e 'o ka lohe 'ia mai o ka loa'a 'ana o 'Īmakakoloa. 'O kekahi kanaka ho'i, he kahu nō no Kalani'ōpu'u, 'o Pūhili kona inoa, pane a'ela 'o ia, "A'ole nō e loa'a ana 'o 'Īmakakoloa, he ali'i kama'āina **Puna** no, akā, inā e 'ae mai ke ali'i, a laila, 'o wau nō a me ku'u akua ka mea i loa'a ai." Pane ihola 'o Kalani'ōpu'u, "Ō hele me kō akua."

'O ka hele nō ia o Pūhili a hiki i ka palena o **Puna** e pili ana me Ka'ū, 'o ia ho'i 'o '**Okī'okihao**, aia ma '**Āpua**; ho'omaka akula 'o Pūhili i ke puhi 'ana i kauhale i ke ahi; a nui loa ka minamina o nā kama'āina i kauhale a me ka waiwai, a 'o ka 'au wa'a, pau pū nō i ke ahi. A pau ho'i he ahupua'a mai ka uka a ke kai, ne'e aku ana he ahupua'a, a pēlā wale aku ka hana 'ana. Akā, i kekahi hana 'ana na'e a ua Pūhili nei, loa'a ihola 'o 'Īmakakoloa, he wahine kahu ka mea nāna i hūnā ma kekahi moku 'āina 'u'uku.

He kanaka hehelena u'i 'o 'Īmakakoloa, ua maika'i kona lauoho, ua loloa nō ho'i, ua hele a hāwale ma lalo o nā kapua'i wāwae, akā, no kona maka'u o 'ike 'ia 'o ia ma kona lauoho, no laila, ua lawe malū kēlā wahine e 'ako i ka lauoho ma luna o kekahi moku pōhaku e kū ana i loko o ke kai, a 'o ia ka mea i loa'a ai 'o 'Īmakakoloa.

I ka loa'a 'ana o 'Īmakakoloa, ua ho'opau 'o Pūhili i ka 'ai 'ana o kona akua i kauhale o **Puna**. A ua lawe 'ia 'o 'Īmakakoloa i Ka'ū, iō Kalani'ōpu'u lā.

I ka hiki 'ana o 'Īmakakoloa i Kamā'oa ma Ka'ū, ua mākaukau ho'i ka hale o ke akua e 'āmama 'ia aku ai na ke akua o ke ali'i nāna e hai iā 'Īmakakoloa, 'o ia

ho 'i 'o Kalanikauikeaoulīkīwala 'ō, ka ho 'oilina o ke aupuni. 'O kekahi po 'e ali 'i na 'e, 'ōhumu ihola lākou me ke kūkākūkā nui 'ana kekahi me kekahi, e 'ī ana, "Ilihune kā kākou ali 'i." Ho 'oholo like ihola lākou i kā lākou mau 'ōlelo malū, a kama 'ilio akula iā Kamehameha, "E ho 'olohe 'oe i kā mākou 'ōlelo: 'apōpō kō lā waiwai, 'apōpō kō lā 'ilihune; a ho 'olohe 'oe i ka 'ōlelo, a laila, he ali 'i waiwai 'oe ma kēia hope aku a kauoha i kāu po 'e mamo, akā, i ho 'okuli 'oe i ka 'ōlelo a 'o, a laila, he ali 'i 'ilihune 'oe."

Pane akula 'o Kamehameha, "E ha 'i mai ho 'i i ka 'ōlelo a 'o, a na 'u ia e nana i ka pono a me ka hewa." 'Ōlelo akula ho 'i ua ali 'i nei, "Ae, eia ka 'ōlelo a 'o; 'apōpō, i ka wā a kō kaikua 'ana e 'āmama ai i ke akua, a i hopu mua i ka pua 'a me ka mai 'a e 'āmama ai, a laila, e hopu 'oe i ke kanaka, iā 'Īmakakoloa, a 'āmama aku i ke akua. 'O ka lilo 'ana o ke kanaka iā 'oe, 'o ka lilo nō ia o ke aupuni. 'O ko 'u lā nō na 'e kēia e hele ai, 'a 'ole au e noho i ke kapu o ka heiau a ke ali 'i." 'Ōlelo akula 'o Kamehameha, "Ke 'ae aku nei au, akā, inā e make au, ua pono nō, a i ola au, 'o ia ihola, a na ke akua ho 'i au e kōkua mai."

I ka lā i kapu ai ke ali 'i Kīwala 'ō i ka heiau 'o Pākini, me ka waiho 'ākoako a nā 'ālana e kaumaha ai, me Kalani 'ōpu 'u, me nā ali 'i a me nā kuhina, nā pūkaua a me nā māmakakaua, nā pū 'ali kaua a me ke anaina o nā ali 'i a me nā maka 'āinana, kapu ihola ka 'aha 'awako 'o, a laila, hopu ihola 'o Kalanikauikeaoulīkīwala 'ō i ka pua 'a, a me ka pua 'a e 'āmama aku ai ma mua, a ma hope aku ke kanaka, a laila, ho 'olou aku iā Mānaiakalani, a laila, kaumaha aku.

E kaumaha ana nō 'o Kīwala 'ō i nā 'ālana mua, me ka pau 'ole o ka mōlia 'ana, a laila, e hopu iho ana 'o Kamehameha iā 'Īmakakoloa, a 'āmama akula i ke akua, a noa a 'ela (Kamakau 1996:59-61).

During the stay at Kohala it was arranged by the chiefs and counselors that the young heir to the rule over the land, Ka-lani-kau-i-ke-aouli-Kiwala'ō, should be sent for to Waipi'o. At his arrival it was agreed by the chiefs and counselors and by the ruling chief, Ka-lani-'opu'u, that at the death of Ka-lani-'opu'u the rule over the land should descend to this heir, his should be the right to perform the ritual to dedicate a heiau, and whatever ivory [of whale or walrus tusks] came ashore should belong to him. To the son of his younger brother, to Kamehameha, Ka-lani-'opu'u gave his god Ku-ka'ili-moku and commanded Kamehameha to live under Kiwala'ō, who belonged to the senior branch of the family.

The heiau of Moa'ula was erected in Waipi'o at this time, and after its dedication by Ka-lani-'opu'u the chief set out for Hilo with his chiefs, warriors, and fighting men, some by land and some by canoe, to subdue the rebellion of I-maka-koloa, the rebel chief of **Puna**. In Hilo Ka-lani-'opu'u built the heiau of Kanowa at Pu'ueo and after dedicating it he went to stay at 'Ohele in Waiakea while his army went to fight in **Puna**. The fight lasted a long time, but I-maka-koloa fled and for almost a year lay hidden by the people of **Puna**. Ka-lani-'opu'u meanwhile awaited his capture. Leaving Hilo, he went to Ka-'u and stayed first at Punalu'u, then Waiohinu, then at Kama'oa in the southern part of Ka-'u, and erected a heiau called Pakini, or Halau-wailua, near Kama'oa. A certain man, a *kahu* of the chief named Puhili, said, "I-maka-koloa is being hidden by the

natives of **Puna**, but if the chief consents I will go with my god and find him.” “Go with your god,” said the chief. Puhili went until he came to the boundary where **Puna** adjoins Ka‘-u, to ‘**Oki‘okiaho** in ‘**Apua**, and began to fire the villages. Great was the sorrow of the villagers over the loss of their property and their canoes by fire. When one district (*ahupua‘a*) had been burnt out from upland to sea he moved on to the next. This was Puhili’s course of action, and thus it was that he found I-maka-koloa where he was being hidden by a woman *kahu* on a little islet of the sea. A man of handsome features was this I-maka-koloa. He had a fine head of hair so long that it reached to the soles of his feet. Fearing lest he be recognized by his hair he had gone secretly to this woman *kahu*, on a rock islet standing off in the sea, to have his hair cut, and that was how he came to be found. As soon as he was found, Puhili stopped his god from eating up the houses of **Puna**.

I-maka-koloa was taken to Ka-lani-‘opu‘u in Ka-‘u to be placed on the altar as an offering to the god, and Kiwala‘o was the one for whom the house of the god had been made ready that he might perform the offering. Some of the chiefs muttered one to another, “Our chief [Kamehameha] is left destitute!” and, making an end of secrecy, one talked with Kamehameha saying, “Listen to our counsel if you would have wealth rather than poverty. If you will listen to us you may become a chief with wealth for yourself and your descendants, but if you neglect our counsel you will be destitute.” Kamehameha said, “Tell me what you advise, and I will consider whether your counsel is good or bad.” Said the chief, “This is our counsel: when your cousin is making the offering to the god and has first taken up the hog and the banana to offer, do you seize I-maka-koloa and offer him to the god. The man will be your offering, and the rule over the land will then be yours. I will not be present at the dedication of the heiau.” Kamehameha answered, “I consent. If I die it is well, and if I live so let it be, and may the god help me.” The day came when the chief, Kiwala‘o, was to perform the tabu for the heiau of Pakini by presenting the offerings. There were present Ka-lani-‘opu‘u, the chiefs and *kuhina* [the executive officers, highest officers next the ruler], the war leaders (*pūkaua*) and bearers of supplies (*māmakakaua*), the warriors, the retinue of the chiefs (*anaina*), and the commoners. The ceremony began at which the heiau was made tabu. Then Kiwala‘o grasped the hog to offer it first and afterward the man. He hooked on Manaia-ka-lani, then made the offering. Before he had ended offering the first sacrifices, Kamehameha grasped the body of I-maka-koloa and offered it up to the god, and the freeing of the tabu for the heiau was completed (Kamakau 1992:107-109).

Cordy (2000:296) refers to the outcome of Kamehameha’s actions and writes:

Kamehameha - at the advice of some chiefs - seized ‘Imakakoloa’s body and offered it to the god Kū. This act violated protocol, and it appears that many chiefs wanted to slay Kamehameha. But Kalani‘ōpu‘u ordered his nephew to return to his Kohala lands of Hālawa ahupua‘a, and Kamehameha departed with his brother Kala‘imamahū and the god Kūkā‘ilimoku.

In the footnotes of *Ruling Chief of Hawai‘i* (Kamakau 1992:109), it is written:

In Ka-‘u an old Hawaiian told Pukui that when ‘Ī-maka-koloa was brought to be sacrificed an old *kahu* of his who pitied him shouted out to the chiefs, “That is not ‘Ī (makakoloa) the chief, that is ‘Ī his servant; I can point out to you ‘Ī the chief!” So a young *kahu*, a relative who resembled him, was sacrificed in his place. Their descendants in Ka-‘u still bear the name of ‘Ī-kauwa’, (‘Ī-the-servant) and ‘Ī-pa‘a-puka (‘Ī who-closed-the-door [of death]).

The Fight of Kaleleiki and the Law of the Splintered Paddle

The following article was published in the Hawaiian language newspaper, *Ka Nūpepa Kū‘oko‘a* and later re-printed with diacritical marks in the book titled, *Ke Kumu Aupuni* (Kamakau 1996:77). This article refers to Kamehameha I and the expedition that brought him to the district of Puna. Below are the words of Kamakau regarding the events that led to the fight of Kaleleiki and the law of the splintered paddle.

Ka Nūpepa Kū‘oko‘a, March 9, 1867:

*‘O Keawema‘uhili na‘e a me Keōuakū‘ahu‘ula, ua hui pū lāua, a ua mākaukau i nā koa no ke kauhā ‘ana me ko Kamehameha mau ali‘i a me nā koa, no laila, ‘a‘ole wahi e noho ai ‘o Kamehameha mā ma Hilo, no laila, ho‘i maila ‘o Kamehameha mā a noho ma Laupāhoehoe, i Hilo Palikū, a noho ihola ‘o Kamehameha a me kona po‘e ali‘i a me nā koa ma laila. Ma hope iho, holo malū akula ‘o Kamehameha a me Kahakui me nā hoe wa‘a ma ke ‘ano kauhā pōā, me ka lohe ‘ole o nā ali‘i a me nā koa. Holo akula ‘o ia ma **Pāpa‘i**, ma **Kea‘au** i **Puna**, e lawai‘a ana kekahi po‘e kānaka a me kekahi mau wāhine, a he wahi keiki ‘u‘uku i ke kua o kekahi kanaka. A ‘ike ‘o Kamehameha i ua po‘e lawai‘a nei e mākaukau ana e ho‘i, ‘o kona lele akula nō ia mai luna aku o kona wa‘a, me ka mana‘o e ki‘i i kēlā po‘e kānaka e pepehi, akā, ua holo kekahi po‘e me nā wāhine, a koe iho ‘elua kanaka i hakakā me Kamehameha, akā, ua lu‘ulu‘u kekahi kanaka i ke keiki ma ke kua. ‘O ka hakakā ihola nō ia; e poholo iho ana ka wāwae o Kamehameha i ka māwae pōhaku, a pa‘a loa ihola, no laila, hahau ‘ia ihola kona po‘o i ka hoe a ka po‘e lawai‘a. A no ka lu‘ulu‘u o ua kānaka lawai‘a nei i ke keiki, a no ka ‘ike ‘ole ‘ia nō ho‘i kekahi ‘o Kamehameha kēia e hakakā pū nei, inā ua make loa ‘o Kamehameha i ia lā. Ua kapa ‘ia ka inoa o ia hakakā ‘ana ‘o Kaleleiki. ‘O ka pā ‘ana ho‘i o ke po‘o o Kamehameha i ka hoe, ua lilo ia i Kānāwai Māmalahoa no Kamehameha (Kamakau 1996:77).*

Since Keawe-ma‘u-hili and Keoua had joined forces against Kamehameha there was no place for him in Hilo; he camped his men at Laupāhoehoe in Hilo Paliku (Hilo by the cliff). Afterwards Kamehameha and Ka-haku‘i paddled to **Pāpa‘i** and on to **Kea‘au** in **Puna** where some men and women were fishing, and a little child sat on the back of one of the men. Seeing them about to go away, Kamehameha leaped from his canoe intending to catch and kill the men, but they all escaped with the women except two men who stayed to protect the man with the child. During the struggle Kamehameha caught his foot in a crevice of the rock and was stuck fast; and the fishermen beat him over the head with a paddle. Had it not been that one of the men was hampered with the child and their ignorance that this was Kamehameha with whom they were struggling, Kamehameha would have been killed that day. This quarrel was named Ka-lele-

iki, and from the striking of Kamehameha's head with a paddle came the law of Mamala-hoe (Broken paddle) for Kamehameha (Kamakau 1992:125-126).

Ka Nūpepa Kū'oko'a on July 6, 1867:

...i ka manawa i lilo holo'oko'a ai 'o ke aupuni o Hawai'i iā ia, a 'o ia ho'okahi nō ho'i ka mō'i o Hawai'i, ua ki'i 'ia ka po'e nāna i hahau i kona po'o i ka hoe a nāhoahoa. Ua alaka'i 'ia mai nā keiki, nā wāhine a me nā kāne i mua ona, a eia ka 'ōlelo a nā ali'i a pau, "E hailuku 'ia lākou a pau i ka pōhaku, a pēlā lākou e make ai." Pane mai ho'i 'o Kamehameha, "He Māmalahoa Kānāwai, 'a'ole ali'i, 'a'ole 'ilāmuku e lawe i ko lākou ola, a 'o wau ke hailuku 'ia i ka pōhaku e pono ai," wahi a Kamehameha (Kamakau 1996:159).

At the time when he became ruling chief over all Hawaii, there were brought to him those men who had struck him with a paddle, together with their wives and children. All the chiefs said, "Let them be stoned to death!" Kamehameha replied, "The law of the broken paddle is declared: no chief or officer of execution is to take their lives. It is I who should by right be stoned." What a wonderful thing for a chief thus to mete out justice toward those who had injured him! (Kamakau 1992:181).

There are many versions of Kamehameha's proclamation concerning *Ke Kānāwai o Māmalahoa*, or the law of the splintered paddle. One version of this law written by S.M. Kamakau in *Ka Nūpepa Kū'oko'a* on November 23, 1867 is provided below.

Ua kau 'o Kamehameha i ke kānāwai, "E hele ka 'elemakule a me ka luahine a me ke keiki a moe i ke alanui" (Kamakau 1996:222).

Kamehameha placed the law, "The old men, women, and children shall travel in peace and sleep [in safety] on the trails."

Another account of the *kānāwai* (law) was told by an *kupuna* (elder) of Hilo and recorded on June 9, 1932. This version is given below.

E na kanaka e malama oukou i ke Akua a e malama hoi i kanaka nui, a me kanaka iki, e hele ka elemakule, ka luahine, a me ke kama, a moe i ke ala, aohe mea nana e hoopilikia. Hewa no, make!

O people, respect the Gods, respect also the important man and the little man, and the aged men and aged women, and the children sleep along the trailside, and not be bothered by anyone. Failure to do so is death! (Barrère, 1959)

Ke Kānāwai o Māmalahoa provided a means of protection for the Hawaiian community. Kamakau (1992:312) refers to this law and writes:

In Kamehameha's day the god Ku-ka'ili-moku and the lands sacred to this god were places of refuge; anyone who had forfeited his life might be saved if he ran and entered one of these lands sacred to the god; no blood could be shed there. Any violator of any law whatsoever who had been sentenced to die, if he could run and enter one of these lands would be saved; his troubles would be over. So

the Mamalahoa law was the means of saving many lives during a time of slaughter; when this law was proclaimed, no more slaughter was allowed; all were saved.

Help Yourself

The following *mo'olelo* was told by Mary Kawena Pukui and published in the book titled, *Tales of the Menehune* (Pukui & Curtis 1985:78). This *mo'olelo* perpetuates the Hawaiian proverb, “*kōkua aku, kōkua mai*” (help and be helped). In addition, it also brings attention to the importance of maintaining the resources of both land and sea. This *mo'olelo* is given below.

Keoha, a canoe-maker of Hilo, had come to **Puna**. The trail was long, the day hot, and now Keoha stood looking longingly at a bunch of coconuts in a treetop.

“Aloha, stranger! What are you looking at?” A fisherman had stopped beside Keoha.

“Those coconuts. Their cool milk would moisten my dry throat, and the meat of a tender young nut would taste very good.”

“Come with me,” the **Puna** fisherman invited. “I have many coconuts and shall give you all you want. Come to my home.”

Keoha went gladly. The walk was long, but the Hilo man thought eagerly of the good food and drink that he could find. He hurried.

At last the fisherman stopped beside tall coco palms. “There are coconuts, stranger,” he said smiling. “Help yourself.”

There they were indeed! High in the treetops! Years ago Keoha could have climbed one of those coco palms, but not now. “Thank you. I am no longer thirsty,” he answered as he walked away.

A little later as he passed a group of houses the canoe-maker was called in. Boys climbed trees for coconuts, and Keoha and his hosts ate tender young nuts and drank cool milk. The stranger was refreshed and very grateful. These men became his friends.

The canoe-maker, however, did not forget the fisherman. “Someday I shall repay his kindness,” he told himself.

Years later his chance came. The **Puna** man walked into the shed where Keoha was polishing a canoe. “My small fishing canoe was injured in a storm,” he said. “I need another. Have you one?”

Keoha looked around. “Not here. These are all promised,” he answered, speaking truly. “But there is one in the forest. Meet me early tomorrow, and I shall show you.”

Carrying food and water the two took the trail. The day grew hot, but they climbed on for the fisherman was eager to see his new canoe.

At last they reached the part of the forest where tall *koa* trees grew – the strong trees whose trunks can stand the beat of waves and scratch of pebbles. Keoha looked from one to another of the great trees as he said, “Here are many canoes. Help yourself.” (Pukui & Curtis 1985:78-79)

NĀ MELE O PUNA

“Ua ‘ane‘ane nalowale paha nā mele o ka wā kahiko, kāwalawala loa nā kānaka i ‘ike. He mea minamina ia, no ka mea, ma ua mau mele lā, ua maopopo ke ‘ano o ka noho ‘ana o kānaka i ka wā mamua loa aku nei, a ‘o ka mo‘o‘olelo o ka ‘āina kekahi.”

Traditional Hawaiian songs may soon be forgotten; they are not seen enough by people. This is very unfortunate, because, it is within these compositions, that the lives of those who lived long before are understood, as well as the stories of the land.

-Ka Hae Hawai‘i, March 21, 1860.

The word *mele* refers to a song, poem, or chant of any kind (Elbert & Pukui 1959). From generation to generation, *mele* continue to perpetuate Hawaiian language, culture, and *mo‘olelo*. *Mele* are often given as *ho‘okupu* (offerings) to honor the *kini akua* (multitudes of gods), to commemorate place visits and events, to celebrate life and death, and to share the stories of the people. Pukui (1949) explains how the environment is integrated in *mele* composition and writes, “Hawaiians were lovers of poetry and keen observers of nature. Every phase of nature was noted and expressions of this love and observation woven into poems of praise, of satire, of resentment, of love and of celebration for any occasion that may arise.” In the translation of *mele*, a double meaning is often created through the use of *kaona* (hidden meaning). The double meaning consists of the literal translation and secondly, a translation of metaphor and analogy.

The *kaona* in *mele* can sometimes be so veiled that only the composer may know it. Other times, the *kaona* can be recognized by anyone who is familiar with the figurative speech of old Hawai‘i (Pukui 1949:247). The compositions presented below are as they appear in their written sources. These *mele* take us on a journey through Puna’s past, shining light on the people, places, traditions and *mo‘olelo* that are special to this *moku*.

Mai Kahiki Ka Wahine ‘O Pele

The following is a *mele huaka‘i* (migration song) that was collected from Kanahale’s book titled, *Ka Honua Ola* (2011:36-37). Kanahale refers to the nature of *mele huaka‘i* and writes, “These *mele huaka‘i* inform the reader of the movement of lava from one homeland to the next” (2011:35). The following *mele* commemorates the journey of Pele from her homeland in Kahiki to Puna on Hawai‘i Island.

*Mai Kahiki ka wahine ‘o Pele
Mai ka ‘āina i Polapola
Mai ka pūnohu ‘ula a Kāne
Mai ke ao lapalapa i ka lani
Mai ka ‘ōpua lapa i Kahiki
Lapakū i Hawai‘i ka wahine ‘o Pele
Kālai i ka wa‘a Honuaiākea
Kou wa‘a, e Kamohoali‘i*

From Kahiki came the female Pele
From the land at Borabora
From the red rising mist of Kāne
From the agitating clouds in the sky
From the churning clouds of Kahiki
The woman Pele explodes to Hawai‘i
The vessel Honuaiākea is carved
It is by your vessel, Kamohoali‘i

*I 'apoa ka moku i pa 'a
Ua hoa ka wa 'a o ke akua
Ka wa 'a o Kānekālahonua
Holo mai ke au, 'a 'e 'a 'e Pelehonuamea*

*'A 'e 'a 'e ka lani, 'aipuni ai ka moku
'A 'e 'a 'e kini o ke akua
Noho a 'e 'o Mālau
Ua kā 'ia ka liu o ka wa 'a
Iā wai ka hope, ka uli o ka wa 'a, e nā hoali 'i?*

*Iā Pelehonuamea
'A 'e 'a 'e kai hoe o luna o ka wa 'a
'O Kū mā, lāua 'o Lono
Noho i ka honua 'āina
Kau aku i ho 'olewa moku
Hi 'iaka, no 'iau, he akua
Kū a 'e, hele a noho i ka hale o Pele
Huahua 'i Kahiki, lapa uila
E Pele, e hua 'i ē!*

This island will be gotten and secured
The vessel of the god is completed
The vessel of Kānekālahonua
The current to sail has arrived,
Pelehonuamea gets aboard
Chiefly ones board to circle the island
Followed by the many other gods
Mālau sits
The bilge of the vessel is emptied
Who will steer, who is skilled, O royal
companions?
Pelehonuamea is suited for the task
The steering paddle is fitted on the vessel
Kū and Lono
Will inhabit the land
Rising and raising the island
Hi 'iaka, a goddess of wisdom
Rise, go, and dwell in the house of Pele
Kahiki erupts, lightning flashes
Push forward, Pele!

Ke Ha 'a Lā Puna I Ka Makani

The following chant is a *mele hula* (song accompanied by dance) and is known to be the first recorded *hula* in the saga of Pele and Hi 'iaka. Kanahēle refers to this *mele* and writes, "The district is Puna, Hawai 'i, the ahupua 'a is Kea 'au, the 'ili is Hā 'ena, the beach is Nanahuki, the character is Hōpoe, and this is the birthplace of hula, or ha 'a, as it is known in this chant" (2011:112). Hi 'iakaikapoliopole performed this *mele hula* for her elder sister Pelehonuamea.

*Ke ha 'a lā Puna i ka makani
Ha 'a ka ulu hala i Kea 'au
Ha 'a Hā 'ena me Hōpoe
Ha 'a ka wahine
'Ami i kai o Nanahuki
Hula le 'a wale
I kai o Nanahuki
'O Puna kai kuwā i ka hala
Pae ka leo o ke kai
Ke lū lū i nā pua lehua
Nānā i kai o Hōpoe
Ka wahine 'ami i kai o Nanahuki
Hula le 'a wale
I kai o Nanahuki.*

Puna dances in the wind
Moving through the hala grove at Kea 'au
Hā 'ena and Hōpoe dance
The female sways
Revolving at the sea of Nanahuki
Perfectly pleasing, the dancing
At the sea of Nanahuki
Puna's sea resounds in the hala
The voice of the sea is carried
The lehua blossoms are scattered
Look toward the sea of Hōpoe
The dancing woman at the sea of Nanahuki
Perfectly pleasing, the dancing
At the sea of Nanahuki.

O Puna Kai Kuwā I Ka Hala

Pele enjoyed the first *mele hula* that Hi‘iaka performed and asked if she would do another. Hi‘iaka then chanted, “*O Puna kai kuwā i ka hala*” (Maly 1999:19).

O Puna kai kuwā i ka hala

The sea of Puna is heard rumbling through
the pandanus groves

Pae ka leo o ke kai

The voice of the ocean moves inland

Ke lū la i nā pua lehua

Scattering the blossoms of the lehua

Nānā i kai o Hōpoe

Look to the shore of Hōpoe

Ka wahine ‘ami i kai

The woman who dances at the sea

O Nānāhuki la

Of Nānāhuki

Hula le ‘a wale

She dances joyfully

I kai o Nānāhuki e!

At the shore of Nānāhuki!

He Kānaena No Pele, E Pele Weliweli Ē

The following is a *mele kānaena* (prayer chant) for the goddess Pelehonua and a *mele komo* (entrance chant). There are specific offerings for Pele that are listed in this chant. Kanahale describes these offerings and writes, “‘Ōhelo berries, which grow in close proximity to the crater, are considered the *kinolau*, or physical form, of Ka‘ōhelo, a younger sibling of Pele. The black pig, an excellent offering for a god, symbolizes fertility and life coming from *pō*. The black rooster is a symbol of awakening from *pō*, that place in the fertile earth where Pele lies in wait to exit” (2011:64). This *mele* is given below (Kanahale 2011:62-63).

E Pele weliweli ē

Pele, revered one

Eia ka ‘ālana

Here is the offering

Eia nā hua li ‘ili ‘i o ka ‘ōhelo

Here are the small ‘ōhelo fruits

Eia ka mohair, he pua ‘a ‘ele ‘ele

Here is the formal offering, a black pig

Eia ka moa kāne ‘ele ‘ele

Here is the black rooster

E ala, e Pele ē

Arise, Pele

E lawe mai kou kapa wahine

Bring your female mantle

Aia lā ke kamaha ‘o, ‘o kona alo ē

Behold, her presence is astonishing

Pi ‘i ana ‘o Pele i ka lua ahi ē

Pele is rising from the fiery pit

Pi ‘i ana ‘o Pele i ka lua ahi ē

Pele is rising from the fiery pit

Hō ‘ike maila i kēia wā i kona pua lapalapa

Displaying now her dancing flames

A ulu, e Pele

Grow and inspire, Pele

‘Āmama, ua noa.

It has ended, it is free.

E Nihi Ka Hele I Ka Uka O Puna

Kanahale refers to the following chant and writes, “This chant is a caution as to how one should conduct oneself when on an errand of importance. This cultural practice applies to other tasks such as fetching medicinal herbs, delivering messages, and going to

ceremonies. The caution is intended for all tasks important enough to warrant complete focus and concentration” (2011:58-61). When Hi‘iaka traveled through the uplands of Puna, she met Wahine‘ōma‘o, who then became one of her traveling companions. According to Mr. Sol L. Peleiholani, Wahine‘ōma‘o is “a daughter of Kūki‘i (m) and Ulupāna‘ina‘i (f). Kūki‘i is from Puna and Ulupāna‘ina‘i from Pi‘ihonua. This Wahine‘ōma‘o is a chiefess from inland at ‘Ōla‘a, and Kapu‘euhi is the place where her home stood in that district” (Ho‘oulumāhie & Nogelmeier 2006:50). The following was chanted as Wahine‘ōma‘o approached Kīlauea to give an offering of a black pig to Pele.

<i>E nihi ka hele i ka uka o Puna</i>	Walk carefully in the upland trail of Puna
<i>Mai ‘ako i ka pua</i>	Don’t pick the flowers
<i>O lilo i ke ala o ka hewahewa</i>	Or the path will become unrecognizable
<i>Ua hūnā ‘ia ke kino o ka pōhaku</i>	The tricky ones are hidden in the rocks
<i>‘O ka pua na ‘e ke ahu nei i ke alanui</i>	The thriving flowers distract from the path
<i>Alanui hele o ka unu kupukupu ē</i>	The roadway full of growth covers the stones
<i>Ka uila</i>	If there is a sudden accident
<i>A kaunu nō anei ‘oe ‘o ke aloha lā</i>	Would you not be yearning for compassion
<i>Hele a‘e a komo i ka hale o Pele</i>	Go forward and enter the house of Pele
<i>Ua huahua ‘i i Kahiki, lapa uila</i>	She bursts forth to Kahiki, lightning flashing
<i>Pele ē, hua ‘ina ho ‘i!</i>	Ever growing Pele!

Mele No Pele, Hele Ho‘i Ke Ala Ma Uka O Ka‘ū

The following is a *mele komo* (entrance chant) that was collected from an interview of Clinton Kanahale in 1970. Kanahale refers to this *mele komo* stating, “Without the benefit of a material gift, the voice -and awareness of the boundaries of Pele -is an appropriate offering. Because the chant is a gift, not a prayer chant, there is no need to address any particular deity or release the deity with the official closing phrase ‘āmama, ua noa” (2011:69). This *mele komo* describes the volcanic activity within the four boundaries of Pelehonua. These boundaries include: the upland trails of Ka‘ū, the lowland trails of Puna, the southern boundary in Ka‘ū known as Kūkalā‘ula cone, and Pu‘ulena cone in Puna. This *mele komo* is as follows (Kanahale 2011:66-67):

<i>Hele ho ‘i ke ala ma uka o Ka‘ū</i>	I traveled the uplands of Ka‘ū
<i>Hele ho ‘i ke ala ma kai o Puna</i>	And traveled the lowland trails of Puna
<i>‘O ka ma ‘ema ‘e lā o ka pua lē‘ī</i>	I am pure as an attractive flower
<i>Aloha ka pi ‘ina i Kūkalā‘ula</i>	Enjoying the climb at Kūkalā‘ula
<i>Ho ‘opuka akula ka Pu‘ulena</i>	Pu‘ulena emerges
<i>‘Āina a ke akua i noho ai</i>	Residence of the god
<i>Ka‘u makana ia ‘o ka leo</i>	My only gift is the voice
<i>‘O ka leo wale nō ē.</i>	Only the voice.

‘O Pele Lā Ko‘u Akua

The following chant is a *mele ‘awa* (chant associated with an ‘awa ceremony). This chant was recited by the *kupua* (demi-god) Kauhi-ke-i-maka-o-ka-lani during an ‘awa

ceremony with Hi‘iakaikapoliopole (Emerson 2005:93). This chant explores the female lineage of the Pele clan, as well as the boundaries of her residence (Kanahele 2011:88-89).

<i>‘O Pele lā ko ‘u akua</i>	Pele is my god
<i>Miha ka lani, miha ka honua</i>	Silence in the sky, silence on the earth
<i>‘Awa i kū, ‘awa i lani kēia ‘awa</i>	‘Awa is presented, this consecrated ‘awa
<i>Ka ‘awa nei o Hi ‘iaka</i>	This ‘awa is of Hi ‘iaka
<i>I kū ai, kū i Mauiola</i>	It was presented to Mauiola
<i>I Mauiola, he ‘awa kaulu ola ē</i>	The ‘awa inspires good health, long life
<i>No nā wāhine, e kapukapu kai ka ‘awa</i>	For the women, salt is sprinkled to drink the ‘awa
<i>E Pelehonuamea</i>	Pelehonuamea
<i>E kala, e Haumea wahine</i>	My apologies to you, Haumea
<i>‘O ka wahine i Kīlauea</i>	The woman of Kīlauea
<i>Nāna i ‘ai a hohonu ka lua</i>	She consumes until the pit is deep
<i>‘O Ma ‘ū, wahine a Makali ‘i</i>	Ma ‘ū, woman of Makali ‘i is present
<i>‘Olua wahine ka lani</i>	You are two women of nobility
<i>‘O Kuku ‘ena o nā wāhine</i>	Of the women, Kuku ‘ena
<i>I ka inu hana ‘awa</i>	Is the one who prepares the ‘awa
<i>Kānaenae a ke akua malihini</i>	A supplication to the unusual god
<i>Hele ho ‘i ke ala ma uka o Ka ‘ū</i>	Who travels the upland trails of Ka ‘ū
<i>Hele ho ‘i ke ala ma kai o Puna</i>	Who travels the lowland trails of Puna
<i>I Kama ‘ama ‘a, i ka pua lē ‘ī</i>	At Kama ‘ama ‘a, among the flowers that attract
<i>E loa ‘a ka ‘awa i ‘Āpua</i>	The ‘awa will be found at ‘Āpua
<i>Ka pi ‘ina a Kūkalā ‘ula</i>	Ascending the slope of Kūkalā ‘ula
<i>Ho ‘opuka akula i kai o Pu ‘ulena</i>	Emerging toward the sea at Pu ‘ulena
<i>‘Āina a ke akua i noho ai.</i>	The land of the god’s residence.

Kū Malolo Iā Puna I Ka ‘Awa

The following *oli pule* (prayer chant) is utilized as an ‘awa chant dedicated to Pele, Hi‘iaka, and Laka. Presented below is this *oli* that was shared by Peter Pakele Sr. of Waiākea, Hilo, Hawai‘i (Pukui 1995:6-7).

<i>Kū malolo iā Puna i ka ‘awa</i>	Thriftily grows the ‘awa in Puna
<i>He ‘awa inu kahela ‘ia na Kalani</i>	The ‘awa, a tasty drink for the chiefess
<i>Ua līhau a ‘ela i ka lehua makanoe</i>	Please is she with the stunted lehua
<i>Hi ‘olani kēlā moe i Wahinekapu</i>	And falls asleep at Wahinekapu
<i>Kau i keha a ke kanaka kia manu ē, he anu</i>	She pillows her head and sleeps like a bird catcher, who is cold
<i>‘O ke kanaka paha ia i make i ke anu</i>	Perhaps like a man benumbed with cold
<i>Ke ha ‘i maila i kāna ko ‘eko ‘e</i>	Who complains of the damp and chill
<i>E uhi iho ‘oe i wahi kappa no ‘u i mehana au</i>	Cover her over with a covering, to warm her
<i>E Kalani nō, e ho ‘ōla, ola nā ma ‘i ‘āpau</i>	O Heavenly One, grant healing, heal all kinds of diseases

E Kāneikawaiola

The following is a *mele* ‘awa that was collected from Solomon Lehuanui Kalaniomaiheilu Peleiholani and stored in the Bishop Museum Archives. Kanahele explains this *mele* ‘awa, “The male deities Kāne and Kanaloa are closely associated with ‘awa. Many of the prayers for ‘awa recognize either or both of these gods. For example, fresh water is the manifestation of Kāne, and when preparing the ‘awa, Kāneikawaiola, or Kāne of the living water, is summoned” (2011:84). This *mele* ‘awa is presented below (Kanahele 2011:96-97).

E Kāneikawaiola

Eia ka ‘awa, e Kāne

He ‘awa lani wale nō

He ‘āina a ke kama iki

Inu aku i ka ‘awa lau lena

I ka ‘awa o Keahialaka

Hālāwai akula Pele

E ‘ako ana i ka pua lehua

Kui aku i kai o Hōpoe

He ‘awa no nā wāhine o ka lani

A pale aku, a palepale mai

Mū ka waha, holoī ka lima

E ‘ali‘ali kapu, e ‘ali‘ali noa

Ua noa ka ‘awa ā

‘Āmama, ua noa

A lele wale ka pule ā

Noa honua nō ā

Ua noa!

Kāneikawaiola

Here is the ‘awa, Kāne

Consecrated ‘awa

Sustenance for the child

Drinking the yellow-leaf ‘awa

It is the ‘awa of Keahialaka

Where is Pele met

Plucking the lehua blossoms

To be strung at the sea of Hōpoe

‘Awa for the women of nobility

A prayer for outward and inward protection

Silence the mouth, wash the hands

A profound consecration, a profound release

The ‘awa is free

It is done, it is free

Let the prayer fly

The earth is lifted of restriction

It is free!

A Ka Imu Lei Lehua O Kuokala

The following chant was published in the Hawaiian language newspaper titled, *Ka Na‘i Aupuni* on March 8, 1906 within the story of Hi‘iakaikapoliopole. In one version of the Pele and Hi‘iaka saga, Hi‘iaka offered this chant as a prayer during a healing ceremony for Lohi‘au. The ceremony involved *lehua* garlands that would provide either good or bad omens concerning the outcome of his fate. In another version of this saga, Hi‘iaka recites this chant while surfing at Kea‘au with her friend Hōpoe as her sisters returned from the shore of Puna (Ho‘oulumāhiehie & Nogelmeier 2006:196).

A ka imu lei lehua o Kuokala

Lehua maka nou i ke ahi

A wela e

A wela la

A wela i ke ahi au e ka wahine

Mai ka lua a

No ka lua paha ia makani, he Puulena

Ke ali ‘la i ke ala lauae

At the oven for lehua garlands at Kuokalā

Fresh lehua thrust into the fires

Such heat, oh

Burning

Burning in the fires of you, the woman

From the blazing volcanic pit

The Pu‘ulena wind may swoop from the crater

Bearing the scent of laua‘e fern

*Kani mai ke kini i ke kaio Haena
 He ena
 He ena aloha keia ia oe
 Ke kau nei ka haili
 Kau ka haili moe i ke ahiahi
 He hele ko ke kakahiaka
 Manao hele paha au e
 Ho mai ka ihu a hele ae au*

The multitudes of Hā‘ena’s shores mourn
 A scorching heat
 This is an intense concern for you
 Premonitions come upon me
 Dream-like thoughts in the evening
 For the morning brings travel
 I have intentions to go
 Grant me a kiss and I shall depart.

Kau Umi O Hi‘iaka

Hi‘iakaikapoliopole recited the following chant as she made her journey away from Puna. In this chant she makes an appeal to Pele for the safe keeping of her friend Hōpoe (Ho‘oulumāhiehie 2006:48; Ho‘oulumāhiehie & Nogelmeier 2006:47).

*E ku‘u aikāne i ke kai
 hoe o Hō‘eu ma loko
 O ‘Āwili ma waho i kai pōpolo
 o Kalaloo
 A he kai he‘enalua ia me ku‘u
 ku‘u aikāne i ka uluniu ē
 O Mākena i ka wai ‘ākōlea
 I ka mauna ‘ōpae‘ula a ka lawai‘a ē
 I ka ‘ōpule moe one o ke kai ē
 I Kalapana māua me ku‘u aikāne
 I nā niu kulakula‘i a nā ali‘i ‘ai ahupua‘a
 O Kupahua i Kalapana i Kaunaloa ā
 A he ‘āina
 Aia ku‘u aikāne lā i nā hala o Halaniani
 I Kapa‘ohu a po‘e i kai o
 Kamilopaekanaka ē
 I Ka‘ū ē
 I Kahauale‘a ē
 I Pāhoehoe ē
 A i Poupou‘okea a he ‘āina
 Aia ke ola i ka lae lā‘au ā ē
 ‘Ike ‘ia Kamoamoā i Pāhoehoe
 Pali ku‘u ‘āina
 I Poupou
 I Lē‘apuki
 I Pānau iki
 I Pānau nui
 I ka Pāhoehoe
 I ke pulu ‘ōhi‘a
 Ku‘u aikāne i Kealakomo lā i ‘Āpua
 ‘Oki‘okiaho
 Pale o Puna, pale o Ka‘ū i Māwae ē*

O my dear companion in the gliding
 sea of Hō‘eu, there within
 ‘Āwili is out in the blue-black sea
 of Kalaloo
 It is a sea for surfing with my dear one
 My dear one amid the coconut groves
 Mākena has its nectar of the ‘ākōlea flowers
 And the red shrimp as bait for the fisherman
 With the sand-perching ‘ōpule wrasse of the sea
 My companion and I were at Kalapana
 Amid the coconut trees bent low by district chiefs
 Kupahua, at Kalapana, at Kaunaloa
 Such lands are these
 My dear one is amid the hala trees of Halaaniani
 At Kapa‘ohu of the shore folks of
 Kamilopaekanaka
 In Ka‘ū
 At Kahauale‘a
 At Pāhoehoe
 And at Poupou‘okea, ah, such a land
 Salvation is at the forested cape
 Kamoamoā is visible at Pāhoehoe
 Mine is a land of cliffs
 At Poupou
 At Lē‘apuki
 At Pānau Iki
 At Pānau Nui
 On the hard, smooth pāhoehoe lava
 In the soft wetness of the ‘ōhi‘a
 My companion at Kealakomo, at ‘Āpua
 At ‘Oki‘okiaho
 Puna is thrust aside, Ka‘ū is thrust aside at Māwae

*I ka 'awale o Hilo
Ku'u aikāne ho'i ē
Aloha 'oe ē 'oe*

Setting Hilo apart
My dear companion
Farewell to you, to you.

A Luna Au O Pu'unioni

The following was shared by Iwikauaikaua of Nāpō'opo'o, South Kona, Hawai'i and included in the book titled, *Nā Mele Welo: Songs of Our Heritage* (Pukui 1995:106-107). This *mele* is regarded as a *hulihia* (chant of complete change). According to Ho'oulumāhiehie and Nogelmeier, "The chants most prominent in the Hi'iaka story are the 'Hulihia,' the chants about Pele. These are actually genealogy or origin chants" (2006:35). Hi'iaka recited this *mele* as she became concerned for the safety of her friend Hōpoe. As Hi'iaka and her attendant, Pa'ūopala'ā climbed to the top of Pu'unioni, Hi'iaka looked back at her elder sisters and chanted forth to Pele:

*A luna au o Pu'unioni
Noho ke anaina a ka wahine
Kilohi a ku'u maka i lalo o Wahinekapu
He kaulu 'o Wahinekapu
He 'o'oina 'o Kīlauea
He hale noho 'o Papalauahi
Ke lauahi maila 'o Pele iā Puna
Ua one 'ā kai o Malama
E mālama i ke kanaka*

Atop Pu'unioni Hill
Dwells the assembly of the women
My eyes turn to gaze down
To the lava shelf, Wahinekapu
Kīlauea is a rising headland
Where Papalauahi resides
Pele devastates Puna with her lava
The sea of Malama is covered with cinder
May you and I, human companions, be
cared for
Lest love be wasted on a dog
A dog, showing recognition with its tail
I, though, am a person, something rare

*O kipa hewa ke aloha i ka 'īlio
He 'īlio ia
He kanaka wau*

Hi'iaka waited for a response from Pele. She wanted to know that Hōpoe would be safe while she was away on her journey. At first, there was no response. Hi'iaka chanted again until Pele acknowledged her plea. It was then understood that the safety of Hōpoe would be determined by the success of Hi'iaka's journey. Knowing this, Hi'iaka departed to fetch Lohi'au for Pele and return to Puna (Ho'oulumāhiehie & Nogelmeier 2006:35).

A Luna Au A Pōhākea

The following *mele* was chanted by Hi'iaka as she saw that her friend Hōpoe and the *lehua* groves that she loved had been completely transformed by Pele. Maly (1999:20) explains the events that led to Pele's actions and writes:

From Kaua'i, Hi'iaka, her companions, and the chief Lohi'au began their journey to Hawai'i. Because of all the things that had occurred on the journey, it had taken Hi'iaka a great deal of time to begin the trip home, and Pele became agitated, causing lava flows to pour across Puna. When Hi'iaka arrived at Pōhākea, overlooking the Honouliuli plain of 'Ewa, her supernatural sight let her see what was transpiring at Kea'au. When

Hi‘iaka reached the top of Pōhākea, she looked to Hawai‘i and saw that her companion Hōpoe and the *lehua* forests had been consumed by the lava flows of Pele.

One of Hōpoe’s body-forms was that of a tall *lehua* tree in full blossom. As a result of Pele’s impatience with Hi‘iaka and the return of Lohi‘au, the beautiful Hōpoe was turned into a stone that lay on the shore of Kea‘au, and swayed or danced when the waves washed up against her. Thus Hōpoe is also known by the name Wahine ‘Ami.

When Hi‘iaka witnessed what had happened, she expressed her sentiment in the following *mele* (Emerson 2005:163).

<i>A luna au a Pōhākea</i>	On the heights of Pōhākea
<i>Kū au, nana iā Puna</i>	I stand and look forth on Puna
<i>Pō Puna i ka ua ‘awa‘awa</i>	Puna, pelted with bitter rain
<i>Pohina Puna i ka ua noenoe</i>	Veiled with a downpour black as night
<i>Hele ke a i kai o ka Lahiku o a ‘u lehua</i>	Gone, gone are my forests, lehuas
<i>O a ‘u lehua i ‘āina ka manu</i>	Whose bloom once gave the birds nectar
<i>I lahui ai a kapu</i>	Yet they were insured with a promise
<i>Aia lā, ke huki ‘ia lā i kai o Nānāhuki</i>	Look, how the fire-fiends flit to and fro
<i>Hula le ‘a wale i kai o Nānāhuki, ē!</i>	A merry dance for them to the sea
	Down to the sea at Nānāhuki!

Ke Ahi Makapā I Ka Lā

This is another *mele* that was chanted by Hi‘iaka as she discovered the loss of Hōpoe and her prized ‘ōhi‘a grove in Puna. Emerson refers to this point in the journey, “Hi‘iaka, standing on the flank of Leahi and exercising a power of vision more wonderful than that granted by the telescope, had sight of a wild commotion on her beloved Hawaii. In the cloud-films that embroidered the horizon she saw fresh proof of her sister’s mindfulness of the most solemn pledges” (2005:186). Pele had destroyed Hi‘iaka’s ‘ōhi‘a forest in Puna along with her friend Hōpoe. Thus, Hi‘iaka chant forth:

<i>Ke ahi makapā i ka lā</i>	The blazing fire raging in the sun
<i>‘Ōwela kai ho ‘i o Puna</i>	Glowing at the sea of Puna
<i>Mālamalama kai o Kūki ‘i</i>	Brightening Kūki ‘i
<i>Kū ki ‘i a ka pō i Ha ‘eha ‘e</i>	Standing erect as ki ‘i in the night at Ha ‘eha ‘e
<i>Ka ulu ‘ōhi ‘a i Nānāwale</i>	The ‘ōhi ‘a forests of Nānāwale are visible
<i>A nānā aku nei he mea aha ia</i>	What is the meaning of this vision?
<i>A nānā aku nei he mea lilo ia</i>	It means that everything is destroyed.

Aia Lā, Leleiwi O Makahanaloa

Hi‘iaka composed this *mele* as she and her traveling companions made their return to Puna. Emerson refers to the accumulation of events that inspired this *mele* and explains, “When they had passed through the lands of Kukia-lau-ania and Maka-hana-loa and were

overlooking the town of Hilo, Hi‘iaka was better able to judge the havoc which the fires of Pele had wrought in her Puna domains. The land was desolated, but worst of all, the life of her dearest friend Hopoe had been sacrificed on the altar of jealousy” (2005:189). With thoughts of retaliation, Hi‘iaka expressed herself through the following *mele*.

<i>Aia lā, Leleiwi ‘o Makahanaloa</i>	See the cape that’s a funeral pyre
<i>Oni ana ka lae ‘ōhi‘a</i>	The tongue of ‘ōhi‘a’s grief-smitten
<i>Ka lae ‘āpane, ma uka o ka lae mānienie</i>	Beyond, at peace, lies Mānie
<i>I uka o Keahialaka</i>	Above rage the fire of Laka
<i>Oni ana ka lae, ‘ā me he kanaka lā</i>	The cape is passion-moved; how human
<i>Ka leo o ka pōhaku i Kīlauea</i>	The groan of rocks in the fire-pit
<i>Ho‘i i Kīlauea,</i>	That cauldron of vapor and smoke
<i>Pau kekahi ‘ao‘ao o ka māhu nui</i>	One side-wall has broken away
<i>Māhu nui ākea</i>	That covers the earth and the sky
<i>E li‘u mai ana ke ahi a ka pōhaku</i>	Out pours the flame
<i>No Puna au,</i>	My home-land is Puna, sworn guard
<i>no ka hikina a ka lā i Ha‘eha‘e.</i>	At the Eastern gate of the sun.

Aia Lā ‘O Leleiwi

The following *kau* (sacred chant) was published on August 11, 1906 in the Hawaiian language newspaper, *Ka Na‘i Aupuni*. This *kau* is said to have been chanted by Hi‘iaka when she realized that her friend Hōpoe and favorite lands in Puna were destroyed. Given below is a selection from the *mo‘olelo* of Pele and Hi‘iaka, followed by an English translation, and the *kau* that Hi‘iaka chanted to Pele.

Mai laila aku kā lākou hele ‘ana a hō‘ea i Hilo, a hala nā Hilo Palikū, hō‘ea lākou nei i Kukuilaumania, Makahanaloa, Hilo, kū akula ‘o Hi‘iaka, nānā akula, huli akula kona alo a nānā akula iā Puna “‘āina aloha,” ike akula ia ua pau i ka ‘ai ‘ia e ke kaikua‘ana.

‘O ke aikāne aloha kēia āna, ‘o Hōpoe, ua pau nō i ka ‘ai ‘ia e ua kaikua‘ana lā e like nō me kāna i ‘ike ai mai luna mai o Pōhākea. A i ia wā, hiolo ihola nā waimaka o ua Hi‘iaka nei ma kona mau pāpālina, a hāpai hou a‘ela ‘o ia i kēia kau, a ‘o ia kēlā kau e pili ana iā “Pana‘ewa moku lehua nui” I hō‘ike ‘ia ma kekahi o nā helu o ka Buke I o Ka Na‘i Aupuni nei.

A i ia pau ‘ana o ia kau a Hi‘iaka, i ia wā ‘o ia i ‘ōlelo a‘e ai-

“‘Ae, mālama ana kā ho‘i au i kāu mea aloha, a ‘o ka‘u kā ho‘i, ‘a‘ole ‘oe i mālama. E moe ‘ia ana e a‘u kāu kāne. ‘A‘ole na‘e au e ho‘okō ana i kēia hana, aia nō a hō‘ea au i mua o kō maka, i ‘ike mai ai nō ‘oe.”

A i ia wā ‘o ia i paepae a‘e ai i kēia kau.

...*Ke paepae ala nō 'o Hi'iaka i kēia kau, ke uē lā nō 'o ia, a nana ho'i ka uē, hiolo ihola nō ko Wahine'ōma'o mau waimaka* (Ho'oulumāhiehie 2006:358).

From there, they traveled toward Hilo, passing the lands of Hilo Palikū, and arriving at Kukuilaumania, in Makahanaloa, Hilo. There, Hi'iaka stopped, turned around, and looked toward Puna, the land she so loved, and saw that it had been decimated by her elder sister.

Her beloved aikāne, Hōpoe, had also been devoured by that same sister, just as she had seen from atop Pōhākea. Hi'iaka's tears streamed down her cheeks, and she again chanted a kau, the one about "Pana'ewa of the lehua groves" which was shown in one of the issues of Buke I of *Ka Na'i Aupuni*.

When her kau was finished, Hi'iaka said-

"Indeed, I end up taking care of your loved one, but for mine, you had no regard. I am going to lie with your husband. I am not going to do so, however, until I am right before your eyes, so that you will witness it."

Then she raised up this kau.

As Hi'iaka chanted, she wept, and though Hi'iaka was the one crying, Wahine'ōma'o's tears also flowed. (Ho'oulumāhiehie & Nogelmeier 2006:333)

<i>Aia lā 'o Leleiwi, 'o Makahanaloa</i>	There lies Leleiwi and Makahanaloa
<i>Oni ana ka lae 'ōhi'a</i>	The 'ōhi'a covered point comes into view
<i>Ka lae 'āpane ma uka o ka lae mānienie</i>	Ridges of deep red lehua above capes of mānienie grass
<i>I uka o Keahialaka</i>	Inland of Keahialaka
<i>Oni ana ka lae 'ā me he kanaka ala</i>	The rocky cape emerges like a man
<i>Ka leo o ka pōhaku o Kīlauea</i>	The voice of Kīlauea's stone
<i>Ho'i i Kīlauea</i>	Returning to Kīlauea
<i>Pau kekahi 'ao'ao o ka māhu nui</i>	Some of the powerful vapor is gone
<i>Māhu nui ākea</i>	The great, expansive steam
<i>E li'u mai ana ke ahi a ka pōhaku</i>	The stone's fires shall smolder on
<i>No Puna au, no ka hikina a ka lā</i>	I am from Puna, from where the sun arrives
<i>i Ha'eha'e</i>	at Ha'eha'e.

Kua Loloa

The following is considered to be a *hulihia* that Kanahale explains, “‘Kua loloa’ is not a typical *hulihia* chant, although there is *hulihia* in it to describe the movement of lava as it flows and covers the vegetated land... ‘Kua loloa’ does mention parameters, which include the whole of Puna, from Kea‘au to ‘Āpua point. It also includes Pana‘ewa, which is the northern boundary of Puna, and ‘Āpua, the southern boundary. Therefore the whole ‘āpana, or district of Puna is being momoku, or cut, as alluded to in the chant” (2011:164-167).

*Kua loloa Kea‘au i ka nāhelehele hala
Kua hulu Pana‘ewa i ka lā‘au
‘Ino ka maha o ka ‘ōhi‘a
Kū kepaepa ka maha o ka lehua
Po‘o hina i ka wela a ke akua
Uahi Puna i ka ‘oloka‘a pōhaku
Nā pe‘a ia a ka wahine
Nānahu ahi i ka papa o ‘Oluea
Momoku ahi Puna, hala i ‘Āpua
A ihu ē, a ihu lā
A hulihia lā i kai
A ihu ē, a ihu lā
A hulihia lā i uka
A ua wa‘awa‘a
A ua noho ha‘aha‘a
A ua hele helele‘i.*

Kea‘au ia a long ridge of hala forest
Pana‘ewa’s back is covered with growth
The grove of ‘ōhi‘a trees is devastated
The grove of lehua stands crooked
Ashes in the heat of the god
Puna is smoky from the rolling rocks
The borders are set by the goddess
The plains of ‘Oluea are burnt wood
Puna is charred embers, all the way to ‘Āpua
The flow is heading this way and that
Twisting as it moves toward the sea
The flow is heading this way and that
An upheaval in the uplands
It is desolate, uninhabitable
Flattened out
Falling, falling, nothing but ashes.

A Popo‘i Haki Kaiko‘o

The following chant describes the nature of Pele and her movement through the district of Puna. Beginning at Kīlauea, Pele makes her way to Keahialaka (Leilani Estates), and down to Waiwelawela (Warm springs) at Kapoho in Puna (Matsuoka, et al. 1996:181-182).

*A popo‘i haki kaiko‘o i ka lua
Haki ku, haki kakala a ka ‘ino
Paia kuli uwo lehua a Kaniahiku e
Wahine ‘ai lehua a ka unu
Kupukupu a ‘eha i ka pohaku
I ka ‘uwalu a ke ahi
I ka ‘unu a ka Pu‘ulena
Huki ka moku, papa‘a ka ‘aina
Ha‘aha‘a ka lani, Kaiko‘o ka mauna e
Ha ka moana popo‘i Kilauea
Halelo o Papalauahi e*

Covering, breaking, rough is the sea within
the crater
Breaking vertically, breaking jaggedly like a
storm
The sound is deafening to the lehua of Kaniahiku
The lehua eating woman is present
Growing rock altar wrenched in pain
Clawed by the fire
Pulled by the Pu‘ulena
The island stretches, the land is scorched
The heavens are made low, the mountain is rough
The ocean breathes and covers Kilauea
Papalauahi is jiggered with rocks

*O mai Pele i 'o na kino
Ka hakikili, ka ua mai ka lani
Ne'i ka honua i ka 'ola'i e
Haka Ikuwa ka poha ko 'ele'ele
Ku mai Puna a ki'eki'e
Ha'a ka ulu i ka 'opua
Pua 'ehu maila uka o Keahialaka*

*Pa'u o keahi o Waiwelawela o ka lua e
Aloha na po'e la o*

Pele is in her many forms
The light rain, the rain from heaven
The earth moves with the quake
Ikuwa breaks with the exploding storm
Puna grows until to great heights
The increase of clouds hangs low
Sprouting vigorously in the uplands of
Keahialaka
The pit of Waiwelawela is encircled by fire
Greetings to the people of the upland pit

Nei Nakolo Puna I Ke Akua Wahine

The following chant was published in the Hawaiian language newspaper, *Ka Na'i Aupuni* on August 18, 1906 and August 20, 1906 (Ho'oulumāhiehie 1906:3-4). In the saga of Pele and Hi'iaka, Lohi'au recites this chant to Pele. In this chant, he refers to many famed places in Puna and provides a vivid description of volcanism in its extreme form (Ho'oulumāhiehie 2006:365; Ho'oulumāhiehie & Nogelmeier 2006:340).

*Nei nākolo Puna i ke akua wahine
Nākolokolo i luna o Kahauale'a ā
Le'a ka leo o ke akua noho nane*

*'Ai 'ino'ino iā uka o Kalālua
Pau a'ela ke kino o ka 'ōhi'a kūmakua
Lelekē ana ka pōhaku mai ka lua
He imu puhi he māhu wela ia
Ua wela ka mahamaha o Kuiihanalei
Mōkākā, ahuli'u i uka o Kali'u
Li'uli'u wale ka lā o Makanoni
Ke hi'a a'e ma waho o ke kau wela
Wela mo'a makali ka 'ōhi'a
Mo'a maka'u wale a'u hala a kau
A'u hala lu'u kai o Pua'akanu*

*Kanuhia e ka wahine 'ā 'ino'ino
'O kahi maika'i, 'o Puna, ua ā
Ua kōhi ka lepo, ua lele i luna
Ua ho'owa'a 'ia 'o uka o Maluahi*

*He ahi puhi wela na ka mahi'ai
He mahi'ai kanu lau lepo no Malama
E mālama ana i nā lau kī po'i 'ai
He 'ai ka 'awa no Pūnanaka'ie*

'Io'ioa Puna, kūlepe i ke koa

The goddess makes Puna roar and rumble
Reverberating there atop Kahauale'a
Blithe is the voice of the deity who dwells in
mystery
Devouring the uplands of Kalālua
'Ōhi'a kūmakua trees are entirely consumed
As stones spew from the crater
A blazing earth oven, scalding steam
Burned is the brow of Kuiihanalei
Chaos, white-hot there above Kali'u
The sun of Makanoni makes slow progress
Igniting beyond the hottest places
Scorched and seared are the 'ōhi'a groves
Fearfully burned are all of my hala trees
Hala of mine that plunges into the sea of
Pua'akanu
Buried by the woman of fiery destruction
Puna, so fine, is ablaze
Its soil dug up and tossed in the air
The highlands of Maluahi are gouged in
furrows
The land torched as though by a farmer
A farmer planting dirt clods from Malama
Mindful of the ti leaves as food covers
'Awa from Pūnanaka'ie becomes the
sustenance
Puna is furrowed, splitting the koa trees

Kūlepe lua nā 'ale o Kumukahi

*E ho 'okumu nei Kumukahi i ka 'ino
'Āwa 'a lua nā nalu ho 'o 'ukā 'ukā
Popo 'i wiliau ka 'ale o ka moana
'I'ino a 'e ka moana palalā ulu
Lele mai ke ao a ka Ho 'olua
Lele uli mai ke ao a ka Moa 'e
Aeae ka ulu a ka makani
A makani ia e pā nei e
A he 'ino
Kū ka 'ehu, ka huhū o ka mea hale
Nakeke ka papa 'auwae i ka inaina
Kō inaina, 'o ku 'u makemake
'Auhea ana 'oe?*

The billows at Kumukahi Point are carved in
deep troughs
As Kumukahi commences the storm
The rushing waves rise between deep gaps
While the swells crash and swirl
Besieging the violent, rumbling sea with storm
The clouds sail in the Ho'olua gusts
Thunderheads are borne by the Moa'e winds
The rising gales shriek and wail
And the tempest is here
And such a storm it is
The fury rises, ire from the mistress of this realm
The jaw quivering with rage
Your wrath is just what I crave.
Will you pay heed?

He Mele I Kīlauea

The following *hulihia* was published on March 21, 1860 in the Hawaiian language newspaper, *Ka Hae Hawai'i*. Lohi'au chanted this *hulihia* to Pele as she aimed to destroy him. In this chant, Lohi'au describes how land is completely transformed by Pele. He references many places throughout the Puna district that are affected by her movement and lists different *akua* of the upland forest. Provided below is a section of the Hawaiian language article, followed by an English translation, and the *hulihia* chant given by Lohi'au.

*Aia nō nā wahi akua o Lohi'au ke 'ōlelo ihola iā ia, "A 'ole kēia 'o ka wā
pono e uhau ai 'oe, e ke ali 'i, i ka pule 'uehe a makala hewa. E uhau aku
'oe i kekahi o nā hulihia a kō wahine i hā'awi mai ai iā 'oe, i huli ka
inaina a me ka huhū o Pele. 'Oia, haua 'ia ka huli.*

*Ho'olohe a'ela nō 'o Lohi'au i kēia mau [leo]a nā wahi akua ona, a
kāpae a'ela nō i ke a'o a me ke kauoha a wahine, a Hi'iaka. A laila, uhau
akula 'o ua Lohi'au i kēia mele (Ho'oulumāhiehie 2006:370-371).*

Lohi'au's little spirits were saying to him, "This is not the right time, O Chief, for you to present the opening chant of forgiveness. You must offer up another of the *hulihia* chants your wife gave you, so that the wrath and anger of Pele will be overturned. Yes, present the *hulihia* chant."

Lohi'au listened to these spirit gods of his, casting aside the advice and command of his wife, Hi'iaka. Then he presented this *mele* (Ho'oulumāhiehie & Nogelmeier 2006:344-345).

Hulihia ka mauna, wela i ke ahi

Wela nopu i ka uka o Kuīhanalei

The mountain is overturned, hot with the
fires
A burning blaze in the heights of

Ke 'ā pōhaku, pu'u lele mai
 i uka o Kekāko'i
 Ka maiaua pololei kani le'ale'a
 Ka hinihini kani kua mauna
 Ka māpu leo nui, leo kohākohā
 O kanaka loloa o ka mauna
 Kūpulupulu i ka nahele
 'O nā akua mai ka wao kele
 Kūlīpe'enui'aihua
 Kīkēalawaopi'ikea
 Ka uahi pōhina i ka uka
 Ka uahi māpu kea i kai
 Ke 'awa nui i ka mauna
 Ke po'okea i ka nahele
 Ka uahi noe lehua ē
 'O ka 'āina a Pele i uka
 Ua kū ke 'ōkā, aia i kai
 Ka 'āina o Pele mā, ua kū ke 'ōkā
 Aia lā i kai
 Pau a'ela ka maha la'a
 Ka maha 'ōhi'a loloa o Kali'u
 A ka luna o Pōhakuokapu ē
 Kapu maila Puna, ua kūlepe i ke ahi
 Ua puni, hāiki Kīlauea
 Ua hākala mai ka lua i Moku'āweoweo
 Ua hā ka uka i Keahialaka
 'Aina a'ela Moeawakea
 Ke 'ā i kai o Kūkala'ula
 A ka luna o Pōhakuoholona'e
 Kū au e nānā a e maliu mai
 Ku'u 'ike wale aku iā Puna
 Ka papa lohi, kahuli ē 'Āpua
 He lā li'uli'u e nopu, e wela i ka wāwae
 A pau nā niu o kula i Kapoho
 Hō'i'o ka uahi mā o Kuauli
 Pau 'Ōma'olala i ke ahi
 I hi'a 'ia nō a 'ā
 Pulupulu i ka lau lā'au
 Kunia ke one, hā'uile mai ka ua
 Ka'a mai ka pōhina, wili ka pūnohu
 Ka uakoko, ke 'oē lā i ka lani
 Eia Pele mai ka mauna i Kīlauea
 Mai Wahinekapu i O'ahu, 'eā
 Mai Papalauahi, hiki malama
 Mahina ka uka o Kali'u

Kuihanalei

Fiery stone, heaps flying at Kekāko'i

Straight and true, with a joyous sound
 Like the land shells of the mountain forest
 A great carrying voice, a crackling report
 Of the long man of the mountain
 Kūpulupulu, deity of the woods
 The gods of the rainforest
 Kūlīpe'enui'aihua
 Kīkēalawaopi'ikea
 The gray smoke in the uplands
 The white smoke drifting toward the shore
 The bitter haze upon the mountain
 The whiteness that cloaks the forest
 The smoke that settles on the lehua blossoms
 Pele's land, there above
 Fear strikes there at the shore
 In the lands of Pele's clan, fear strikes
 There at the shore
 Consumed is the sacred grove
 The vast 'ōhi'a grove of Kali'u
 And there atop Pōhakuokapu
 Sacred is Puna, scarred by fire
 Encircled, Kīlauea is besieged
 The crater, Moku'āweoweo, rises steeply
 The uplands at Keahialaka have exhaled
 Moeawakea is devoured
 Fire blazes at the sea of Kūkala'ula
 At the top of Pōhakuoholona'e
 I stop to gaze and to hearken
 Gaining a clear vision of Puna
 The glittering flats, 'Āpua is in upheaval
 An endless day, burning and searing the feet
 The coconut trees of Kapoho's plains are gone
 The tainted smoke of Kuauli takes form
 'Ōma'olala is burned up by the fire
 Fire struck and set to blazing
 Fueled by the stands of trees
 The sands are burnt, the rain falls
 The grayness swirls, the rising mists spin
 The bright glowing rain murmurs in the sky
 Here is Pele from the mountain at Kīlauea
 From Wahinekapu to O'ahu, indeed
 From Papalauahi, coming brightly
 The uplands of Kali'u are aglow

*‘Ena ‘ena Puna i ka ‘aina e ke akua
Kahuli Kīlauea me he ama wa‘a ala
Niho ‘ā ka pali, kala lua i uka*

*Kunia Puna, mo ‘a, wela ke one
Liolioiwawau ke akua o ka uka
Wela Puna ē!
Wela i ke ahi!
Wela i ke ahi āu, e ka wahine
Mai ka lua nō ā
Niho ‘ā ka pali, kala lua i uka
Koea a mania, kīkaha koa ‘e
Lele pāuma ka hulu māewaewa
‘A ‘e ‘a ‘e nā akua i ka uka
Noho Pele i ke ‘āhiu
Kanikē i lalo o ka lua
Kahuli Kīlauea, lana me he wa‘a lā
Kunia a ‘ela Puna, mo ‘a, wela ke one
Mo ‘a wela paha Puna ē
Wela i ke ahi a ka wahine
Kīnā Puna, wela i ke ahi.*

Puna’s lands blaze hot, consumed by the goddess
Kīlauea is tossed like an outrigger’s float
The cliffs are jagged teeth of flame, craggy
in the heights
Puna is branded, burned, the sand blazing hot
Liolioiwawau is the deity of the uplands
Hot is Puna, ah!
Charred by the fires!
Burned by the fires of you, the woman
From the crater itself, ah
The cliffs are jagged teeth of flame
Scraped sheer, where only koa‘e may soar
Tousled feathers beating against the wind
The gods tread there in the upland
Pele dwells in the chaos
Resounding down below in the pit
Kīlauea is overturned, adrift like a canoe
Puna is branded, burned, the sand blazing hot
Puna is destroyed, destroyed by fire
Charred by the fires of the woman
Puna is blighted, burned in the fires.

He Kānaenaē No Laka, A Ke Kuahiwi, I Ke Kualono

The following is a *kānaenaē* (prayer chant) for Laka, a goddess of hula whose physical manifestations are found growing in the upland forests. Emerson states, “The following adulatory prayer (*kānaenaē*) in adoration of Laka was recited while gathering the woodland decorations for the altar” (1998:16).

*A ke kuahiwi, i ke kualono
Kū ana ‘o Laka i ka mauna
Noho ana ‘o Laka i ke po‘o o ka ‘ohu
‘O Laka kumu hula
Nāna i ‘a‘e ka waokele
Kahi, kahi i mōlia i ka pua‘a
I ke po‘o pua‘a
He pua‘a hiwa na Kāne
He kāne na Laka
Na ka wahine i ‘oni a kelakela i ka lani
I kupu ke a‘a i ke kumu
I lau a puka ka mu‘o
Ka liko, ka ‘ao i luna
Kupu ka lālā, hua ma ka Hikina
Kupu ka lā‘au ona a Makali‘i
‘O Makalei, lā‘au kaulana mai ka pō mai
Mai ka pō mai ka ‘oia‘i‘o
I hō‘i‘o i luna, i o‘o i luna*

In the forests, on the ridges
Of the mountains stands Laka
Dwelling in the source of the mists
Laka, mistress of the hula
Has climbed the wooded haunts of the gods
Altars hallowed by the sacrificial swine
The head of the boar
The black boar of Kāne
A partner he with Laka
Woman, she by strife gained rank in heaven
That the root may grow from the stem
That the young shoot may put forth and leaf
Pushing up the fresh enfolded bud
The scion-thrust bud and fruit toward the east
Like the tree that bewitches the winter fish
Makalei, tree famed from the age of the night
Truth is the counsel of the night
May it fruit and ripen above

<i>He luna au e ki'i mai nei iā 'oe, e Laka</i>	A messenger I bring you, o Laka
<i>E ho'i ke kōkua pā'ū</i>	To the girding of pā'ū
<i>He ia 'ūniki no kāua</i>	An opening festa this for thee and me
<i>Hā'ike'ike o ke akua</i>	To show the might of the god
<i>Hō'ike ka mana o ka wahine</i>	The power of the goddess
<i>O Laka, kaikuahine</i>	Of Laka, the sister
<i>Wahine a Lono i ka 'ouali'i</i>	To Lono a wife in the heavenly courts
<i>E Lono, e hū 'ia mai ka lani me ka honua</i>	O Lono, join heaven and earth
<i>Nou 'oko'a Kūkulu o Kahiki</i>	Thine alone are the pillars of Kahiki
<i>Me ke 'ano'ai aloha ē</i>	Warm greeting, beloved one
<i>E ola, ē!</i>	We hail thee!

Pupu Weuweu E, Laka E

This *mele kuahu* (altar chant) honors the goddess Laka. Kanahale refers to *mele kuahu* and writes, “*mele kuahu* or altar chant, is a plea from a student of hula to the deities directly involved with hula. Laka is the female deity whose kinolau, or body forms, are sometimes used on the kuahu, or hula altar. Laka is the primary deity of the hula kuahu” (2011:123). This *mele kuahu* was collected from the *mo'olelo* of the chief Kahawali. Beckwith and Roberts share their knowledge of Kahawali explaining, “His first achievement was to perfect himself in the art of hula, or dances of all kinds, and he offered the initiatory sacrifice and performed other ceremonies common to that period. While living in a certain part of the country, namely Kapoho, in the district of Puna, he erected a *Pā Hula* (dance-hall), and organized a school for instructing others in the art of dancing, and many persons attended – men, women and young people. He also built a *kuahu hula* (hula altar)...where prayers were offered to the goddess of the dance, Laka” (1922:2-3).

<i>Pupu weuweu e, Laka e</i>	A bunch of green grass, O Laka, oh!
<i>O Laka, ka kahu o ke akua,</i>	Laka, mistress of the dance
<i>Kaumaha ae ia Laka e</i>	Sacrifice to Laka, oh!
<i>O Laka hoi e ka pule ikaika,</i>	To Laka we pray fervently.
<i>Ua noa ke kahua, ua lu ka hua,</i>	The gathering is free, The seed is sown,
<i>O ka maile noa</i>	Of the dedicated maile vine,
<i>Noa ia Kahaula, papalua noa.</i>	Dedicated to Kahaula, doubly dedicated.

Puka Mai Ana Ka Lā Ma Puna

The following is a *mele pule* (prayer chant) that is sometimes performed as an entrance dance. This *mele* was shared by Peter Pakele Sr. of Waiākea, Hilo, Hawai'i (Pukui 1995:104-105).

<i>Puka mai ana ka lā ma Puna</i>	The sun appears in Puna
<i>Ea mai ana ma Ha'eha'e</i>	It rises at Ha'eha'e
<i>Ma luna mai o Kūki'i</i>	Above Kūki'i
<i>Ua hiki ka lā, aia i Hawai'i</i>	The sun has come to Hawai'i
<i>He 'awamea ua na Pele, na Hi'iaka</i>	Brightening the home of Pele, of Hi'iaka

*Ke kakali lā i loko o ke kai ka 'alā ku 'i
o Kaueleau*

*Ho'olono ka luahine i uka o ka lua
Kia 'i wai o Pu'ulena, 'ūlili, kōlea*

He kanaka la'ila'ia ka lā

He 'kua, 'o Hi'iaka paha ia

e hele a'ela lā ē

*'O Hi'iaka, 'o Hi'iaka, 'o ka wahine
hele mauna*

Nāna i hehi ke po 'o o Hu'ehu'e

'O Hu'ehu'e-a-e.

Waiting for it in the sea are the sea-pounded
rocks of Kaueleau

The old woman listens, up in the pit
To the guardians of the water, the sandpiper
and plover

Who warn of the approach of men

Perhaps that is the goddess Hi'iaka
passing by

Hi'iaka, the woman who travels the
mountains

She it is, who steps on the summit of

Hu'ehu'e

Of Hu'ehu'e.

Nā Moku 'Eono o Hawai'i Nei

This chant was shared by Z.P. Kalokuokamaile of Nāpō'opo'o, South Kona, Hawai'i and published in the book, *Nā Mele Welo: Songs of Our Heritage* (Pukui 1995:96-99). A section of this chant was also published in the Hawaiian language newspaper, *Ka Hoku O Hawai'i* (1914-1917) in the article titled, "*Ka'ao Ho'opu'uwai no Ka Miki*" (The Heart Stirring Story of Ka Miki). This chant is known as an *oli hei* (string figure chant) that refers to the famed features of the six districts of Hawai'i.

Ka lā, ka lā, i ke kula Ahu'ena

Komo i ka la'ia o Kailua ē, o Kona

'O Kona ia o ke kai malino a Ehu

E hele ana i waho o ka Pulau

Kani ka hoe i Wai'ula'ula

I ke ala a ke kanaka e hele nei

Hō'ea i Ka'ū

'O Ka'ū ia, 'o Ka'ū nui kua makani

Kū ka 'e'a o ka lepo

Lele koa'e o ka pali kaulana o Kaumaea

Hō'ea i Puna

'O Puna ia lā, 'o Puna i ke kai kōloa

Ke nū hele ala i ka ulu hala

I ke kai o Puna o Kea'au

Hō'ea i Hilo

'O Hilo ia lā o ka ua kinakinai

He ua lū lehua ia no Pana'ewa

I kinai i ka ua o ke kila

He ua mao 'ole kaulana o Hilo

Hō'ea i Hāmākua

'O Hāmākua ia o kalawa i ka pali

The sun, the sun shines on the plain of
Ahu'ena

It comes to peaceful Kailua-that is Kona

It is Kona, home of the calm sea of Ehu

Extending all the way out to Pulau

The traveler whistles at Wai'ula'ula

On the much-traveled road

Ka'ū is reached

This is Ka'ū, great Ka'ū of the windblown
back

Which swirls the dust upward

The game of dust leaping is at the famous
hill of Kaumaea

Puna is reached

This is Puna, Puna of the moaning sea

Which groans to the hala grove

At Kea'au in Puna

Hilo is reached

This is Hilo of the endless rain

A rain that pelts the lehua of Pana'ewa

A beating, relentless rain

The famous endless rain of Hilo

Hāmākua is reached

This is Hāmākua of the sheer cliffs

*He 'ūlili ke ala e hiki ai
 Ho 'oku 'uku 'u ka lima i ke kaula
 'A 'aki ka niho i ka ipu
 I ka pali o Koholālele
 'O Waipi 'o ma lāua o Waimanu
 Noho i Kohala
 'O Kohala nui, 'o Kohala iki
 'O Kohala 'āina ua ha 'aheo
 I ka ua 'Āpa 'apa 'a
 'O Pili me Kalāhikiola
 'O nā pu 'u haele lua
 'O nā pu 'u noho i uka
 'O ke kanaka nō ke hele ana
 Ke ne 'e nei 'o Kaneopa i kahakai
 I ka hu 'ahu 'a, i ke ala 'ala
 Pa 'ina pohā.*

Steep is the trail to go
 One goes clinging to a rope
 Holding the container by his teeth
 At the cliff of Koholālele
 Of Waipi 'o and Waimanu
 Kohala is reached
 Great Kohala, lesser Kohala
 Kohala, a land that is proud of its rain
 The 'Āpa 'apa 'a rain
 There lie Pili and Kalāhikiola
 There the two –sided hills
 The hills that remain inland
 Only man travels about
 Kaneopa moves along the beach
 Among the sea-foam, the large air bubbles
 That bursts with sound.

Nā Makani O Hawai'i

The chant presented below was collected from the Hawaiian language newspaper, *Ka Hae Hawai'i* (May 8, 1861). The *mo'olelo* that this chant was collected from is called, “*He Moololo no Pakaa*” (The Story of Pāka'a). During the reign of Keawenuia'umi, Kūapāka'a, the son of Pāka'a chanted the names of the winds and rains of all the districts in succession of each island. Through the knowledge and *mana* (spiritual power) that was passed down from his grandmother La'amaomao (goddess of the wind), he chanted “*Nā Makani o Hawai'i*” and raised a storm. This chant associated with Hawai'i Island is as follows (S.K.K 1861:4; Fornander & Thrum 1919:92-95):

*Aia la! aia la! aia la!
 He apaapaa ko Kohala,
 He naulu ko Kawaihae;
 He kipuupuu ko Waimea,
 He olauniu ko Kekaha,
 He pili-a ko Kaniku,
 He ae ko Kalaau,
 He pohu ko Kona,
 He maaakualapu ko Kahaluu,
 He pilihala ko Kaawaloa,
 He kehau ko Kapalilua,
 He puuhoohilo ko Kau,
 He hoolapa ko Kamaoa,
 He kuehu lepo ko Naalehu,
 He uahiapele ko Kilauea,
 He awa ko Leleiwi,
 He puulena ko Waiakea,
 Uluau Hilo paliku,
 Koholalele Hamakua*

There they are! There they are! There they are!
 The apaapaa is of Kohala,
 The naulu is of Kawaihae,
 The kipuupuu is of Waimea,
 The olauniu is of Kekaha,
 The pili-a is of Kaniku,
 The ae is of Kalaau,
 The pohu is of Kona,
 The maaakualapu is of Kahaluu,
 The pilihala is of Kaawaloa,
 The kehau is of Kapalilua,
 The puuhoohilo of Kau
 The hoolapa is of Kamaoa,
 The kuehu lepo is of Naalehu,
 The uahiapele is of Kilauea,
 The awa is of Leleiwi,
 The puulena is of Waiakea,
 The uluau is of the cliffs of Hilo
 The koholalele is of Hamakua,

*He holopoopoo ma Waipio,
 O ka welelau o kela makani,
 O ka welelau o keia makani,
 Puili puahiohio,
 Ha ka opeope kau ma ke kua,
 Loaa ka ukana hao a ka waa make.
 No ka waa iki ka make,
 Paupu me ka waa nui.
 A-la, make ke alii, make ke Kahuna,*

Make ka pulewa, ka hailawa,

*Ka lawa uli, ka lawa e-a,
 O ka huli, o ka noonoo,
 E ike i ka hoku o ka nalu,
 O hoku ula, o hoku lei,
 Auau paka kahi,
 Auau paka lua,
 E Keawenuiaumi, e pae he ino,
 I nehinei ka la malie,
 E holo ia mai, ina la ua pae,*

He la ino keia la.

The holopoopoo is of Waipio,
 The end of that wind,
 The end of this wind,
 Join and cause a whirlwind,
 Place the burden on the back,
 Thus a load is given to the swamped canoe,
 Because the small canoe is swamped,
 The large canoe will meet the same fate,
 Troubles will overtake the king, troubles
 will overtake the priest,
 Troubles will overtake the unstable ones, the
 followers of the king,
 The different officers of the king,
 They will search out, they will study out
 To locate the stars in the heaven
 The red star, the string of stars
 They hasten singly,
 They hasten by twos,
 Say, Keawenuiaumi, come ashore
 Yesterday was the calm day
 Had you come yesterday, you would have
 reached your destination
 This is a stormy day.

He Wahi Mele No Keawenuia‘umi

The following chant was published in the Hawaiian language newspaper, *Ka Hōkū Loa* in July 1860. The chant is recited by Kūapāka‘a as he calls the winds of Hawai‘i including a wind of Puna called Moani‘ala. The name means “wafting fragrance” which refers to the scent of *maile*, *lehua*, and *hala* that is renowned throughout Puna. An excerpt from the article is included below and followed by the chant.

He wahi Mele no Keawenuiaumi, kekahi alii o Hawaii i hele mai e huli i ke kahu ona ia Paka‘a. Alaila hapai ae la o Kuapakaa, ka Pakaa keiki i kekahi Mele.

This is a cherished song for Keawenuia‘umi, a chief of Hawai‘i who came to search for a guardian of his named Pāka‘a. Then Kuapāka‘a, the child of Pāka‘a, raised up a specific song.

*Ki-au-au, ki-au-au, kele-au-au,
 O ke kumu o ka ino o Hilo,
 O ke ano ia e ka makani o ka ua kea,
 Ke ooki la i ka hu-a o ka hale a moku,
 He kepia ko Hilo-pali-ku,
 He ulu-au ko Waiakea.
 He moani ala ko Puna makani,*

Moving lightly, moving swiftly, moving fast
 Is the cause of the Hilo storm
 It is the wind of ua kea
 Cutting through the edges of the districts
 The kēpia wind is of Hilo pali kū
 The uluau wind is of Waiākea
 The moani‘ala wind is of Puna

*Hoakoa i ka makani a kua mo-a-e,
 Mo-a-e kau malaia ka makani,
 A pa-i-a-haa i kanaka loloa,
 He hau ko Kapalilua,
 He eka ko Kona,
 He ku-pu ko Kahuwa,
 He e-e-le-koa ko Uli,
 He ki-puu-puu ko Waimea,
 He o-lau-niu ko Kekaha,
 He pa-a-laa ma ka moana,
 He nāulu ko Kawaihae,
 He makani hao i ka lau-milo ko Makaopau,*

*A Kalahuipuaa a-paa-paa Kohala ka
 Paliuuka,
 A mahu lele ka makani,
 He puu-kolea ko Kapaau,
 Holo-poopoo ko Waipio,
 O ke a-e-loa ko Hamakua,
 O ka makani o ka lewa o ke kona,
 Kai o ka moana Alenuihaha,
 Pae a-e i ka honua,
 Lele a-e iluna ke 'hu o ke kai,
 Ke 'hu o ka makani la e, - i - no,
 E holo-a mai inehinei i ka la malie,
 Hanua lawa-ia la ka moana,
 O ka hoe la i na waa maikai,
 O ka ikaika la o na hoe waa,
 O ke akamai la o na hookele,
 Aohe moana loa la e na pokii,
 Mea eleele wale hoi ka la malie Oahu
 inehinei,
 E ku-lia mai no mai Hawaii,
 A hele mai ma ka ili o ke kai,
 Noho ana la ia Oahu,
 E hoi-he-ino.*

Companion to the wind of kua moa'e
 The trade wind passes the garden
 And surges to Kanaka loloa
 The hau wind is of Kapalilua
 The 'eka wind is of Kona
 The kupu wind is of Kahuwa
 The 'e'ele koa wind is of Uli
 The kīpu'upu'u wind is of Waimea
 The olauniu wind is of Kekaha
 Smooth on the sea
 The nāulu wind is of Kawaihae
 A wind that comes with force through the
 milo leaves of Makaopau
 Until the upland cliffs of Kohala's 'āpa'pa'a
 wind in Kalāhuipua'a
 The wind vaporously bursts forth
 The pu'u kolea wind is of Kapa'au
 The holopo'opo'o wind is of Waipi'o
 The a'elo wind is of Hāmākua
 The wind in the sky of the leeward side
 Sea of the 'Alenuihāhā channel
 comes ashore
 The sea spray flies up
 The spray of the wind
 Came yesterday during the calm day
 It was the strong breath of the sea
 It's paddling the good canoes
 It's the strength of the paddlers
 It's the knowledge of the navigators
 There is no sea big enough youngsters
 The calm day of O'ahu was dark
 yesterday
 Those from Hawaii greatly desire
 Traveling on the surface of the sea
 To occupy O'ahu
 A storm will return.

O Hilo 'Oe, A Puna Au

The following is a *ko'ihonua* (genealogical chant) that is performed as a *hula pahu* (dance accompanied by drums). Handy and Pukui share their knowledge of *mele ko'ihonua* explaining, "The *mele koi-honua* (adzed earth chant) was one in whose verses were woven genealogy, place names and history. Such "earth-wrought" chants, composed only for the high-born, were tokens of rank and prestige. They had ritualistic and magical potency, were imbued with *mana* (spiritual power)" (1998:197). The following *ko'ihonua* refers to many renowned places from Hilo to Puna (Emerson 1998:104-105).

*O Hilo 'oe, Hilo, muliwai a ka ua i ka lani
 I hana ia Hilo, kōi ana e ka ua
 E halo ko Hilo ma i 'ō, i 'ane 'i
 Lenalena Hilo e, panopano i ka ua
 Ua lono Pilikeko o Hilo i ka wai
 'Ōkakala ka hulu o Hilo i ke anu
 Ua kū o ka pāka 'a ka ua i ke one
 Ua moe 'oni 'ole Hilo i luna ke alo
 Ua hana ka uluna lehu o Hanakahi
 Hā 'ule ka 'ōnohi Hilo o ka ua i ke one
 Loku kapa ka hi-hilo kai o Paikaka
 Hā, ē!*

Thou art Hilo, Hilo, floodgate of heaven
 Hilo has power to wring out the rain
 Let Hilo turn here and turn there
 Hilo's kept from employ, somber with rain
 Pilikeko roars with full stream
 The feathers of Hilo bristle with cold
 And her hail stones smite on the sand
 She lies without motion, with upturned face
 The fireplaces pillowed with ashes
 The bullets of rain are slapping the land
 Pitiless rain turmoiling Paikaka
 So, indeed!

*A Puna au, i Kūki 'i au, i Ha 'eha 'e
 'Ike au i ke 'ā kinolau lehua
 He lā 'au ma lalo o ia pōhaku
 Hanohano Puna e, kehakeha i ka ua
 Kahiko mau nō ia no laila
 He 'āina ha 'aheo loa no Puna
 I ha 'aheo i ka hala me ka lehua
 He maika 'i ma luna, he 'ā ma lalo
 He kelekele ka papa o Maukele
 Kahuli 'Āpua e, keke ana i Maukele.*

In Puna was I, in Kūki 'i, in Ha 'eha 'e
 I saw a wraith of lehua, a burning bush
 A fire-tree beneath the lava plate
 Magnificent Puna, fertile from rain
 At all times weaving its mantle
 Aye Puna's a land of splendor
 Proudly bedight with palm and lehua
 Beauteous above, but horrid below
 And miry the plain of Maukele
 'Āpua upturned, plod on to Maukele.

Nani Wale Nō 'O Pele I Ka Lua

The following *mele* was composed by David Alapa'i of North Kona, Hawai'i. In the notes associated with this *mele*, it is written, "David Alapa'i was born seventy-two years ago [ca. 1851] at Kaloko, North Kona, Hawai'i and has always lived in North Kona. He claims to belong to the family of Pele. The following *mele* was composed by him during the flow of 1919, when he and a woman of the neighborhood went to see the flow and stood in a cave under the flowing lava while he chanted this prayer to Pele, asking her to cease flowing and to spare the people. He had his prayer in a book that he said was snatched out of his hand as if it had been struck. It fell on the lava and he rescued it, but his hand was burned. He protested to Pele that she should not treat one of her own family in that fashion. During the flow, he entreated her. It was a fact of common knowledge that Alapa'i and his friend stood in the midst of the lava and that people of the region thought they had been destroyed and were amazed after the flow that they emerged unharmed." Two of the *mele* that were composed by David Alapa'i are presented below (Pukui 1995:108-109).

*Nani wale nō 'o Pele i ka lua
 Ke 'ūhī 'ūhā mai nei Pele
 Ua hō 'ike a 'e 'oe i kou nani
 I ka wena 'ula i ka maka o ka 'ōpua
 Aia kā 'oe i 'Ālika*

Beautiful art thou O Pele of the pit
 You make such swishing sounds
 You put your beauty on display
 Glowing red before the face of the clouds
 So you are gone to 'Ālika

*I ka 'āina uluwehi i ka lehua
 A e hana 'oe me ka maika'i
 Me ke aloha a i ou hulu maka 'āinana
 Ho 'okahi no lā o ke kahe 'ana
 'Au ana i ke kai malino o Kona
 Ua lawa ke aloha nou e Pele
 Nou a e Pele ua 'ike i kou nani pāha'oha'o.*

The land bedecked with lehua blossoms
 Be kindly in your behavior
 Be merciful to your beloved people
 Only one day the lava flows
 And the calm sea of Kona is reached
 This is enough, with love to you, Pele
 As for me, Pele, I've seen your wondrous beauty.

He Aloha Nō 'O Pele Me Hi'iaka

This *mele* was also composed by David Alapa'i and shared by Pukui (1995:108-109).

*He aloha nō 'o Pele me Hi'iaka
 Na kā'ea'ea noho kuahiwi
 A eia mākou ua hiki mai
 A e 'ike i kou nani pāha'oha'o
 I 'ane'i mākou pau kuhi hewa
 Nā hana kamaha'o āu e Pele.
 Ke hea mai nei Halema'uma'u
 Kō home i ka piko o ke kuahiwi
 Nou nō Hawai'i nei ā puni*

Love to Pele and Hi'iaka
 Mysterious mountain dwellers
 Here we are, for we have come
 To see your wondrous beauty
 Here we know for certain
 Of your wonderful deeds, O Pele.
 Halema'uma'u is now calling
 That home of yours on the mountaintop
 Yours is the upland, yours is the sea
 Yours is the whole of Hawai'i
 Only one day the lava flows
 And it reaches the calm sea of Kona
 This is enough, with love to you, O Pele
 I haven't seen your thrilling beauty.

*Ho 'okahi no lā o ke kahe 'ana
 'Au ana i ke kai malino o Kona
 Ua lawa ke aloha nou e Pele
 Ua 'ike i kou nani ilihia.*

No Luna Ka Hale Kai Nō E Kama'alewa

This *mele* was collected from Kamehaitu Helela of Hanapēpē, Kaua'i and is performed as a *hula ipu wai* (dance performed with a gourd drum). The notes accompanying this *mele* state, "In one version, it is the *lehua* that fear men and go below, but according to some *hula* masters, it is the reverse. According to the latter, the *lehua* was *kapu* for the gods and caused rain when plucked. Hence men left them alone" (Pukui 1995:112-113). This *mele* refers to many famed places throughout Puna.

*No luna ka hale kai nō e kama'alewa
 Nānā nā maka iā Moananuikalehua
 A noi au i ke kai lā e mali'o
 Kū a'e ana he lehua i laila
 Hōpoe lehua a ki'eki'e
 E maka'u ke kanaka i ka lehua
 Lilo i lalo e hele ai
 A i lalo
 'O Kea'au 'ili'ili nehe i ke kai*

From the root-matted mountain retreat
 My eyes look out at Moananuikalehua
 And I beg the sea to be sea
 The lehua trees tall grow there by the sea
 The tall lehua trees of Hōpoe
 Men fear the lehua blossoms and go below
 They walk the ground below
 The pebbles at Kea'au grind in the surf

<i>Ho 'olono ke kai o Puna i ka ulu hala</i>	The sea at Puna seems to shout to the hala groves
<i>Kai ko 'o Puna</i>	Rough is the sea of Puna
<i>Puna a kai ko 'o ia</i>	That is Puna of the rough sea
<i>Nene 'e mai ana kāua e ke hoa</i>	Move close to me, O companion
<i>Ia pili ke waiho 'ē maila 'oe</i>	You keep away so
<i>Eia ka mea 'ino lā he anu</i>	Here is the evil thing, the cold
<i>'A 'ohe anu!</i>	There is no cold!
<i>Mehe mea lā ōlua i waho lā e ke hoa</i>	Yes, there is – when you remain away, O companion;
<i>Mehe wai i lā kō kāua 'ili.</i>	Our skins become clammy and cold.

Noho Nō I Puna Ka Nani Me Ka Maika'i

The following is a *mele ho 'āeae* (love chant) shared by Mrs. Kaimu Kihe of Pu'uanahulu, North Kona. This *mele* was published in the book, *Nā Mele Welo: Songs of Our Heritage* (Pukui 1995:82-83). Included below is a short *mo 'olelo*, followed by the *mele*.

There was a certain man living in Puna who had a wife and then afterwards his friend took away his wife. There upon the husband went to Honolulu and lived in Mānoa alone. There was living at that time in Mānoa a great chanter by the name of Kū. It was his custom to chant when he had 'awa, fish, and poi, and every time he chanted, the boy would cry. One day Kū asked him the trouble, so he related the story of how he lost his wife. Kū took all this down and composed this *mele hula ho 'āeae* or love chant and told him to go back to Puna and that if he would chant it, his wife would surely come back to him. It so happened that he returned to Puna and chanted the *mele*, and the result was that his wife returned to him and they lived happily ever after.

<i>Noho nō i Puna ka nani me ka maika'i</i>	In Puna dwells beauty and goodness
<i>He hale kipa ia no ke 'ala me ke onaona</i>	A house in which fragrance and sweetness dwell
<i>Onaona ka maile me ka hala o Kea'au</i>	Fragrant are the maile and hala of Kea'au
<i>Aloha 'ino ke kupa Kaniahiku</i>	Woe betide the native son of Kaniahiku
<i>Kū mai ka ua nahunahu ki 'eki 'e i luna</i>	When the stormy rains gather high overhead
<i>Ho 'okakano lua i ka la 'i o Wahinekapu</i>	Threatening the peace of Wahinekapu
<i>Puapua 'i maila nā leo 'awahia a ka manu</i>	Gradually louder grew the harsh voices of the birds
<i>Nā kauna 'ōlelo o ka Pu'ulena i ka uka</i>	And the many unkind words of the Pu'ulena breeze of the upland
<i>Ka 'ī mai nō ua lilo o Ma'olala iā Panaewa</i>	Telling me that Ma'olala was taken away by Pana'ewa
<i>He aha nō lā ka hewa ke 'ai 'ia ka 'u hakina</i>	What matters if my leftover food is being eaten
<i>He koena ia na ka manu i 'ai a ha'alele</i>	It is just a remnant eaten by the bird and left
<i>Ke pane maila e hō 'ā 'ā ke kono Waianuheā</i>	The answer left the Waianuheā wind in

<i>Peulaka ū ka hau anu a Kawaiapo</i>	consternation Penetrated to the core with the cold dew of Kawaiapo
<i>‘O ka ‘u hana ‘ike ‘ia, ‘o ke kōnane Helu ‘ekahi au ma ka pūlapu</i>	I am skilled in the game of kōnane And also excel in the art of fooling my opponent
<i>I lono ‘oe ‘o ‘oe nō ka ‘ole he mā‘uka‘uka</i>	Now listen you, you are but a worthless person
<i>He kela ‘oe no mua he huki kaula kau hana</i>	A sailor near the prow who merely pulls on ropes
<i>He pūlumi ‘oe no ka ‘oneki o ka papahale ‘O wau main ō ka ona, ka haku o ko ‘u waiwai</i>	One who sweeps the deck I am the owner, the lord of my possessions
<i>He wahi aloha no puā i ke onaona Ke ‘ala ka paia o Puna.</i>	With love for the gently wafted fragrance The fragrance of the groves of Puna.

‘Auhea ‘O Ka Lani La

This *mele hula* honors the *ali ‘i* Alexander Lunalilo (1835-1874). There are two renowned place names of Puna, Hō‘eu and Kaimū, referred to in this *mele*. Within the *ahupua‘a* of Kalapana in Puna, Hō‘eu is the name given to a celebrated surfing area of Kaimū. This *mele* utilizes these areas in praise of this *ali ‘i* and sheds light on the memory of Puna (Elbert & Mahoe 1970:36).

<i>‘Auhea ‘o ka lani la? Aia i ka he ‘e nalu He ‘e ana i ka lala la, Ho ‘i ana i ka muku.</i>	The royal chief, where is he? There, surfing On the long wave sliding out to sea, On the short wave returning
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<i>A ka nalu o Hō‘eu la E uho ‘i a ‘e kāua A pae a ‘e a i Kai-mū la Ho ‘omū nā kānaka.</i>	On the Hō‘eu surf We both return And land at the Sea-of-crowds Where the natives gather.
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<i>‘Au ‘au i ka wai la, A ‘o Wai- ‘ākōlea, Lu ‘u aku a ea maila, Kānaena o ka lani.</i>	We bathe in the water The water-of-ferns, We plunge and surface, A eulogy for the royal one.
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<i>Ha ‘ina mai ka puana la: Nō Luna-lilo nō he inoa.</i>	Let the theme be said: An honor chant for Luna-lilo.
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Puna Paia ‘A‘ala

Puna paia ‘a‘ala was composed by Queen Lili‘uokalani, as she utilizes the fragrance of Puna to tell her story. Elbert and Mahoe note, “Puna, Hawaii, is associated with

fragrance, especially of pandanus, and fragrance is associated alike with noble birth and love making” (1970:87). These associations may be seen in the following *mele*.

<i>Iā Puna paia ‘a‘ala</i>	In Puna’s fragrant glades
<i>Pili mau nā ke onaona</i>	And ever-present perfume
<i>I laila ke kaunu ‘ana</i>	Passion
<i>Kau pono ana nā ka mana ‘o</i>	Is ever in the thoughts
<i>Puna paia ‘a‘ala</i>	In Puna’s fragrant glades
<i>Kilihea i ke onaona</i>	Are drenched with perfume
<i>‘O nawela i ke aloha</i>	In a tracery of love
<i>Ua lawa iā ‘oe me a‘u</i>	Where you and I suffice.
<i>Ho‘ohihi i ka nani</i>	Entranced with beauty
<i>Pua mai a ka lehua.</i>	The <i>lehua</i> blossoms.
<i>Ānehe au e ki‘i</i>	I come quietly to find
<i>I pua kau nō ku‘u umauma.</i>	A flower to place upon my heart.

Aloha Ka Uka ‘Ōpua Holu I Ka Makani

The following is an *oli ho‘āeae* (chant for a beloved one) shared by David M. Keli‘ikoa of Wai‘ōhinu, Ka‘ū, Hawai‘i (Pukui 1995:76-77).

<i>Aloha ka uka ‘ōpua holu i ka makani</i>	Loved is that upland where the rain clouds are driven by the wind
<i>He home aloha ‘ia na ke ‘ala me ke onaona</i>	The beloved home of fragrance and sweetness
<i>He ipo aloha na‘u ka nani o Kūki‘i e waiho nei</i>	Like a sweetheart to me is the beauty of Kūki‘i lying here
<i>I lohia ‘ia mai e nā lehua o Hōpoe, ‘au i ke kai</i>	Adorned by the lehua of Hōpoe, that reaches out toward the sea
<i>Ke ka‘ika‘i kū ‘ia maila a Kalanamahiki</i>	Kalanamahiki seems to be carried to and fro
<i>Hikiwawe ka hana a ka ua i ka nahele</i>	The rain comes pattering down in haste
<i>Ke ho‘owali ‘ia maila e ka ua Nāulu</i>	Bestirred by the rain clouds above
<i>Kū helahela ke kula o Kamā‘oa nōpu i ka lā</i>	Proudly stands the plain of Kamā‘oa, warmed by the sun
<i>Kukini wela i ka ‘ili o ka malihini</i>	The sun that burns the skin of visitors
<i>Ia ki‘owai pauma ho‘onanea a ka makemake</i>	The water of the pool may be pumped up as leisurely as one desires
<i>Ke ho‘okuene ‘ia maila e ka Waikoloa</i>	The action directed by the Waikoloa breeze
<i>I ke kaomi mālie ‘ia e ka Pu‘ulena</i>	That is being pressed against by the Pu‘ulena breeze
<i>Ke kaiue nome ‘ia maila e ka Inuwai</i>	Tossing and whirling goes the Inuwai breeze
<i>Ha‘u ‘opi ka waha o Hā‘ena i ka makani</i>	Causing Hā‘ena to open its mouth to the wind
<i>Niniau ‘eha i ka pua o ka makemake</i>	Aching and hurt by the flower of one’s desire (woman)
<i>He lei ho‘ohihi na‘u ke aloha ke hiki mai</i>	Love, when it comes, is to me like a lei much admired

<i>Mehe wai mapuna ala i ke alo o nā kuahiwi</i>	Like a spring of water before the face of the mountain
<i>I au hunehune i ke alo o nā pali hekiu</i>	That sends a fine stream trickling down the sheer cliff
<i>He wahi aloha no ku‘u ipo. i ka leo o ke kāhuli</i>	This is my song of love for my sweetheart amid the trilling of the land shells.

I Puna Paia ‘Ala Ku‘u Home

The following *mele* was composed by Joseph Keola Donaghy and performed by Kenneth Makuakāne. The literal translation of this *mele* commemorates the beauty of the upland forest and the celebrated district of Puna (Donaghy & Makuakāne 2013).

<i>Maika ‘i ka nohona o neia ‘āina</i>	Pleasant is the lifestyle of this land
<i>He ‘āina momona ko ka māla pua</i>	The earth of the flower garden is rich and fertile
<i>Maoli pua lauele o ka mana ‘o</i>	The attractive flower whose thoughts wander
<i>I ka pua ‘i wai ‘olu a ‘o Hualani</i>	In the pleasant, gushing water of Hualani
<i>I Puna paia ‘ala ku‘u home</i>	In Puna paia ‘ala, my home
<i>Ka home ho ‘ohie i ka nahele</i>	The exquisite home in the forest
<i>‘Ili mā ‘e ‘ele me ke ohohia</i>	Skin tingling with excitement
<i>I ka ‘ohu pō ‘ai o ka waokele</i>	At the circling mist of the upland forest
<i>E nihi ka hele o lohe ‘ia</i>	Move carefully or you will be heard
<i>E nā manu nonoā noho i ‘ane ‘i</i>	By the gossiping birds here
<i>Pūnono auane ‘i ko pāpālina</i>	And your cheeks will blush
<i>I ka lohe ‘ia mai i ma ‘ukele</i>	Upon being heard in the rain forest
<i>Puana ‘ia mai me ke aloha</i>	Told with love
<i>Ke oho pulu pē i ke kili ua</i>	The fern fronds moist from the sprinkling rain
<i>Ua pono, ua kō, ku‘u ‘i ‘ini</i>	All is well, it is fulfilled, my desires
<i>I Puna paia ‘ala ku‘u home</i>	In Puna paia ‘ala, my home

NĀ ‘ŌLELO NO‘EAU O PUNA

‘*Ōlelo no‘eau*, valuable in perpetuating Hawaiian cultural knowledge, present *kaona* -- a veiled symbolism often used in the Hawaiian language. ‘*Ōlelo no‘eau* are creative expressions that incorporate observational knowledge with educational values, history, and humor. Today, they serve as a traditional source to learn about *kaona*, people, places, and the environment of Hawai‘i. The following ‘*ōlelo no‘eau* were gathered by Mary Kawena Pukui and published in her book titled, ‘*Ōlelo No‘eau Hawaiian Proverbs and Poetical Sayings* (1983). These ‘*ōlelo no‘eau* were included to bring attention to the cultural significance and renowned traditions of Puna.

Puna, mai ‘Oki‘okiaho a Mawae.

Puna, from ‘Oki‘okiaho to Mawae.

The extent of Puna is from ‘Oki‘okiaho on the Ka‘ū side to Mawae on the Hilo side.

Ma‘ema‘e Puna i ka hala me ka lehua.

Lovely is Puna with the hala and lehua.

Refers to Puna, Hawai‘i.

Ke kai kua‘au lehua o Pana‘ewa.

The sea where lehua fringes float about in the shallows.

Long ago, when *lehua* trees grew down to the shore at Puna and Hilo, the fringes of the flowers often fell into the sea, reddening the surface.

Niniu Puna, pō i ke ‘ala.

Puna is dizzy with fragrance.

Puna is a land heavily scented with the blossoms of *hala* and *lehua*.

Nani Puna pō i ke ‘ala.

Beautiful Puna, heavy with fragrance.

Praise for Puna, Hawai‘i, where the breath of *maile*, *lehua*, and *hala* blossoms are ever present.

Ka makani hali ‘ala o Puna.

The fragrance-bearing wind of Puna.

Puna, Hawai‘i, was famed for the fragrance of *maile*, *lehua*, and *hala*. It was said that when the wind blew from the land, fishermen at sea could smell the fragrance of these leaves and flowers.

Ka ua moaniani lehua o Puna.

The rain that brings the fragrance of the lehua of Puna.

Puna is known as the land of fragrance.

Pōki‘i ka ua, ua i ka lehua.

The rain, like a younger brother, remains with the lehua.

Said of the rain that clings to the forest where ‘*ōhi‘a* trees grow.

Hahai no ka ua i ka ululā‘au.

Rains always follows the forest.

The rains are attracted to forest trees. Knowing this, Hawaiians hewed only the trees that were needed.

Welehu ka malama, liko ka ‘ōhi‘a.

Welehu is the month [when] the ‘ōhi‘a trees are putting forth leaf buds.

Puna, kai nehe i ka ulu hala.

Puna, where the sea murmurs to the hala grove.

Puna paia ‘ala i ka hala.

Puna, with walls fragrant with pandanus blossoms.

Puna, Hawai‘i, is a place of *hala* and *lehua* forests. In olden days the people would stick the bracts of *hala* into the thatching of their houses to bring some of the fragrance indoors.

Puna maka kōkala.

Puna of the eyelashes that curve upward like thorns of the pandanus leaves.

The placenta of a newborn was buried under a pandanus tree so the child’s eyelashes would grow long like the pandanus thorns.

Puna, ‘āina ‘awa lau o ka manu.

Puna, land of the leafed ‘awa planted by the birds.

‘Awa kau lā‘au o Puna.

Tree-growing ‘awa of Puna.

Tree-grown ‘awa of Puna was famous for its potency. It was believed that birds carried pieces of ‘awa up into the trees where it would grow.

Ka ‘awa lena o Kali‘u.

The yellowed ‘awa of Kali‘u.

Refers to Kali‘u, Kilohana, Kaua‘i. People noticed drunken rats in the forest and discovered some very potent ‘awa there. There is a Kali‘u in Puna, Hawai‘i, where good ‘awa is also grown.

E nihi ka helena i ka uka o Puna; mai pūlale i ka ‘ike a ka maka.

Go quietly in the upland of Puna; do not let anything you see excite you.

Watch your step and don’t let the things you see lead you into trouble. There is an abundance of flowers and berries in the uplands of Puna and it is thought that picking any on the trip up to the volcano will result in being caught in heavy rains; the picking is left until the return trip. Also said to loved ones to imply, “Go carefully and be mindful.”

Mai hahaki ‘oe i ka ‘ōhelo o punia i ka ua noe.

Do not pluck the ‘ōhelo berries lest we be surrounded by rain and fog.

A warning not to do anything that would result in trouble. It is *kapu* to pluck ‘ōhelo berries on the way to the crater of Kīlauea. To do so would cause the rain and fog to come and one would lose his way. It is permissible to pick them at the crater if the first ‘ōhelo is tossed into the fire of Pele. Then, on the homeward way, one may pick as he pleases.

Nui ka ‘ai ma ke kuahiwi, pu‘u no ka ‘ai, ‘i‘o no ka i‘a.

There is much food in the mountain; pu‘u is food and ‘i‘o is meat.

This was said by the Reverend David Lyman, a missionary, in 1857 when his pupils went with him to the mountain and complained of having no food for the journey – there was an abundance of *hāpu‘u* and *hō‘i‘o* ferns in the mountains.

‘Āina i ka houpo o Kāne.

Land on the bosom of Kāne.

Puna, Hawai‘i. It is said that before Pele migrated there from Kahiki, no place in the islands was more beautiful than Puna.

Ke one lau‘ena a Kāne.

The rich, fertile land of Kāne.

Puna, Hawai‘i, was said to have been a beautiful, fertile land loved by the god Kāne. Pele came from Kahiki and changed it into a land of lava beds, cinder, and rock.

Pō‘ele ka ‘āina o Puna.

The land of Puna is blackened [by lava flows].

Kino lau.

Many bodied.

Said of a god who was able to assume other forms, such as plant, animal, fish, or human, at will. Pele is referred to as *akua kino lau* because of her stability to change into a child, a beautiful maiden, a plain matron, or a very old woman.

Akua lehe ‘oi.

Sharp-lipped goddess.

An epithet for Pele, who devoured even the rocks and trees.

Ka wahine ‘ai pōhaku.

The stone-eating woman.

Pele.

Ka wahine ‘ai lā‘au o Puna.

The tree-eating woman of Puna.

Pele.

Ka wahine ‘ai honua.

The earth-eating woman.

Pele.

Luahine moe nonō.

Old woman who sleeps and snores.

Pele, who is said to sleep in lava beds.

Ke kua a kānāwai.

The back [guarded by] law.

Said of Pele’s back, which was so *kapu* that to stand behind or approach it was punishable by death. Her back was said to be so hot that a bundle of taro leaves placed on it would cook at once. Her priests, chiefs, and certain of her devotees had a similar *kapu* – no one was permitted to walk or pass behind them nor wear anything that had been worn upon such a *kapu* back.

He akua ‘ai ‘opihi o Pele.

Pele is a goddess who eats limpets.

Pele was said to be fond of swimming and surfing. While doing so she would pause to eat seafood.

‘Awili ka nalu, he nalu kapu kai na ke akua.

‘Awili is the surf, a surf reserved for the ceremonial bath of the goddess.

Refers to Pele. There were three noted surfs at Kalapana, Puna: Kalehua, for children and those just learning to surf; Ho‘eu, for experienced surfers; and ‘Awili, which none dared to ride. When the surf of ‘Awili was rolling dangerously high, all surfing and canoeing ceased, for that was a sign that the gods were riding.

‘A‘ohe mā‘alo kanaka o Ho‘okū.

No one passes at Ho‘okū.

Said of a place that is avoided by people fearing trouble. At Ho‘okū, the smoke and heat of Pele were feared.

Lohi‘au Puna i ke akua wahine.

Puna is retarded by the goddess.

Refers to Pele, ruler of volcanoes. The lava flows she pours into the district retard the work and progress of the people.

Weliweli Puna i ke akua wahine.

Puna dreads the goddess.

Puna dreads Pele. Said of any dreaded person.

Maka‘u ka hana hewa i ka uka o Puna.

Wrongdoing is feared in the upland of Puna.

Wrongdoing in the upland of Puna brings the wrath of Pele.

‘A‘ohe ‘ike wale iho ia Mali‘o, i ka huhuki laweau a Uwekahuna.

Mali‘o is not recognized because Uwekahuna is drawing her away.

Said of one who refuses to recognize old friends and associates or is snubbed by friends because they have interests elsewhere. Mali‘o was a mythical woman of Puna whom Pele once snubbed. Uwekahuna is the bluff overlooking the crater of Kīlauea.

‘A‘ohe ‘alawa wale iho ia Mali‘o.

Not even a glance at Mali‘o.

Said of a haughty person. Pele was once so annoyed with Mali‘o and her brother Halaaniani that she turned them both into stone and let them lie in the sea in Puna, Hawai‘i. It was at the bay named after Halaaniani that clusters of pandanus were tossed into the sea with tokens to loved ones. These were borne by the current to Kamilo in Ka‘ū.

Ka wahine alualu pū hala o Kamilo.

The hala-pursuing woman of Kamilo.

A current comes to Kamilo in Ka‘ū from Halaaniani in Puna; whatever is tossed in the sea at Halaaniani floats into Kamilo. Kapua once left her husband in Puna and went to Ka‘ū. He missed her so badly that he decided to send her a pretty loincloth she had made him. This might make her think of him and come back. He wrapped the *malo* around the stem of a *hala* cluster, tied it securely in place with a cord, and tossed it into the sea. A few days later some women went fishing at Kamilo and noticed a *hala* cluster bobbing in the water. Kapua was among them. Eagerly they tried to seize it until one of the women succeeded. Kapua watched as the string was untied and the *malo* unfolded. She knew that it was her husband’s plea to come home, so she returned to Puna.

E mālama i ka iki kanaka, i ka nu‘a kanaka. O kākou no kēia ho‘akua.

Take care of the insignificant and the great man. That is the duty of us gods.

Said by Hi‘iaka to Pele in a chant before she departed for Kaua‘i to seek Lohi‘au.

Ha‘alele i Puna na hoaloha e.

Left in Puna are the friends.

Said of one who has deserted his friends. Originally said of Hi‘iaka when she left Puna.

Ka wahine pō‘ai moku.

The woman who made a circuit of the islands.

Hi‘iaka, who traveled to all of the islands of the Hawaiian group.

Lilo i Puna i ke au a ka hewahewa, ho‘i mai ua piha ka hale i ke akua.

Gone to Puna on a vagrant current and returning, finds the house full of imps.

From a chant by Hi‘iaka when she faced the lizard god Pana‘ewa and his forest full of imps in a battle. It was later used to refer to one who goes on his way and comes home to find things not to his liking.

Hōpoe, ka wahine lewa i ke kai.

Hōpoe, the woman who dances in the sea.

Hōpoe was a dancer of Kea‘au, Puna, in that long ago day when gods mingled with men. Because of her dancing and her kindly nature, Hōpoe was taken by the goddess Hi‘iaka as a favorite friend. When Pele sent Hi‘iaka to Kaua‘i to fetch Lohi‘au, the first request Hi‘iaka made to Pele was to be kind to her friend, Hōpoe. After a time, when Hi‘iaka did not return as expected, Pele in a fit of rage destroyed Hi‘iaka’s grove and the beloved Hōpoe. The latter was changed into a balancing stone that seemed to dance in the sea.

Hao‘e na ‘ale o Hōpoe i ka ‘ino.

The billows of Hōpoe rise in the storm.

His anger is mounting. Hōpoe, Puna, has notoriously high seas.

‘Opihi kauwawe lehua o Hōpoe.

‘Opihi covered by the lehua blossoms of Hōpoe.

The fringes of *lehua* at Hōpoe fall into the sea, and are washed up over the rocks, hiding the *‘opihī*.

Pau Puna ua ko‘ele ka papa.

Puna is ravaged; the foundation crackles.

Said of anything that is entirely consumed. From a chant by Lohi‘au when Pele sent her sisters to overwhelm him with lava.

Ua ‘awa ka luna o Uwēkahuna.

Bitterly cold are the heights of Uwēkahuna.

Said of the wrath of a chief. From a chant by Lohi‘au when he saw the wrath of Pele as she sought to destroy him.

Pōhaku ‘ai wāwae o Malama.

Feet-eating rocks of Malama.

Said of sharp ‘*a‘ā* rocks that make walking with bare feet very painful. This saying comes from a chant by Pa‘oa, friend of Lohi‘au, who went to Kīlauea to seek his friend’s lava-encased remains.

‘A‘ohe o kāhi nānā o luna o ka pali; iho mai a lalo nei; ‘ike i ke au nui ke au iki, he alo a he alo.

The top of the cliff isn't the place to look at us; come down here and learn of the big and little current, face to face.

Learn the details. Also, an invitation to discuss something. Said by Pele to Pā‘oa when he came to seek the lava-encased remains of his friend Lohi‘au.

E Lēkia e, ‘onia i pa‘a.

Lēkia, move that you may hold fast.

Make a move to give yourself a secure hold. Lēkia and Pōhaku-o-Hanalei are stones in Puna. When the demigod Kaleikini came to the district, he dug around Lēkia with the intention of toppling it off the hill. Before he could uproot it, he got hungry and departed. It was then that the other stone, Pōhaku-o-Hanalei, cried out, “*E Lēkia e, ‘onia i pa‘a.*” Lēkia moved downward and held fast. Kaleikini tried in vain after that and was unable to remove Lēkia.

He iki huna lepo mai kēia e pula ai ka maka.

This is a small speck of dust that causes a roughness in the eye.

One may be small but he can still cause distress. This was the retort of Ka‘ehuiki, a shark-god of Puna, when he was taunted for his small size by Kai‘anuialawalu, shark-god of Kīpahulu, Maui.

Hilina‘i Puna kālele ia Ka‘ū, hilina‘i Ka‘ū kālele ia Puna.

Puna trusts and leans on Ka‘ū, Ka‘ū trusts and leans on Puna.

The people of Puna and Ka‘ū are related.

Hilina‘i Puna, kālele ia Ka‘ū.

Puna leans and reclines on Ka‘ū.

Said of one who leans or depends on another. The ancestors of these two districts were originally of one extended family. The time came when those of each district decided to have a name of their own, without breaking the link entirely. Those in Ka‘ū referred to themselves as the Mākaha and those in Puna as the Kumākaha. These names are mentioned in the chants of the chiefs of Ka‘ū.

E ala e Ka‘ū, kahiko o Mākaha; e ala e Puna, Puna Kumākaha; e ala e Hilo na‘au kele!

Arise, O Ka‘ū of ancient descent; arise, O Puna of the Kumākaha group; arise, O Hilo of the water soaked foundation.

A rallying call. These names are found in Ka‘ū and Puna chants of the chiefs. The Mākaha and Ku-mākaha (Like-the-Makaha) were originally one. Some moved to Puna and took the name Kumākaha.

He moku ‘āleuleu.

District of ragamuffins.

Said by Kamehameha’s followers of Ka‘ū and Puna because the people there, being hard-working farmers, lived most of the time in old clothes.

Ka hālau a ‘Ī.

The house of ‘Ī.

The descendants of ‘Ī, who extended through Hāmākua, Hilo, Puna and Ka‘ū. One of these was ‘Īmakakoloa, who was condemned to death by Kamehameha. According to the historian Kamakau, ‘Īmakakoloa was put to death in Kama‘oa. But according to the people of Ka‘ū, a junior kinsman of similar appearance was substituted at the execution.

Ke momole nei no ka mole o ‘Ī.

The ‘Ī chiefs still adhere to their taproots.
The descendants of ‘Ī hold fast.

Mō ke kī la – make!

Cut is the kī – it is death!

Used in riddling contests of old, when persons who failed to guess correctly were often tortured or put to death. A wicked Puna chief once invented a riddle that no one could solve: *He kī e, he kī e, mō ke kī – make!* (It is the kī, it is the kī [when it is] cut [there is] death!) The answer? The parts of the body whose names include the word kī, such as *kīkala* (hip) and *kīhi po‘ohiwi* (shoulder). Many people tried and failed to guess the answer and so were put to death. Finally, an old woman took pity on a youthful contestant and secretly told him the solution. In addition she told the youth about an additional kī that the chief himself had forgotten. On the day of his contest, the youth answered the chief’s riddle. Then he challenged the chief with the same riddle. A dispute arose when the chief denied that there were any other body parts with kī. The youth pointed to the chief’s fingernails (*miki‘ao*) and was declared the winner. The wicked chief was put to death as he had put others to death.

He ‘oi wale aku no o Hua‘ā.

Great indeed was Hua‘ā.

A sarcasm. Hua‘ā was a chief of Puna on Hawai‘i. When the chief of another district threatened to war against him, he hastily sent word to Kamehameha for protection. The latter ordered the war-minded chief to cease his threats.

‘Eu kōlea i kona puapua; ‘eu ke kanaka i kona hanu.

A plover stirs its tail; a man stirs because of the breath within.

Said by Ka‘iana, who led an army in battle under Kamehameha I. When the Puna fighters refused to battle against Keouakuahu‘ula because of their close kinship between their own district and Ka‘ū, Ka‘iana said this to urge them to think of themselves and their own lives. Encouraged, the warriors resumed fighting and won the victory for Kamehameha.

‘Apiki Puna i Lele‘apiki, ke nānā la i Nānāwale.

Puna is concerned at Lele‘apiki and looks about at Nānāwale.

The people are but followers and obedient to their rulers. The people of Puna were not anxious to go to war when a battle was declared between Kiwala‘o and Kamehameha; it was the will of their chief. Lele-‘apiki (Tricky-leap) and Nānā-wale (Just-looking) are places in Puna.

E ake ana e inu i ka wai hū o Ko‘olihilihi.

Eager to drink of the gushing spring of Ko‘olihilihi.

Eager to make love. Ko‘olihilihi (Prop-eyelashes) is a spring in Puna. When royal visitors were expected, the people attached *lehua* blossoms to the *makaloa* sedge that grew around the spring so that when their guests stooped to drink, the *lehua* fringes touched their cheeks and eyelashes. The last person for whom the spring was bedecked was Keohokalole, mother of Lili‘uokalani.

Na niu moe o Kalapana.

The reclining coconut trees of Kalapana.

In ancient times it was a custom in Kalapana, Puna, to force a young coconut tree to grow in a reclining position in commemoration of a chiefly visit. The last two such trees were made to bow to Chiefess Ululani and Queen Emma. On one of Queen Emma’s visits to Puna, she was asked to participate in a commemoration. While mounted on a horse, she held a single coconut leaf

growing from a tree, while the people pulled and strained until the tree was bent. Then the tree was fastened down so that it would grow in a reclining position. These trees are mentioned in chants and songs of Puna.

Na pu'e 'uwala ho'ouwai.

Moveable mounds of sweet potato.

It was the custom of Pūla'a, Puna, Hawai'i, to remove the best mounds of sweet potato, earth and all, to wide strips of thick, coarse *lauhala* mats stretched out on racks. When a chief came on a visit, these mats were placed on the right-hand side of the road and made *kapu*. Should he return, the mat-grown potato field was carried to the opposite side of the road so that it would still be on the right of the traveling chief.

'Ulu pilo.

Stinking breadfruit.

A term of contempt for the *kauwā* of Puna, Hawai'i, comparing them to rotted breadfruit.

Kauwā ke aloha i na lehua o Kā'ana.

Love is a slave to the lehua blossoms of Kā'ana.

Kā'ana is a place between Kea'au and 'Ōla'a where travelers used to rest and make *lei* of *lehua*. It took many blossoms and much patience to complete a *lei*. The *lei* was later given to a loved one.

He iki hala au no Kea'au, 'a'ohē pōhaku 'alā e nahā ai.

I am a small hala fruit of Kea'au, but there is no rock hard enough to smash me.

The boast of a Puna man - I am small, perhaps, but mighty.

Na ka pua'a e 'ai; a na ka pua'a ana paha e 'ai.

[It is] for the pigs to eat; and perhaps the pigs will taste [you].

A reminder to be hospitable to strangers. From the following story: A missionary and two Hawaiian companions arrived hungry and tired in Keonepoko, Puna, after walking a long distance. Seeing some natives removing cooked breadfruit from an *imu*, they asked if they could have some. "No," said the natives, "it is for the pigs to eat." So the visitors moved on. Not long after, leprosy broke out among the people of Puna. The first to contract it were taken to O'ahu and later sent on to Kalaupapa. Others died at home and were buried. When the last ones finally died, there was no one to bury them, and the pigs feasted on their bodies. Thus justice was served.

Ka ua Līhau o Pāhoa.

The Līhau rain of Pāhoa.

The icy cold rain of Pāhoa, Puna, Hawai'i.

Ho'ohewahewa ke aloha, aia i Puna i Nānāwale.

Love failed to recognize him, for it is gone to Puna, to Nānāwale.

Said when an acquaintance or friend merely looks at another and offers no greeting. A play on *nānā-wale* (merely look).

Ke nānā la i Nānāwale.

Just look at Nānāwale.

Said of one who has nothing or no one to look to for help. A play on *nānā-wale* (merely look), a Puna place name.

Ua pae ka wa‘a i Nānāwale.

The canoe landed at Nānāwale.

Said of disappointment. To dream of a canoe is a sign of bad luck. A play on *nānā-wale* (merely look [around at nothing]).

Hele no ka wai, hele no ka ‘alā, wali ka ‘ulu o Halepua‘a.

The water flows, the smooth stone [pounder] works, and the breadfruit of Halepua‘a is well mixed [into poi].

Everything goes smoothly when one is prosperous. A play on *wai* (water) and ‘*alā* (smooth stone). ‘*Alā* commonly refers to cash. In later times, *Hele no ka wai, hele no ka ‘alā* came to refer to a generous donation. Halepua‘a is a place in Puna, Hawai‘i.

Ha‘alele wale iho no i ke kula o Pū‘ula.

For no reason he leaves the plain of Pū‘ula.

He goes off in a huff for no reason at all. A play on *pu‘u*, or *pu‘u ka nuku* (to pout). Pū‘ula is a place in Puna, Hawai‘i.

Mai ka lā ‘ō‘ili i Ha‘eha‘e a hāli‘i i ka mole o Lehua.

From the appearance of the sun at Ha‘eha‘e till it spreads its light to the foundation of Lehua.

Ha‘eha‘e is a place at Kumukahi, Puna, Hawai‘i, often referred to in poetry as the gateway of the sun.

Mai ka ‘ō‘ili ana a ka lā i Kumukahi a ka lā iho aku i ka mole ‘olu o Lehua.

From the appearance of the sun at Kumukahi till its descent beyond the pleasant base of Lehua.

From the sunrise at Kumukahi, in Puna, Hawai‘i, to the sunset beyond the islet of Lehua.

Mai ka hikina a ka lā i Kumukahi a ka welona a ka lā i Lehua.

From the sunrise at Kumukahi to the fading sunlight at Lehua.

From sunrise to sunset. Kumukahi, in Puna, Hawai‘i, was called the land of the sunrise and Lehua, the land of the sunset. This saying also refers to a life span—from birth to death.

Hiki mai ka lā ma Ha‘eha‘e, maluna mai o Kuki‘i.

The sun rises at Ha‘eha‘e, above Kuki‘i.

Ha‘eha‘e, in Puna, Hawai‘i, is often called the gateway of the sun. Kuki‘i is a place in Puna.

Mai ke kai kuwā e nū ana i ka ulu hala o Kea‘au a ka ‘āina kā‘ili lā o lalo o ka Waikū‘auhoe.

From the noisy sea that moans to the hala groves of Kea‘au, to the land that snatches away the sun, below Waikū‘auhoe.

From Puna, Hawai‘i, where the sun was said to rise, to Lehua, beyond Waikū‘auhoe, where it vanishes out of sight.

Keiki kāohi lā o Kumukahi.

The lad that holds back the sun at Kumukahi.

Praise of an outstanding youth of Puna. Kumukahi is the eastern point of Hawai‘i, the place where the sun comes up.

Ke ho‘okumu nei Kumukahi i ka ‘ino.

Kumukahi is brewing a storm.

Said of one whose anger increases. Kumukahi is a point in Puna, Hawai‘i.

Ho‘i ke ao o ke kuahiwi, ho‘i ka makani ia Kumukahi.

The cloud returns to the mountain, the wind returns to Kumukahi.
Said of a group of people dispersed, each going to his own abode.

Aia i Hilo o Alanaio; aia i Puna o Kapoho; aia i Laupāhoehoe o Uleki‘i.

In Hilo is Alanaio; in Puna is Kapoho; in Laupāhoehoe is Uleki‘i.
A vulgar play on place names, calling attention to private parts, which are omens of disappointment when seen in dreams. An expression of contempt for one who brings bad luck. Alanaio (Way-of-the-pinworm), the anus, is in Hilo; Kapoho (The Container), the vagina, is in Puna; and Uleki‘i (Rigid Penis) is in Laupāhoehoe.

Pa‘apa‘akai o Malama.

Crusted with salt is Malama.
Said of a sour situation. Refers to Malama, Puna, Hawai‘i.

Lauahi Pele i kai o Puna, one ‘ā kai o Malama.

Pele spreads her fire down in Puna and leaves cinder down in Malama.
There are two places in Puna called Malama, one inland and one on the shore where black sand (one ‘ā) is found.

Ka ‘ili‘ili o ‘Ā‘alāmanu.

Pebbles of ‘Ā‘alāmanu.
‘Ā‘alāmanu is in Puna, Hawai‘i. The best pebbles of this district were found here and were much liked by the chiefs for the game of *kōnane*.

Ka malu niu o Hu‘ehu‘ewai.

The coconut grove of Hu‘ehu‘ewai.
This grove was in Kaimū, Puna.

Ka līpoa ‘ala o Kalauonaona.

The fragrant līpoa seaweed of Kalauonaona.
The most fragrant *līpoa* seaweed in Puna, Hawai‘i, is found at Kalauonaona (also known as Kalauonaone) in Kaimū.

Ka i‘a ka‘a poepoe o Kalapana, ‘īna‘i ‘uala o Kaimū.

The round, rolling fish of Kalapana, to be eaten with the sweet potato of Kaimū.
The *kukui* nut, cooked and eaten as a relish. This is from a *ho‘opāpā* riddling chant in the story of Kaipalaoa, a boy of Puna, Hawai‘i, who went to Kaua‘i to riddle with the experts there and won.

Kahauale‘a i ke kūkae kupu.

At Kahauale‘a, where the dung sprouts.
The people of Kahauale‘a, Puna, were said to eat *noni* fruit, seeds, and all. The seeds would sprout wherever the people excreted.

Ka ‘alā pa‘a o Kaueleau.

The hard rock of Kaueleau.
A dollar, or a hard, unyielding person. There is a rock at Kaueleau, Puna, Hawai‘i, called the ‘*alā pa‘a*.

Ka ‘ōhi‘a hihipe‘a o Kealakomo.

The entwining ‘ōhi‘a branches of Kealakomo.

Kealakomo, in Puna, Hawai‘i, where ‘ōhi‘a trees grow thickly together.

Ku ke ‘ā i kai o ‘Āpua.

Lava rocks were heaped down at ‘Āpua.

Said of a confusing untidiness, like the strewing of lava rocks, or of utter destruction. ‘Āpua, in Puna, Hawai‘i, is a land of rocks.

Keauhou, kai nehe i ka ‘ili‘ili.

Keauhou, where the sea murmurs to the pebbles.

Keauhou, Puna, Hawai‘i.

Lele Laukī i ka pali.

Laukī leaped of the cliff.

Said when one in desperation does harm to himself. Laukī was a native of Puna who was ashamed after being derided about his small penis, so he committed suicide by leaping off a cliff. Sometimes applied humorously to one who has lost his sexual potency.

Hamohamo i ke kualā o Puna.

Pats the dorsal fin of Puna.

Said of one who is verbally ambitious but does nothing to attain his goal, or of one who is full of flattery and false promises.

‘Inā paha he pua‘a, pau i kālua.

If a pig, [you] would have been roasted.

Said with laughter when a person forgets to come home on time. A straying pig can end up roasted in an *imu*. A common saying in Puna and eastern Ka‘ū.

Pau Pele, pau manō.

[May I be] devoured by Pele, [may I be] devoured by a shark.

An oath, meaning “If I fail...” It was believed that if such an oath were not kept, the one who uttered it would indeed die by fire or be eaten by a shark.

NĀ MO‘OKŪ‘AUHAU A ME ALI‘I

Mo‘okū‘auhau (genealogies) commemorate the connection between the origin of life, the *akua*, the *ali‘i*, and all of their descendants. Traditionally, *ali‘i mo‘okū‘auhau* served as a record of *mana* and level of *kapu* (rank) that was inherited from their *mākua* and *kūpuna*. Each *mo‘okū‘auhau* emphasized a specific chiefly line that was recited to verify the *ali‘i*'s spiritual and political authority.

Beckwith explains the importance of genealogy, “Chiefs who count their genealogy direct from Kane, whether on the Ulu or Nanaulu line, rank among the *hoali‘i* or high tapu chiefs as distinguished from lower grades of chiefs with a less distinguished family genealogy. Descent is therefore of vital importance and the privileges enjoyed by Kane worshipers are on the basis of such rank, which gives them command of tapus comparable to those of the gods...They are ‘chiefs with the tapus of gods’ (*na li‘i kapu akua*) as compared with the tapus enjoyed by the lesser chiefs (*na li‘i noa*)” (1976:49). Kepelino further refers to ruling chiefs stating, “These ruling chiefs were put into the class of gods because of the great power they had and the tapu observed toward them...They had the power over life and death. The chiefs were called ‘*He akua kūmaka* (gods that could be seen)’” (Kepelino & Beckwith 2007:12).

There are many Hawaiian genealogies associated with the origin of the Hawaiian people and the ancestry of *ali‘i*. For example, the Kumulipo names the woman La‘ila‘i, the gods Kāne and Kanaloa, and a man named Ki‘i as those from which the people of Hawai‘i descended (Beckwith 1976:276). There are also certain genealogies that are known to be favored by each island. Beckwith refers to these and writes, “The Kumuhonua tradition, according to which Ho‘okumu-ka-honua (Founding of the race), as his name implies, is the original ancestor, is recited on Moloka‘i. Hawai‘i and Maui genealogists favor the O-puka-honua (Opu‘u-ka-honua) or Budding of the race. O‘ahu and Kaua‘i follow the Kane-huli-honua (Overturner of the race) ancestral line” (1976:307). The *mo‘okū‘auhau* that are included below honor the ancestry of Hawai‘i Island *ali‘i*, some of whom were once the *ali‘i nui* of Puna.

The Kumuhonua Genealogy: Kumuhonua to Kamehameha I

The Kumuhonua genealogy was published in the Hawaiian language newspaper, *Ka Nonanona*, on October 25, 1842. This genealogy provides the lineage of Kumuhonua to Kamehameha I. Edith Kawelohea McKinzie translated an article in the Hawaiian language newspaper, *Ka Maka‘āinana*, (1896) that refers to changes that occurred during the generations from Kumuhonua to Kamehameha I (McKinzie & Stagner vol.1:1983:1). McKinzie writes, “The first period was the period spoken of as ‘a period of darkness when deities were the inhabitants’ of Hawai‘i nei. This period begins from Kumuhonua to Wākea. From Wākea to Heleipawa is the second period. This is the period understood as belonging to the time of the chiefs and the power. From Heleipawa to ‘Umi-a-Liloa is the third period. This period is believed to be the time the chiefs were born together with their genealogies and with the chants. And all the true chiefs living can begin [to reckon] from ‘Umi without errors. Therefore, ‘Umi is like the parent of the chiefs who are living.

From ‘Umi to Kamehameha is the fourth period. This is the period that is known for the history of the individual chiefs and their famous deeds.” Kamakau also shares his knowledge of the changes that took place during the time of Wākea and Papa, “Before the time of Wākea and Papa, all people were of one class; they were not divided into chiefs, priests, and commoners; they were all mixed together...After the time of Wākea and Papa, people were divided into chiefs, priests, commoners, and outcasts: *ali‘i, kahuna, maka‘āinana, and kauwā*” (Kamakau; Barrère; Pukui 1991:35).

In the following genealogy there are certain names that are accompanied by symbols. These symbols represent additional notes that are located at the end of the genealogy. Presented below is an excerpt from the Hawaiian language newspaper, *Ka Nonanona*, followed by an English translation and the genealogy of Kumuhonua.

Ke Kuauhau no na Kupuna kahiko loa mai o Hawaii nei, a hiki mai ia Wakea. Mai ia Wakea mai a hiki mai i keia Manawa a kakou e noho nei, i mea e maopopo ai i keia hanauna; a ia hanauna aku ia hanauna aku.
[Oct. 25, 1842]

This genealogy is about the very ancient ancestors of Hawaii to Wakea, from Wakea until this time in which we live in order that today’s generation understand and know this generation (1842) and all generations to come (McKinzie & Stagner vol.1:1983:xix).

<i>Kāne (Man)</i>	<i>Wahine (Woman)</i>	<i>Keiki (Child)</i>
1. O Kumuhonua	O Haloiho	O Ahukai
2. O Ahukai	O Holehana	O Kapili
3. O Kapili	O Alonainai	O Kawakupua
4. O Kawakupua	O Heleaeiluna	O Kawakahiko
5. O Kawakahiko	O Kahohaia	O Kahikolupa
6. O Kahikolupa	O Lukaua	O Kahikoleikau
7. O Kahikoleikau	O Kupomaikaikaelene	O Kahikoleiulu
8. O Kahikoleiulu	O Kanemaikaikaelene	O Kahikoleihonua
9. O Kahikoleihonua	O Haakookeau	O Haakoakoalaulani
10. O Haakoakoalaulani	O Kaneiakoakanioe	O Kupo
11. O Kupo	O Lanikupo	O Nahaeikekua
12. O Nahaeikekua	O Hanailuna	O Keakenui
13. O Keakenui	O Laheamanu	O Kahianahinakii Y
14. O Kahianahinakiiakea Y	O Luanahinakiipapa	O Koluanahinakii
15. O Koluanahinakii	O Hanahina	O Limanahinakii
16. O Limanahinakii	O Onohinakii	O Hikuanahina
17. O Hikuanahina	O Waluanahina	O Iwahina
18. O Iwahina	O Lohanakiipapa	O Welaahilaninui
19. O Welaahilaninui	O Owe	O Kahiko
20. O Kahiko I	O Kupulanakehau	O Wakea
21. O Wakea	O Papa (a)	O Hoohokukalani (a)
	O Hoohokukalani (b)*	O Haloa (b)

22. O Haloa	O Hinamanaoluae	O Owaia
23. O Owaia	O Huhune	O Hinanalo Y
24. O Hinanalo	O Haunuu	O Nanakaihili
25. O Nanakaihili	O Haulani	O Wailoa
26. O Wailoa	O Hikawaoopuaianea	O Kio
27. O Kio	O Kamole	O Ole
28. O Ole	O Hai	O Pupue
29. O Pupue	O Kamakele	O Manaku
30. O Manaku	O Hikohaale	O Kahiko II
31. O Kahiko II	O Kaea	O Luanuu I
32. O Luanuu I	O Kowaamaukele	O Kii
33. O Kii	O Hinakoula	O Ulu (a)
		O Nanaulu (b)
34. O Nanaulu*	O Ulukae	O Nanamea
35. O Nanamea	O Puia	O Pehekeulu
36. O Ulu*	O Kapunuu	O Nana (a)
		O Kapulani (b)#
		O Nanaie (c)
37. O Nanaie	O Kahaumokuleia	O Nanailani
38. O Nanailani	O Hinakinau	O Waikulani
39. O Waikulani	O Kekauilani	O Kuheleimoana
40. O Kuheleimoana	O Mapunaiaala	O Konohiki
41. O Konohiki	O Hikaululena	O Wawana
42. O Wawana	O Hinamahuia	O Akalana
43. O Akalana	O Hinakawea	O Mauimua (a)
		O Mauihope (b)
		O Mauikiiki (c)
44. O Mauiakalana	O Hinakealohaia	O Nanamaoa
45. O Nanamaoa	O Hinakapaikua	O Nanakulei
46. O Nanakulei	O Kehaukuhonua	O Nanakaoko
47. O Nanakaoko	O Kahikiokalani	O Heleipawa
48. O Heleipawa	O Kookookumailani	O Hulumanailani
49. O Hulumanailani	O Hinamaikalani	O Aikanaka
50. O Aikanaka	O Hinahanaiakamalama	O Puna (a)
		O Hema (b)
51. O Puna X	O Hainalau	O Ua
52. O Ua	O Kahilinai	O Auanini
53. O Hema X	O Ulamakehoa	O Kahai
54. O Kahai	O Hinauluohia	O Wahieloa
55. O Wahieloa	O Hoolaukahiki	O Laka
56. O Laka	O Hikawaelena	O Luanuu I
57. O Luanuu I	O Kapokuleiula	O Kamea
58. O Kamea	O Popomalili	O Pohukaina
59. O Pohukaina	O Huahuakapalei	O Hua
60. O Hua	O Hikimoluloleo	O Pau
61. O Pau	O Kapohakia	O Huanuiikalalailai

62. O Huanuiikalalailai	O Kapoea (a) δ O Molehai (b) δ	O Paumakua (a) O Kuhelani (b)
63. O Kuhelani φ	O Lanileo	O Hakalanileo
64. O Hakalanileo	O Hoohookalani	O Kana
65. O Paumakua φ	O Manokalililani	O Haho
66. O Haho	O Kauilaianapu	O Palena
67. O Palena	O Hikawai	O Hanalaanui (a) O Hanalaaiki (b)
68. O Hanalaaiki ∓	O Kapukapu	O Mauiloa
69. O Mauiloa	O Kauhua	O Alau
70. O Hanalaanui ∓	O Mahuie	O Lanakawai
71. O Lanakawai	O Kalohialiiokawai	O Laau
72. O Laau	O Kukamolimolialoha	O Pili
73. O Pili	O Hinaaaauaku	O Koa
74. O Koa	O Hinaauamai	O Loe
75. O Loe	O Hinamailelii	O Kukohou
76. O Kukohou	O Hinakeuki	O Kaniuhi
77. O Kaniuhi	O Hiliamakani	O Kanipahu
78. O Kanipahu ∅	O Hualani (a)	O Kanaloa (a) O Kumuokalani (b) O Laaikiahualani (c) O Kalahumoku (d) O Huanuimaka- -nalenale (a)
	O Alaikauakoko (b)	O Kalapana- -kuioiomoa
79. O Kanaloa λ	O Makoani	O Keliiokapolohaina
80. O Huanuimakanalenale λ	O Kumuokalani	O Iikialaamea
81. O Kalahumoku λ	O Laamea	O Hauakalama (a)
82. O Iikialaamea	O Kalamea (a)	O Kamanawakala- -mea (b)
83. O Kalapanakuioimoa	O Makeamalamaihanai	O Kahaimoeleaikaai- -kapukupou
84. O Kahaimoeleaikaai-	O Kapoakaulukailaa	O Kalaunuiohua- -kapukupou
85. O Kalaunuiohua	O Kaheka	O Kuaiwa
86. O Kuaiwa	O Kamuleilani	O Kohokapu (a) O Hukulani (b) O Manauea (c)
87. O Kahoukapu ∓	O Hukulani (a) ∓	O Makalae (a)
88. O Makalae λ	O Halolena O Kalanamowaiku	O Ikiahalolena O Kaueliamakalae
89. O Kauholanuimahu λ	O Neula	O Kihanuilulumoku
90. O Kihanuilulumoku	O Waioalea	O Liloa
91. O Liloa	O Pinea I (a) O Akahikuleana (b)	O Hakau (a) # O Umi (a)

92. O Hakau	O Kukukalaniapae	O Pinea II **
93. O Keanomeha	O Pinea II **	O Hakaukalalapuakea
94. O Umi #	O Ohenahena (a)	O Kamolanuiaumi (a)
	O Kulamea (b)	O Kapunana-
		-huanuiaumi (a)
	O Makaalua (c)	O Nohoami (a)
	O Kapulani (d)#	O Keliioakaloa (a)
		O Keawenuiaumi (b)
		O Kapulani (c)
	O Piikea (e)	O Aihakoko (a)
		O Kumalae (b)
	O Mokuahualeiakea (f)	O Akahiilikapu (a)
95. O Kapunanahuanuiaumi. ∴	O Kauo	O Kameakauo (a)
		O Keliiakauo (b)
96. O Nohoami	O Kauoliuli	O Kailiokiha
97. O Kumalae ∴	O Kunuunuunui puwalaau	O Makua
98. O Keliioakaloa	O Makuwahineopalaka (a)	O Kukailani (a)
	O Heluanuu (b)	O Kaohukiokalani (a)
	O Hikaalani (c)	O Hoikahu (a)
		O Aukapu (b)
99. O Kahakumakaliua	O Akahiilikapu **	O Koihalawai (a)
		O Keliiohiohi (b)
100. O Keawenuiaumi ∞	O Kamolanuiaumi (a)	O Kapohelemai (a)
	O Hakaukalalapuakea (b)	O Iiilikikuahine (a)
	O Koihalawai (c)	O Kanaloakuaana (a)
	O Hoopiliahae (d)	O Umiokalani (a)
101. O Kukailani	O Kaohukiokalani	O Kaikilani (a)
		O Makakaulii (b)
102. O Kanaloakuaana	O Kaikilani	O Keliioakalani (a)
		O Keakealanikane (b)
		O Kalanioumi (c)
103. O Makakaulii	O Kapukamola (a)	O Iwikauikawa (a)
	O Kaakauuwao (b)	O Kapukini (a)
		O Keawenui-
		-hookapulani (b)
		O Uminuikukai-
		-lani (c)
		O Pueopokii (d)
104. O Keakealanikane ∩	O Keliioakalani ∩	O Keakamahana
105. O Iwikauikaua ζ	O Keakamahana (a) ζ	O Keakealani (a)
	O Kauakahikuaanaukane (b)	O Kaneikauaiwi-
		-lani (a)
	O Kapukini (c)	O Kamakehauoku (a)
106. O Uminuikukailani ∅	O Kalanioumi (a) ∅	O Kanaloakapu-
		-lehu (a) ζ
	O Ihele (b)	O Kapulehuaihele (a)

107. O Kaneikauaiwilani ⊥	O Keakealani ⊥	O Kalanikauleleiaiwi
108. O Kanaloakapulehu	O Keakealani ∇	O Keawe
109. O Keawe	O Lonomaaikanaka (a)	O Kalaninuia- -mamao (a)
	O Kalanikauleleiaiwi (b)	O Keeaumoku (a)
	O Kauhiokeka (c)	O Kekela (b)
110. O Lonoikahaupu	O Kalanikauleleiaiwi	O Kekaulike (a)
111. O Kalaninuuiamamao	O Kamakaimoku	O Keawepoepoe
		O Kalaninuiei- -wakamoku
	O Kekaulike	O Keawemauhili
112. O Keeaumoku	O Kamakaimoku	O Kalaninuikupuapa- -ikalaninui
113. O Haae	O Kekela	O Kekuiapoiwa
114. O Kalaninuieiwakamoku	O Kalola	O Kiwalao
115. O Kiwalao	O Kekuiapoiwa	O Kalanikauikaalaneo
116. O Kalanikupuapaikalani	O Kekuiapoiwa	O Kamehameha
		O Kepookalani
117. O Kamehameha	O Kalanikauikaalaneo	O Liholiho
		O Kauikeaouli
		O Nahienaena

Υ These are the same person. The spellings differ in the original newspaper listings.
* Please observe that Ulu and Nanaulu are brothers and that Ulu is *not* the son of Nanamea and Puia.

⌘ Please observe that Puna and Hema are brothers and that Hema is *not* the son of Ua.

δ These are both wives of Huanuikalalailai with their issue.

φ These are brothers with the same father but different mothers.

In this book there are three Kapulani (w) listed: The wife of Ulu, the wife of ‘Umi, and the daughter of ‘Umi and Kapulani.

⊘ These are brothers but only the Hanalaanui line is kept here.

∅ Kanipahu had two wives and five offspring

⌚ This is a *pi’o* or brother-sister marriage

λ These are half-brothers with the same father but different mothers.

Ω Fornander says that Liloa and Pinea also had a daughter Kapukini (sometimes called Kapulani) who later married her half-brother ‘Umi.

** Please note that this is a female rather than a male succession.

∴ These are the *hiapo* successions, i.e. the succession went from the first son to the first wife to the first son of the second wife and so on down. See also lines 78, 79, 80, and 81 relating to the Kanipahu succession.

∞ Note that this is also a *hiapo* succession but now to the second son of the forth wife.

∩ Note the *pi’o*, or full brother, full sister marriage

ζ Note the *naha*, or half-brother, half-sister marriage

∅ Note the nephew-aunt marriage

⊥ Please note the *naha* marriage between half-brother and half sister.

∇ Note the first-cousin marriage.

The Kānehulihonua Genealogy: Kānehulihonua to Wākea

The Kānehulihonua genealogy was published in Kamakau’s book, *Tales and Traditions of the People of Old* (2010:131). Beckwith shares her knowledge of Kānehulihonua, “In the legend of Kualī’i it is the genealogical tree which leads down to Kamehameha. It names Kane-huli-honua and his wife Ke-aka-huli-lani as the first parents after the group of gods” (1976:309). Kamakau further explains Kānehulihonua and writes, “In the many genealogies, there are many names given to this man; in some, he is called Kumuhonua, in some Kuluipo, in some Kumuuli, and in some Hulihana. Kāne-huli-honua the husband and Ke-aka-huli-lani the wife are progenitors of the People of Hawai’i and of all those who dwell in the islands of the Pacific, in Kahiki-kū and Kahiki-moe, and in other lands...Hulihonua was the husband, Ke-aka-huli-lani was the wife; Kumuhonua was the husband, Hālōiho was the wife. They were called by the people of Hawai’i the *pali pa’a*, “firm cliffs” of mankind. From them descended Wākea, Līhau’ula, Maku’u. The chiefs came from Hāloa, the son of Wākea; the priests from Līhau’ula; and the retainers, *kānaka*, from Maku’u” (Kamakau; Barrère; Pukui 2010:131-153). In the genealogy of Kumu Uli, Hulihonua is shown as a direct descendant of the *akua*. Beckwith refers to the Kumu Uli genealogy stating, “It resembles the Kumu-honua up to a certain point, but differs in that it opens with the gods Kane, Kanaloa, Kauakahi, and their sister Maliu and wife Ukina-opiopia as ancestors of Hulihonua, and leads down through Laka instead of Pili to Wakea” (1976:309).

This portion of the Kumu Uli genealogy is shown below and followed by the genealogy of Kānehulihonua:

<i>Kāne (man)</i>	<i>Wahine (woman)</i>
1. Kane	
Kanaloa	Ukina-opiopia
Kauakahi	
Maliu (w)	
Hulihonua	Keakahulilani
Laka	
Kamooalewa	
Maluakapo	
2. Laka	Kapapaiakele
3. Kamooalewa	Olepuukahonua...

The following is the genealogy of Kānehulihonua:

<i>Kāne (man)</i>	<i>Wahine (woman)</i>	<i>Keiki (child)</i>
Kanehulihonua	Keakahulilani	Laka
Laka	Kapapaialaka	Kamooalewa
Kamooalewa	Olepuukahonua	Maluapo
Maluapo	Laweakea	Kinilauemano
Kinilauemano	Upolu	Halo
Halo	Kiniewalu	Kamanookalani

Kamanookalani	Kalanianoho	Kamakaokalani
Kamakaokalani	Kahuaokalani	Keohookalani
Keohookalani	Kamookalani	Kaleiokalani
Kaleiokalani	Kaopuahiki	Kalalii
Kalalii	Keaomele	Haule
Haule	Loaa	Nanaea
Nanaea	Walea	Nananuu
Nananuu	Laloohana	Lalookona
Lalookona	Lalohoaniani	Honuapoiluna
Honuapoiluna	Honuapiilalo	Kinikini
Kinikini	Polehulehu	Pomanomano
Pomanomano	Pohakoikoi	Kupukupuanuu
Kupukupuanuu	Kupukupualani	Kamoleokahonua
Kamoleokahonua	Keaokahonua	Kapaiaokalani
Kapaiaokalani	Kanikekaa	Ohemoku
Ohemoku	Pinainai	Makulu
Makulu	Hiona	Milipomea
Milipomea	Hanahanaiau	Hookumukapo
Hookumukapo	Hoao	Lukahakona
Lukahakona	Niau	Kukalaniehu
		Kupulanakehau
Kahiko Luamea	Kupulanakehau	Wakea

Chiefs of Hawai‘i: Hāloa to Kamehameha III

This genealogy was published in the Hawaiian language newspaper, *Ke Kumu Hawai‘i*, on August 19, 1835 under the title, *No na alii o na moku o Hawaii ke kuauhau no na alii o Hawaii*. This is a genealogy of the chiefs of Hawai‘i from Hāloa, the son of Wākea, to Kamehameha III, Kauikeaouli (McKinzie & Stagner 1983, vol.1:xiv). Kamakau refers to the separation of the Maui and Hawai‘i *ali‘i* lineage and shares, “Hanala‘a-nui was the ancestral chief for those of Hawai‘i and Hanala‘a-iki for those of Maui” (1991:37). In the following genealogy, Hanala‘anui is referred to as Hana, from which the Hawai‘i Island chiefs descend.

Kāne (man)	Wahine (woman)
O Hāloa	O Hinamanaouluae
O Waia	O Huhune
O Hinanalo	O Haunuu
O Nakehili	O Haulele
O Wailoa	O Hikokuanea
O Kio	O Kamole
O Ole	O Haii
O Pupue	O Manaku
O Manaku	O Hikoheale
O Kahiko	O Kaea
O Nuanuu	O Kapokuleiula
O Mawi	O Hinakealohaina

O Nanamaoa	O Hinakapaikua
O Nanakuae	O Keaukuhonua
O Nanakaoko	O Kahihiokalani
O Heleipawa	O Kookookumaikalani
O Hulumalailani	O Hinamaikalani
O Aikanaka	O Hinahanaiakamalama
O Hema	O Ulemaheha
O Kahai	O Hinauluohia
O Wahieloa	O Hoolaukahili
O Laka	O Hikauailena
O Luanuu	O Kapokuleiula
O Kamea	O Popomaili
O Hua	O Kapoea
O Pao	O Manokalililani
O Hoaho	O Kauileanapa
O Palena	O Hikawainui
O Hana	O Mahuia
O Lonokawai	O Kolohialiiokawai
O Laau	O Kukamolimolialoha
O Pili	O Hinaupu
O Koa	O Hinaumai
O Loe	O Hinakalili
O Kukehau	O Hinakeuki
O Kaniuhi	O Hiliamakani
O Kanipahu	O Alaikauakoko
O Kalapana	O Makeamalamaihanai
O Kahaimoeleikaakupou	O Huailikapu
O Kalaunuiohua	O Kaheka
O Kuaiwa	O Kamuleilani
O Kahoukapu	O Laakapu
O Kauhola	O Neula
O Kiha	O Waiolea
O Liloa	O Akahiakuleana
O Umi	O Kapukini
O Kealiiokaloa	O Makuawahineopalaka
O Kukailani	O Kaohukiokalani
O Makakaualii	O Kapukamola
O Iwikauikaua	O Keakamahana
O Kanaloakapulehu	O Keakealani
O Keawe	O Kalanikauleleiewi
O Kalaninuieaumoku	O Kamakaimoku
O Kalanikupuapaikalaninui	O Kekuiapoiwa
O Kamehameha	O Kai
O Liholiho	O Kamamalu
O Kalanikauikeaouli	

TRADITIONAL LAND USE IN WAO KELE O PUNA

The Native Hawaiian relationship with the *‘āina* is spiritually guided by reverence and a deep seeded respect. This connection is depicted in the Kumulipo, a highly detailed genealogical creation chant, where *kānaka* descend from Papahānaumoku, Earth Mother, and Wākea, Sky Father. Therefore, to disrespect the land is to disregard one’s *‘ohana*. So sustaining a *pono* connection to the *‘āina*, or that which feeds, is essential to the balance of all life and to the well being of our society. The following section discusses traditional ecological zones, land divisions, stewardship practices, and place names of the region, as well as traditional land management and cultural practices that occurred within and around the Wao Kele O Puna.

Traditional Ecological Zones

Hawaiians generally did not inhabit the mountainous upland areas of the Hawaiian Islands. These areas were cold, wet and not as hospitable as lower elevations. The mountain regions did, however, supply important raw materials and were visited to exploit these resources. Trees growing in the mountains were cut for wood used to make canoes, bowls, tools, weapons, musical instruments and god images; birds were caught for their feathers, which were used in capes, helmets, *kahili* and *lei*; ferns and foliage were gathered for decoration and other purposes; the *‘ie‘ie* vine (*Freycinetia arborea*), was used to make fish traps, feather helmets, god images, musical instruments, twined baskets and other such things (Krauss 1993).

The extent to which people in Puna visited the area of the present day WKOP Forest Reserve, and the circumstances surrounding these visits, is not known and can only be inferred. However, the area is rich in natural resources, and it was undoubtedly a place where Hawaiians came for bird catching, wood harvesting, gathering of plants, and as a thoroughfare into the *mauka* portions of the island. Additionally, from sources such as Pukui, we get a glimpse of the types of activities that occurred at different elevation zones in Ka‘ū, the *moku* directly to the south of Puna and close to the WKOP region (Figure 20). The traditional ecological zones that Handy and Pukui (1998) list include:

Piko - (13,000 ft.) Moku Aweoweo Crater, Summit

Kua lono - (11,000–10,000 ft.)

Ma‘u kele or **Wao kele** - (8,000–7,000 ft.)

Wao akua - (6,000–5,000 ft.)

Wao nahele or **Wao lā‘au** - (5,000–4,000 ft.)

Wao ‘ama‘u or **Wao kānaka** - (3,000 ft.)

Wao ‘ilima - (2,000 ft.)

Kula uka - (1,000 ft.)

Kula kai - (1,000–500 ft.)

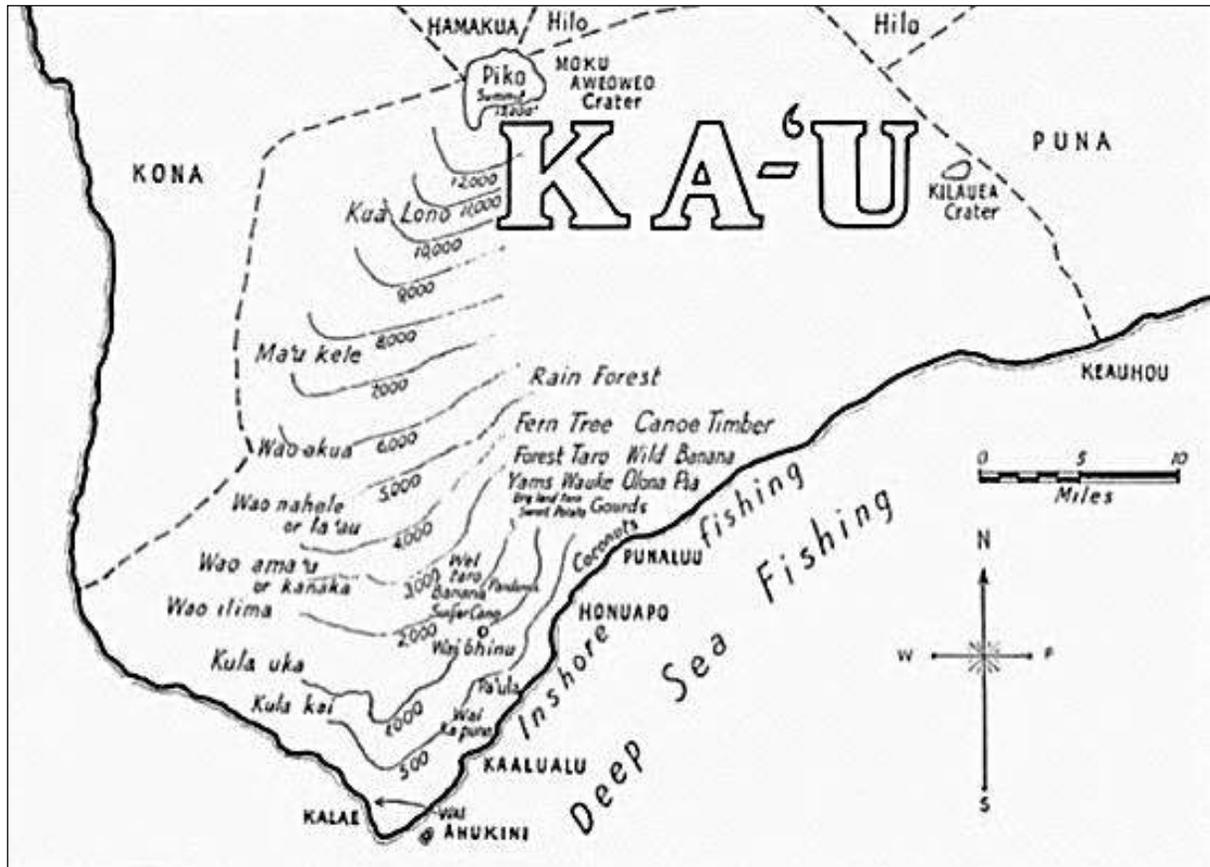


Figure 20. Traditional ecological zones identified by Handy and Pukui (1998).

Pualani Kanaka'ole Kanahale also shares her extensive knowledge about the horizontal and vertical land divisions in the Hawaiian landscape in the *Wao Akua: Sacred Source of Life* (Division of Forestry and Wildlife 2003:8-14):

Horizontal and Vertical Land Divisions: the most familiar divisions when talking about the Islands are the vertical ones...common sections found on today's maps and the boundary lines run from the mountain to the ocean. The vertical boundaries depended upon the mountains, rivers, streams and cinder cones as the demarcation features. These were considered political boundaries because they separated the chiefdoms...some of these are known as *ahupua'a*...still smaller vertical land sections lie within an *ahupua'a*.

Horizontal divisions, in contrast, did not use land features to demarcate boundaries but used instead the vegetation growth or the forest was the food source and therefore a vital system for the continuum of life and life cycles. The trees housed the seeds and/or spores for regeneration. They also acted as food sources for birds, insects, animals and man. The forest provided vegetation used for medicinal and spiritual purposes, adornment, housing, dyes, clothing, games and many more useful things.

The typical horizontal divisions that were recognized by our ancestors are still recognized today. Here are the names of some of these horizontal spaces and the kinds of flora typical of each:

Kuahiwi. The mountaintop. A very sacred area because of its height.

Kualono. The region near the mountaintop. Very little vegetation grows in this area. The *māmane* (*Sophora chrysophylla*) and *naio* (*Myoporum sandwicense*) are the only hardy trees to grow here. Both of these are hardwood trees. The flower of the *māmane* was special to the ali'i (*chief, chiefess*); when wanting a special *lei* he sent his runners to fetch this flower because of its shape and yellow color. 'A'ali'i (*Dodonaea*, all species) can also be found at this height.

Wao ma'ukele. The region names because of the wet, soggy ground. This area is located in the rain belt of the island, especially on the *ko'olau* (Windward side) side of each island. The trees of this area are the very large *koa* (*Acacia koa*) and 'ōhi'a (*Metrosideros macropus*), varieties of lobelia and *māmane*. These are the typical trees of the area. There are other trees but the *koa* and 'ōhi'a dominate the canopy.

Wao akua. The forested region below the *wao ma'ukele*. This is said to be occupied by spirits of the forest. Mankind seldom ventured into this area during ancestral times, except when a particular kind of tree was needed and could not be found elsewhere. The large trees acquired from the *wao akua* and the *wao ma'ukele* (Wao Kele O Puna Natural Area Reserve lies within these two horizontal divisions) deserved substantial offerings. This is the region where the forest had a greater variety of trees. The trees in this area should be healthy so as to supply seeds and regenerate new growth to keep the forest alive. Some of the trees and plants are *alani* (*Pelea sandwicensis*), *hō'awa* (all Hawaiian species of the genus *Pittosporum*), *koa*, *kōpiko* (genus *Psychotria*), *maile* (*Alyxia olivaeformis*), *maua* (*Xylosma hawaiiense*) and 'ōhi'a.

Wao kanaka. The forested region ma kai (towards the sea) of the *wao akua*. This area was frequented by man. He found wood for weapons, making his house, tools, surfboards and canoe accessories; he also harvested dye, collected medicine and bird feathers, gathered vegetation for lei, gathered vegetation for the *kuahu* (alter), material for making rope and many other useful things for everyday living. The trees in the *wao akua* area also found in this area but the trees may be smaller. Other flora found in

this area are *hāpu‘u* (*Cibotium splendens*), *hau kuahiwi* (*Hibiscadelphus*), *hōlei* (*Ochrosia compta*), *māmaki* (*Pipturus* spp.), *‘ōlapa* (*Cheirodendron*), *palapalai* (same as *palai*, a fern), *pāpala* (*Charpentiera*), *pilo* (*Hedyotis*), to name a few.

Kula. The upland grassy plains. Some areas of an island had a very large *kula* area, as opposed to other areas that had very narrow or no grassy land section at all. A few of the most well known plants of the *kula* area are *‘a‘ali‘i*, *ama‘u* (all species of an endemic genus of ferns, *Sadleria*), *‘ilima* (all species of *Sida*), *ma‘o* (*Gosspyium sandvicense*), *pili* (*Heteropogon contortus*) and *uluhe* (all Hawaiian species of false staghorn fern).

Kahakai. The edge of the ocean. At the *kahakai* were found the *alahe‘e* (*Canthium odoratum*), *hala* (*pandanus*, *Pandanus odoratissimus*), *hau* (*Hibiscus tiliaceus*), *kamani* (*Calophyllum inophyllum*), *kauna‘oa* (*Cuscuta sandwichiana*), *lama* (all endemic kinds of ebony), *milo* (*Thespesia populnea*), *naupaka* (*Scaevola*) and *niu* (coconut). All these plants were useful to the Hawaiian and make life bearable for man on these islands.

Philosophy and Relationship to the Forest: these divisions provide the following insights into what was and is important to the quality of life for the Hawaiian – his relationship to his environment and especially his relationship to the land – because he was and is a creature of the land.

-Hawaiians recognized and acknowledged the importance of vegetation. Land sections are identified by the change of flora – thick vegetation in the lower forests to thin vegetation in the uplands and grassy upland plains to lowland/beach vegetation.

-Hawaiians put high cultural value on older or larger trees and thick *kīpuka* (opening in a forest; clear place or oasis within a lava bed where there may be vegetation) that normally housed older trees.

-Hawaiians did not as matter of course penetrate the *wao ma‘ukele* or *wao akua* if the trees they needed could be gotten elsewhere, because of the priority of promoting new growth through non-disturbance of seed-producing forest areas.

-Hawaiians realized the importance of the food source and the regenerative energy of the forest. Therefore it was necessary to leave some areas or groves of trees as they stood originally, thus the name *wao akua*. (Division of Forestry and Wildlife 2003:8-14)

Additionally, Kepa Maly (2001) also writes about the horizontal zones within the Hawaiian cultural landscape as originally published in *Ka Hoku o Hawai'i* on September 21, 1916:

- | | |
|---|--|
| 1 - <i>Ke kuahiwi</i> | The mountain |
| 2 - <i>Ke kualono</i> | The region near the mountain top |
| 3 - <i>Ke kuamauna</i> | The Mountain top |
| 4 - <i>Ke ku(a)hea</i> | The misty ridge |
| 5 - <i>Ke kaolo</i> | The trail ways |
| 6 - <i>Ka wao</i> | The inland regions |
| 7 - <i>Ka wao ma'u kele</i> | The rain belt regions |
| 8 - <i>Ka wao kele</i> | The rain belt regions, rain forest |
| 9 - <i>Ka wao akua</i> | The distant area inhabited by gods |
| 10 - <i>Ka wao lā'au</i> | The forested region |
| 11 - <i>Ka wao kānaka</i> | The region of people below |
| 12 - <i>Ka 'ama'u</i> | The place of 'ama'u (upland agricultural zone) |
| 13 - <i>Ka 'āpa'a</i> | The arid plains |
| 14 - <i>Ka pahe'e</i> | The place of wet land planting |
| 15 - <i>Ke kula</i> | The plain or open country |
| 16 - <i>Ka 'ilima</i> | The place of 'ilima growth |
| 17 - <i>Ka pu'eone</i> | The dunes |
| 18 - <i>Ka po'ina nalu</i> | The place covered by waves (shoreline) |
| 19 - <i>Ke kai kohola</i> | The shallow sea (shoreline reef flats) |
| 20 - <i>Ke kai 'ele</i> | The dark sea |
| 21 - <i>Ke kai uli</i> | The deep blue-green sea |
| 22 - <i>Ke kai pualena</i> | The yellow (sun reflecting – sea on the horizon) |
| 23 - <i>Kai pōpolohua-a-Kāne-i-Tahiti</i> | The deep black sea of Kāne at Tahiti |

According to the above categories, WKOP encompasses *Ke kaolo* (the trail ways), *Ka wao* (the inland regions), *Ka wao ma'u kele* (the rain belt regions), *Ka wao kele* (the rain belt regions, e.g., rain forest), *Ka wao akua* (the distant area inhabited by gods), and *Ka wao lā'au* (the forested region).

Traditional Land Settlement

Holly McEldowney developed what is currently the most thoroughly conceived and widely used land-use/settlement model for windward Hawai'i Island (McEldowney 1979). While intended primarily to clarify settlement patterns in South Hilo District, McEldowney's observations offer insight into use of the Puna District as well (Burtchard and Moblo 1994:21). These five zone classifications (McEldowney 1979:64) are listed below and are pictured in Figure 21:

- I: Coastal Settlement
- II: Upland Agricultural
- III: Lower Forest
- IV: Rainforest
- V: Subalpine or Montane

The coastal settlement land extends from the shore to about a half-mile inland (at 20-50 feet in elevation). The upland agricultural zone was once an open grassland band extending up to three miles inland and 1,500 feet in elevation; this zone contained scattered agricultural features and some temporary residence. The lower forest, beginning at elevations of 1,500 feet to 2,500 feet in elevation, was used to gather resources such as wood, bird feathers, fiber, and some food crops. The upland rainforest, at elevations from 2,500 feet to 5,500 feet, was used mainly by bird catchers to collect feathers and to gather other resources unavailable at lower elevations. In the post-contact era, forest areas were also used to collect resources to be sold as trade items to foreigners, such as sandalwood and pulu (McEldowney 1979). Pulu is the soft substance at the base of hāpu‘u ferns, which was shipped to California to be used for furniture and mattress stuffing (Baxley 1865:596). The sub-alpine zone was located at elevations above 5,500 feet. Trails from one district to another are the major features found in this subzone.

The WKOP falls within the Upland Agricultural Zone or Zone II, and Lower Forest Zone or Zone III based on its elevation ranging from 1,000 – 2,280 feet above mean sea level (amsl) (Figure 21). McEldowney’s map and her description of Zone II are a bit contradictory, as she describes the zone as extending up to three miles inland. This anomaly may be due to the location of Puna on the windward side of the island, which receives much more rainfall than other parts of the island. Due to this heavy rainfall, the WKOP corridor reflects characteristics of both Zones II and III or the Lower Forest Zone.

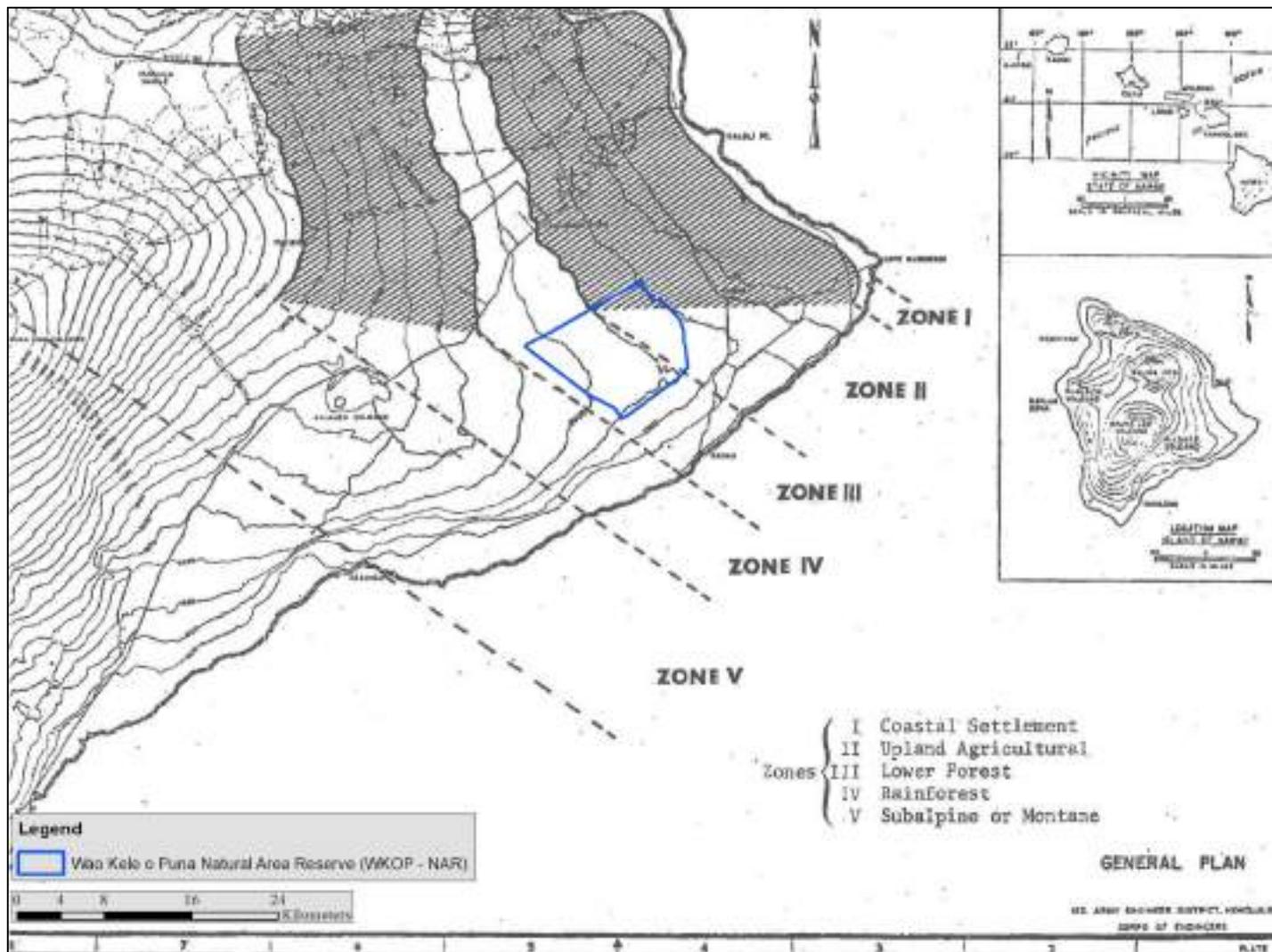


Figure 21. Land-Use Zones for the South Hilo-Puna area, showing the location of the current project area within Zone II (Upland Agricultural Zone) (adapted from McEldowney 1979)

Traditional Land Stewardship

The traditional Hawaiian *ahupua'a* system directly relates to understanding the topography and cycle of natural resources in Hawai'i to manage land. This system was based on successful food production and resource sustainability. The knowledge that resides in this type of management "reflects lifetimes of observations and experiences by many generations of Hawaiians in their quest for survival" (Edith Kanaka'ole Foundation 1995). Oneha writes (2001:300), "Hawaiians acquired knowledge of every plant, stone, wind, cloud, and wave, along with the understanding to conserve, replenish, and restore what was used. They established an intimacy with their environment as if their place was part of their extended family".

Traditionally, the Hawaiian Islands were separated into *moku* (districts) in which the *ali'i* (chief) of the island selected *ali'i 'ai moku* (chiefs who ate the districts) to oversee each *moku*. The *moku* were separated into *ahupua'a* (land divisions) that were overseen by the *ali'i 'ai ahupua'a* (the chief who eats the land division). Within the *ahupua'a* there were the *konohiki* (land agents) who resided on the land and worked together in consensus with the community to maintain a balance between land use and resource continuity (Minerbi 1999). The *ahupua'a* system was composed of land divisions that were made up of districts typically extending from the mountains to the sea.

Mueller-Dombois states, "The island areas were divided vertically, often in units of watersheds, and horizontally, in zones of ecosystem significance" (2007:24). According to Malo (1997), the ecological zones are named *kualono* (region near the mountain top), *ma'u kele* or *wao kele* (mesic rainforest) where "the huge forest trees grew", *wao akua* (the realm of the gods), which was believed to be inhabited by spirits, *wao nahele* or *wao lā'au*, where majority of timber, birds, and plants were collected (Mueller-Dombois 2007:24), *wao 'ama'u* or *wao kānaka* (the agricultural zone) where people worked and cultivated the land, *wao 'ilima, kula uka* (land vegetation), and *kula kai* (the ocean zone for fishing and collecting seafood). Each *ahupua'a* was further divided into smaller sections and designated to *'ohana*. Some of these included *'ili* or *'ili 'āina* (strips of land), *'ili pa'a* (complete), or *'ili lele* (separated, leaping) with pieces of land both near the sea and in the mountains. It is written about these land sections that, "The intent was to provide the *'ohana* with access to the resources of the *mauka* and *makai* (seawards) zones" (Minerbi 1999). A main counterpart of the *ahupua'a* system was Hawaiian spirituality. Gon (2003:7) states, "All aspects of Hawaiian life including activities in agricultural and natural settings, required ritual protocol that integrates the spiritual and physical condition of the land and its living occupants, including people". The *kapu* system was the law that guided Hawaiian spirituality and regulated the *ahupua'a* system. These regulations were pre-determined by natural processes in Hawai'i that were observed daily, monthly, and seasonally for generations (Poepoe et al. 2001:328).

There are many examples of natural processes that guided land management. One of these is the observance of the moon cycle. Each moon phase signaled weather cycles and growth patterns of native Hawaiian species. The *kapu* system insured that certain plant and animal species were collected only during specific times of the year when the

specific specie was mature and abundant. This in turn conserved these resources for annual harvest. Gon further explains, “Native species were not treated as just biological elements, but recognized as *kinolau*” (2003:9). *Kinolau* are the multiple manifestations of *akua*, Hawaiian ancestors. Protocol, conducting oneself in an appropriate manner, was a part of everyday life. Permission was asked of plants (*kinolau*) and of the associated *akua* to utilize resources. Gon recalls, “While there is no record of Hawaiians planting native trees for the purpose of forest reforestation or restoration of native vegetation, protocol has been recorded that indicates that native trees such as koa, ‘ōhi‘a, and lapa were not casually handled. Depending on the purpose of handling, protocol specific to major appropriate gods would be practiced (e.g., to Kū for ‘ōhi‘a, to Lea for canoe trees, to Laka for lapa dedicated to the *kuahu* (altar of the *hula hālau* (hula school))” (2003:13). Pukui (1972) also mentions the appropriate edict for collecting plant material by writing, “For wild-collected plants the rule was: take some, but leave some; don’t take all. For those plants that could be propagated readily, the rule was to replant when you harvest wild items.” The *ahupua‘a* system was very complex. It guided the community to *kōkua aku, kōkua mai* (help and be helped), but this community wasn’t just restricted to people, this community also incorporated the ‘āina (land), the *akua* (elements) and the reciprocity of *mana* (spiritual power).

Today, the knowledge that guided the *ahupua‘a* system to function for generations can be reapplied in contemporary Hawai‘i when managing resources. Watershed-based management is a modern term applied to the structure of the traditional *ahupua‘a* system (Berkes et al. 2000:1255). It is stated that, “Already there has been an acceptance of the *ahupua‘a* as a potential management framework by several state and federal agencies, at least on a theoretical level” (Derrickson et al. 2002:575). Many Hawaiian groups are increasingly focused on *ahupua‘a* restoration as a means to conserve and utilize land through the practice of Hawaiian culture (Eoff 1995). Minerbi (1999) states that, “More protection can be achieved with Hawaiian conservation values and planning ideas based on the integration of traditional *ahupua‘a* district planning with modern watershed and ecological planning”. It is recognized that there is a great amount of Hawaiian knowledge that still resounds throughout local Hawaiian communities and continues to be documented in literature. McGregor states, “These Hawaiian rural communities are the cultural *kīpuka* (oases) from which the Hawaiian culture regenerates, as the native trees of the *kīpuka* propagate and, in time, re-establish the forest on the lava flow” (1993:49). By seeking out these cultural *kīpuka*, agencies in Hawai‘i can benefit from local knowledge of a specific area. In addition, using traditional knowledge such as the moon calendar can improve restoration results. According to hundreds of years of test and trial, the Hawai‘i based *ahupua‘a* model is a considerable alternative to apply to land management in Hawai‘i

Traditional Land Use

Most traditional Hawaiian land use in Puna occurred along the coastal areas with only occasional activities taking place in the forested uplands. Agricultural activity extended from about one to six kilometers inland depending on water availability and soil fertility. These agricultural activities occasionally extended into the lower reaches of WKOP, however, other forest activities were more common in the deep interior of Puna (i.e. bird-

catching, wood harvesting for canoes and *ki'i*, forest product gathering, and *la'au lapa'au* among others) (Holmes 1985:6) (Figures 25 & 27). The following section describes some of the likely activities that would have occurred in the WKOP region.

Kia Manu: Bird Catching

Kia manu was one of several known traditional activities found in Wao Kele O Puna and throughout the vast upland regions of Puna. The mature 'ōhi'a and fern forest that extends across the mountainous interior of Puna provides a prime habitat for many rare forest birds such as the *mamo* (*Drepanis pacifica*) (Figure 23), 'i'iwi (*Vestiaria coccinea*), 'ō'ō (*Moho nobilis*) (Figure 22), 'apapane (*Himatione sanguinea*), 'ō'ū (*Psittirostra psittacea*) and 'amakahi (*Hemignathus virens*) and numerous other beautifully plumaged forest birds. These vibrant forest birds were sought after primarily for their striking colored feathers that ranged in colors from yellows, reds, greens and blacks (Emerson 1895:102). The feathers were used to embellish royal regalia such as the 'ahu 'ula (feathered cape), mahiole (feathered helmet), kāhili (feathered standard), kā'ei (feathered sash), feathered lei, and numerous other royal items (Bringham 1899:3).

In pre-contact Hawai'i, *kia manu*, among other occupations, was essential for upholding the status of the *ali'i*. The tens of thousands of feathers needed to construct the numerous feathered items gave rise to a highly skilled class of *kia manu*. In 1899, William T. Bringham published his book *Hawaiian Feather Work*, stating:

The birds which supplied the feathers, at least the choicer yellow, red and green were inhabitants of the mountain regions into which as the abode of evil spirits the Hawaiian did not like to go. His home was on the shore where the fish were at hand, or in the well-watered valleys where he could grow his kalo. Hence a caste arose of hardy venturesome men, the bird-hunters, --*poe hahai manu*,-- who endured cold and privations in their hunt for the precious feathers which were indeed the gold currency in which tribute might be paid or by which coveted goods might be obtained. (Bringham 1899:3)

An article published in 1895 by Nathaniel B. Emerson titled *The Bird Hunters of Ancient Hawaii* describes the esteemed class of bird catchers:

Bird-catching, while of great fascination, was a most exacting profession, demanding of the hunter a mastery of bird-craft and wood-craft attainable only by him who would retire from the habitations of men and make his home for long periods in the wooded solitudes of the interior.

The kings of Hawaii constantly had men in their service who followed the vocation of bird-catching, called the *kia-manu*. It is related of one of the ancient kings that at a critical juncture in his affair he led off his warriors into the mountains with the purpose of pretext of engaging in bird-catching for plumage. But this is not a business in which a multitude can successfully engage in close proximity to each other. The *kia-manu* needs

room; he must do his work in solitude, with the field to himself. (Emerson 1895:102)

According to Kamakau, Kamehameha I employed selected people to catch the 'ō'ō and the *mamo* birds and had experts bind the feathers for making royal regalia. Kamehameha I also allowed the people to pay their yearly taxes with tapas, skirts, *olonā* fiber, nets, fish line, 'ō'ō and *mamo* feathers as well as various other items (Kamakau 1992:177).

There were different types of bird catching techniques as the references below portray. The following article describes describes the *kahekahe* technique, which uses gum on the 'ōhi'a lehua tree. This reference comes from an article in the *Ku'okoa*, on November 12, 1920. It is titled, *Ka Mo'olelo o Hema, ke Koaie Ku Pali*:

When it was light, he was in the lehua grove bending down the branches so as to reach the flowers.” He broke off most of the lehua blossoms leaving but a few which he gummed. He did this from one tree to another. This method of bird catching was called kahekahe and the early morning was the best time to catch birds. Later in the day, there were no birds for then they had stopped coming to the lehua blossoms. When he knew that he had enough gummed flowers he went back and found a large number of birds caught on his gum. He turned to gather them up. As he went along picking up the birds, other birds were being caught in the same places. He went back three times and broke off the branches so as not to catch any more. He then turned to go the lowland with the birds.

As he walked home he tied an olona rope around his waist, broke off branches of ti leaves and tied them around him like a hula skirt. This was to be used as wrappers for the birds he was carrying home.

When he arrived at the place where birds were caught, he saw that the lehua blossoms were falling and so he plucked a cluster of hala pepe berries. This plant is also called leie. The reddish leaves near the cluster he pulled off, tore into small strips and made them into a flower resembling the lehua, broke a branch of ohia-hamau and fixed his artificial flowers on it. When the birds looked at them, they looked like the natural lehua blossoms...When his bird lure was all ready he took a cluster of kikipoo berries squeezed the juices into his artificial lehua blossoms, gummed them with lime, took a long stick, tied the lehua branch on to it and fastened it securely in place. He moved directly under a lehua tree, poked his branch up among the branches of the tree.

The birds saw the blossoms, flew from here and from there till a large number gathered. The first birds to get there were caught fast. He pulled the stick down, removed the birds and raised the stick up again. This method of bird catching is called okuu ... In a very short time his

container was filled with birds. He fastened it up in a carrying net. (HEN v.1:992–993)

In an 1895 Emerson article, he writes in great detail about methods used to gather the birds and nature of *kia manu*. In particular, he cautions against stereotyping the nature of this occupation:

The methods used by one hunter in the capture of the birds differed from those used by another. They also varied somewhat, no doubt, in different districts, on the different islands, at different seasons of the year and even in the different hours of the day.

There could be nothing stereotyped in the way the hunter of birds practiced his art. While the method might remain essentially the same, it was necessarily subject to a wide range of modification, to suit the skills and ingenuity of each hunter in his efforts to meet the habits and outwit the cunning of the birds themselves. (Emerson 1895:103)

And while the specific techniques employed by the *kia manu* of Puna are unknown and further research into the practice is needed, Emerson’s descriptions of *kia manu* in “the interior wilderness of Hawaii...amid the stretches of forest with which the climate of Hilo clothes the volcanic debris of active Kilauea and extinct Mauna Kea” (1895:104), can shed light on how this practice would have been carried out in Puna:

There are two seasons of the year favorable to the operations of the hunter; first, during the months of March and April, extending to May, and second, during August, September and October.

These two bird-seasons corresponded with the two flowering seasons on the *lehua*. The *lehua* of the lower woods flowered in the earlier season, that of March, April and May, at the same time with the *ohia-ai*, (the fruit bearing *ohia*), commonly known as the mountain-apple.

The upland *lehua*, situated in a more temperate climate, flowered during the later season, that from the beginning of August till the last of October or into the early part of November.

The birds in general moved from upland to lowland, or vice versa, to be in the flowering season, and many of the hunters moved likewise.

In the early season (*kau mua*), the birds, except the *mamo*, who was a true highlander and despised the lowlands, migrated to the lower levels, *makai*. Later in the year, during the second season, the birds were to be found in the more interior uplands.

The yellow-green *amakihi*, and the *elepaio*, famous in legend and poetry, were exceptions to this rule. These two birds were insectivorous, in addition to being honey and fruit-eaters.

The most important implements of the hunter's craft were his spears, called *kia*, or *kia-manu*, a name often used to indicate his vocation. They were long, slender, well polished poles, like fishing rods, made sometimes of dark spear wood, *kauila*, also of tough *ulei* wood from Kona. Bamboo was sometimes used, but for some reason or other it was not a favorite. The birds did not take to it. And as they were the ones whose tastes were most to be considered, that settled the question.

There were different styles of dressing the *kia*, and no one can assume to be acquainted with them all. One method is that illustrated in the cut.

The hunter himself must remain concealed beneath the shelter of the foliage, or, if that be too scanty, under a covert extemporized from material at hand, fern leaves, or *i-e-i-e* fronds. If the day is a good one and the charm of his prayers works well, the birds will presently make their appearance, singly, or by twos and threes. Anon a struggling and a fluttering of wings announces to have the watchful hunter that the little creatures have alighted on his poles and are held fast by the sticky gum.

It would seem as if the alighting of one bird on the limed fork or cross-piece of the hunter's pole did not deter others from seeking to put themselves in the same plight. At the right time the hunter cautiously withdraws one pole after another, and using care that no bird escapes, transfers the captured birds to the bag that hangs at his side, or to a cage of wicker work that is kept at hand.

It seems unaccountable, almost incredible, that any wild thing of the air should prefer alighting on the limed twig of the hunter's pole to seeking refreshment elsewhere from the scarlet honey-flowers of the *lehua* which at this season abound. The explanation given to me by the hunter was that he depended entirely upon the efficacy of his incantations to draw the birds to his *kepau* (birdlime). Sometimes instead of this formal arrangement of fork and cross-piece, a small branch with several twigs attached, the whole plentifully smeared with gum, was bound to the tip of the pole and displayed as before.

The hunter often made his pole attractive to the birds by baiting it with their favorite honey-flowers. This was done in a variety of ways, but always with an effort to imitate nature, appreciating that the highest art is to conceal art. With this intent he sometimes attached to his pole a flowering branch artfully smeared gum, or the *kepau* would be applied

directly to some part of the tree where the hunter's judgment told him the bird would alight to feed.

Another ingenious plan was the use of the decoy called *manu* (literally bait). For this purpose the gay *i-iwi*, or *akakani*, were among favorites, perhaps because they were likely to be captured earliest in the day. The decoy, still alive, was tied in an upright position to the prong at the tip of the pole, together with an arrangement of flowers. It was necessary to smear the gum at such a distance from the decoy as not to be within reach of its wings, if extended in an effort to fly. It was a common practice to preserve alive in special cages certain birds to be used as decoys, feeding them daily with their nectar-flowers. The *o-o*, *i-iwi* and *kakakani* were thus treated. In time these wild things became quite domesticated and were of great service.

The *o-o*, with his suit of jetty black touched with points of gold, was of a jealous and domineering spirit that would allow no other bird to enjoy a meal peacefully in his presence. He no sooner espied the hunter's decoy, though of his own species, in quiet possession of a flowery perch than he would alight to dispute with him its tenancy and seek to drive him away, thus himself becoming a captive. The note of the *o-o* is one that no one who has heard it can ever forget; it may be properly described as "most musical and most melancholy".

It delights to sound it forth from the topmost branch of some over-looking forest-tree, either as a call to its mate, or in pure joy of existence, as a token that its delicate tastes have been satisfied.

The *mamo*, from the richness and brilliancy of its coat, as well as from the pride and audacity of its nature, was often spoken of as the prince, or king, of Hawaiian plumage-birds. If one is not to distrust the enthusiasm of a Hawaiian writer on birds, its actions and manners entitled it to that distinction. To quote from this writer: "The *mamo-kini-oki* was the king of the small birds of the uplands. This bird was most ostentatious in its bearing, proud and lordly. Look at it perched on its tree prinking and preening and displaying itself, turning this way and that, disdainingly the *o-o*, *i-iwi* and other birds that approach, attacking and driving away any bird that comes to alight upon its tree," etc. In addition to its mixture of pride and vanity the *mamo* had a reputation for great shrewdness and for being full of alert suspicion and watchfulness. The hunter had to use all his wits to compass its capture.

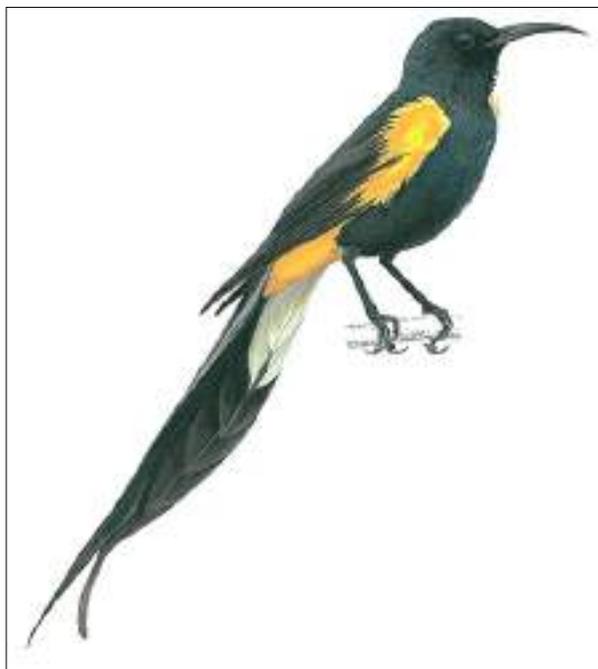


Figure 22. Hawaiian 'Ō'ō, *Moho nobilis*

While the *o-o* haunted the depths of the forest and ranged equally the lower as well as the higher forest-regions, the *mamo* made his home principally in the upper borders, where the forest-vegetation is seen to have changed from its dense massing into a more open and park-like arrangement. Here the *lehua* no longer reaches its full height as the lord of the forest, and, becoming somewhat more branching and scrubby, yields its supremacy to the still more imposing *koa*.

The means generally employed for the capture of the *mamo* was the snare, *pahele*, baited with flowers or fruit.

The flowers of the *ke'a*, *oha*, *lehua* and *mamane* were often used, also the flowers and fruit of the banana, and the fruit (*kokole*) of the parasitic *i-e-i-e*, of which the *mamo* was very fond. The *hawane*, a palm that grew in the protection of the upland forest of Hawaii, had a flower, the nectar of which the *mamo* was said to esteem as a food and the hunter sometimes succeeded in capturing this bird by means of gum applied directly to its flower-stalk.



Figure 23. Hawaiian Mamo, *Drepanis pacifica*

The greatest art was necessary in arranging the snare and bait for the *mamo*. The bird was most shrewd and observant, and if he detected any traces (*meheu*) of the hunter's work, from breakage of trampling his suspicions were aroused and he would take his leave at once. Having baited his trap and fixed in position his snare, which was a simple noose at the end of a fine line, fifteen or more yards long, the hunter placed himself in hiding, with his line in hand, and began to call the bird with an imitation of its penetrating whistle.

If the *mamo* was within hearing distance and pleased with the hunter's call, he would answer, and soon be on the wing in that direction to make acquaintance of the siren that had called him. At the bird's approach the hunter modulates his tone, only piping forth an occasional reassuring note, to lead the *mamo* still nearer, relapsing into silence and motionless quiet soon as the bird has come within sight of the baited trap. Having made his reconnaissance and satisfied himself that all is right, the bird alights and, warily cocking his head to one side and the other, to observe more closely, he moves forward to taste the hunter's bounty, in doing which he must set foot within the reach of the nicely placed snare;-on the instant the bird-catcher pulls his line and the bird is his.

One old bird-catcher aroused my incredulity by the surprising tale, which I recommended the readers of this article to take with as many grains of salt as are necessary for the attaching of a bird, that so long as the hunter remained rigidly motionless and kept his features hidden from the sight of the *mamo*, by bending his head forward upon his chest, not even venturing to open his eyes, lest their flash betray him, the little creature took no offence, and would even go so far as to perch unsuspectingly upon the hunter's head and shoulders. "*Credatiste Judaeus! Non ego.*"

The plumage-birds, like everything else in Hawaii, were the property of the *alii* of the land, and as such were protected by *tabu*; at least that was the case in the reign of Kamehameha I, and for some time before. The choicest of the feathers found their way into the possession of the kings and chiefs, being largely used in payment of the annual tribute, or land tax, that was levied on each *ahupuaa*.

As a prerequisites of royalty, they were made up into full length cloaks to be worn only by the kings and highest chiefs. Besides these were capes, *kipuka*, to adorn the shoulders of the lesser chiefs and the king's chosen warriors, called *hulumanu*, not to mention helmets, *mahiolo*, a most showy head-covering. The supply needed to meet this demand was great, without reckoning the number consumed in the fabrication of *lei* and the numerous imposing *kahili* that surrounded Hawaiian royalty on every occasion of state.

It is, therefore, no surprise when we learn that in the economic system of ancient Hawaii a higher valuation was set upon bird-feathers (those of the *mamo* and *o-o*) than upon any other species of property, the next rank being occupied by whale-tooth, a jetsam-ivory called *palaoa pae*, monopolized as a perquisite of the king.

While the plumage-birds were of such diminutive size and so difficult of capture that it would not have been profitable to hunt them for food, they were in reality such delicacies for the table, that the hunters were quite willing to use them in that way.

And, in truth, it is difficult to see what better disposition could have been made of them in many cases. In the case of the *mamo*, *i-iwi*, *akakani*, *o-u* and *amakihi* the extent of skin-surface left bare after stripping the plumage from the bird was so considerable that it would have been an act of cruelty, if not of destruction, to have set it loose in such a condition. It was entirely different with the *o-o*. In its case the injury done was trifling and constituted no bar to its being immediately released.

Kamehameha I is said to have reproved his bird-catchers for taking the life of the birds. "The feathers belong to me, but the birds themselves belong to my heirs," said the considerate monarch.

It was the practice of some hunters to release the first bird caught, unplucked, as an offering to the gods.

The greatest care was always used to keep the feathers from becoming ruffled or wet in rainy weather.

The *mamo*, *i-iwi* and such birds as were destined to be eaten after being plucked, were, as soon as caught, killed by pressure over the thorax and then wrapped in the other dried parchment of the banana-stalk, and packed in the hunting bag. The *o-o* and birds destined to be released were secured in cages. (Emerson 1885:102-108)

The practice of collecting rare feathers in the uplands of Puna is noted in ‘*Ōlelo No‘eau* (Hawaiian proverbs and poetical saying) written by Mary Kawena Pukui. ‘*Ōlelo no‘eau* are often metaphoric references, however the basis for many of these poetical sayings derives from actual events. The *ahupua‘a* of ‘Ōla‘a (formerly called La‘a) is located to the northwest of Wao Kele O Puna and lies on the boundary between Hilo and Puna. This *ahupua‘a* is one of the most renowned places for bird catching. During the mid to late 1800’s, Scott B. Wilson, an ornithologist, traveled throughout the Hawaiian Islands to gather information for his book *Ave Hawaiienses*. While searching for bird specimens, Wilson also references ‘Ōla‘a as a place famed for bird catching. “...and whilst I was at Olaa in the district of Puna-- a place renowned in ancient times for its bird-catchers...” (Wilson 1890:166). Although Wao Kele O Puna is not situated within the *ahupua‘a* of ‘Ōla‘a, it can be inferred that the practice of *kia manu* was not solely isolated to ‘Ōla‘a but would have extended throughout the interior uplands of Puna and more specifically to Wao Kele O Puna. The following are two selected ‘*ōlelo no‘eau* that make particular reference to ‘Ōla‘a as a place noted for *kia manu*.

Keiki kiamanu o La‘a.

Bird-catching lad of La‘a.

A person whose charm attracts the opposite sex. ‘Ōla‘a, Hawai‘i, was once known as La‘a. Bird catchers often went into the forest there for feathers. This expression is also used in a chant composed for Kalākaua.

He kāpili manu no ka uka o ‘Ōla‘a he pipili mamau i ka ua nui.

A bird catching gum of the uplands of ‘Ōla‘a that sticks and holds fast in the pouring rain.

Said of one who holds the interest and love of a sweetheart at all times.

Of all the forest birds inhabiting the upland forests of Puna, the *mamo* (*Drepanis pacifica*) and the ‘*ō‘ō* (*Moho nobilis*) were the most coveted by the *ali‘i* for their yellow feathers. The *mamo* is a medium-sized black and yellow bird with a long curved bill (Banko11b 1981:vi). The ‘*ō‘ō* is a large black plume-tailed bird with large yellow axillary tufts and yellow undertail-coverts (Banko7ab 1981:231). Both species are endemic to Hawai‘i Island. The ‘*ō‘ō* and the *mamo* were eaten and hunted primarily for their feathers which were used to make large royal *kāhili*. The golden feathers found under their tails were used to make feather capes and lei worn by the *ali‘i* (Handy and Handy 1991:258). By the mid to late 1800s, the *mamo* birds of Puna were difficult to locate and were reported to be scarce, and today, the *mamo* is presumed to be extinct (Banko 1981:vi). Henry W. Henshaw, an Hawaiian birds expert, noted in his book *Birds of the Hawaiian Islands*, “The districts of Olaa and Puna are today almost absolutely tenantless of this beautiful bird [the ‘*ō‘ō*], where formerly there were multitudes”

(Henshaw 1902:70). Extensive surveys conducted by the U.S Fish and Wildlife beginning in 1966 failed to turn up sightings of the 'ō'ō. However, it is believed that a few of these extremely rare birds may persist in isolated habitats (Banko7ab 1981:233).

As Bringham and Emerson both noted, *kia manu* could spend long periods of time enduring the harsh conditions of the forest, thus requiring them to make their domicile amongst the forest inhabitants. Emerson writes:

A bird-hunting campaign was not an affair to be lightly entered upon. Like every other serious enterprise of ancient Hawaii, a service of prayer and an offering to the gods and aumakua, must first be performed... ..Having selected a camp, he erects the necessary huts for himself and his family. His wife, who will keep him company in the wilderness, will not lack for occupation. It will be hers to engage in the manufacture of *kapa* from the delicate fibers of the *mamake* bark, perhaps to aid in plucking and sorting the feathers.

The early morning, when the vapors are beginning to lift, is the favorite time for most of the birds to visit their aerial pasturage. A few hours later, when the sun has had time to dull the edge of the sharp morning air, and to clear away the fogs, the aristocratic *o-o* will come to his more fashionable breakfast. Necessity makes the hunter an early riser, that he may repair to his chosen ground before the morning sun has begun to illuminate the summits of Maunakea and Maunaloa.

As a means of accomplishing the double purpose of protecting himself and of preserving plumage of his birds from injury by the wet, the hunter was provided with a long, hooded cloak that encased him from his head to his knees. The basis of this garment was a net-work, into the meshes of which were looped strips of dried ti-leaf that hung point down on the outside. The method was almost identical with that used in roofing a grass hut. The garment might with propriety be termed a thatched cloak. Its water-shedding power is said to have been most excellent, of which it had opportunity to give ample proof in the fierce, tropical, down-pours of the region. (Emerson 1895:105-107)

The practice of *kia manu* in Puna may have its beginnings during the pre-contact era. However, the desire for feathered items and therefore the practice of *kia manu* continued well into Puna's post-contact era. Although western clothing and other material goods were already being introduced to the islands after western contact in 1778, the practice of *kia manu* and the manufacturing of feathered items for royalty persisted well into nineteenth century Puna and other places across the archipelago.

Gathering of Natural Resources

Mats and Kapa Mamaki

The people of ‘Ōla‘a and other interior parts of Puna were known to produce very fine mats and *kapa* made from the bark of the *mamaki*, sometimes spelled *mamake* (*pipturus* sp.) plant (Burtchard et al. 1994:48). *Mamaki* grew readily in the region and sparked another economic venture for those skilled in preparing *kapa* from the *mamaki* plant. Around the late nineteenth century, as the Hilo-Kīlauea trail became more popular with visiting tourists, several Native Hawaiians and other foreigners established halfway houses along the trail. In particular, one man by the name of Kanekoa was known to sell *kapa mamaki* as souvenirs to travelers (Manning 1981:63). Other accounts tell of *kapa mamaki* from Puna that were sold at markets in Hilo (Burtchard et al 1994:48). Because *mamaki* can still be found growing vigorously in Wao Kele O Puna, it is likely that people accessed patches within the Wao Kele O Puna area to produce *kapa* and other items made of *mamaki* (Figure 24).



Figure 24. Young *mamaki* plant found growing in a lava pit in Wao Kele O Puna



Figure 25. Old Kīlauea Trail in the ‘ōhi‘a forest (Bringham ca. 1909).

Olonā Fiber

Cultivating and manufacturing *olonā* fiber was another well-documented Puna industry. Many accounts about *olonā* reference the interior parts of Puna as a place renowned for producing this highly valued fiber. In 2011, isolated patches of *olonā* were located within Wao Kele O Puna by Cheyenne Perry and colleagues (personal communication Cheyenne Perry, February 6, 2013) (Figure 26). It is highly probable that these *olonā* patches played a role in Puna’s historical industries as well as the various occupations that utilized this prized resource such as the *kia manu* and *lawai‘a* (fishermen) from Puna.

A description of the ‘Ōla‘a area provided by Dr. N. Russel at the end of the nineteenth century gives insight into the various industries of the Puna area:

Some fifty years ago about 1,000 natives were living on the margin of the virgin forest and pahoe-hoe rock along the trail connecting Hilo town with the crater of Kilauea, island of Hawaii, in a spot corresponding to the

present 22-mile point of the Volcano road. Making of "kapa" (native-cloth) out of "mamake" bark (*Pipturus albidus*), of olona fiber for fishing nets out of (*Touchardia latifolia*), and capturing "O-U" birds for the sake of the few precious yellow feathers under the wings, of which luxurious royal garments were manufactured-- those were the industries on which they lived. For the reasons common to all the native population of the islands, viz, the introduction of new germs of disease--syphilis, leprosy, tuberculosis, smallpox, etc.-- this settlement gradually dwindled away, and in 1862 the few surviving members migrated to other localities. At present only patches of wild bananas, taro, and heaps of stones scattered in the forest indicate the places of former habitation and industry. (MacCaughy 1920:240)

Olonā (*Touchardia latifolia*), a semi-cultivated plant that produces excellent natural fibers, is an endemic sprawling shrub or small tree belonging to the nettle family and ranges in height from 3-10 feet tall (Lilleeng-Rosenberger 2005:386). *Olonā* grows best on the windward slopes, above the 2,000 feet elevation, in regions with great rainfall (Kamakau 1976:52). Kamakau provides a detailed description of a technique used to cultivate *olonā* in the forest:

In the old days every chief had an olona plantation somewhere in the mountains above the lower edge of the forest. The fiber was not derived from wild plants, but from semicultivated areas where the fern and underscrub has been cleared away to permit the better development of this shrub. The stems of the plant were cut partially through just at the surface of the ground and were bent over or broken down so that a multitude of slender shoots or suckers should be thrown up. (Kamakau 1976:52)

When the *olonā* reached about ten feet tall and about one to two inches thick, it was ready for harvest. A plant that was too old or too young was not preferred. The *olonā* was cut above the roots to encourage the growth of new shoots, and the bark that contained the prized fibers was stripped and made ready for processing. After the bark was rolled and soaked for several days, the outer bark was removed leaving only the fibrous tissues used for cordage. The fibrous tissue was then scraped with a shell scraper on a moistened board to remove the slimy substance covering the inner surface. Once scraped and free of slime, the fibers were hung in the sun to dry (Kamakau 1976: 53-54; Abbott 1992:60). Prior to the 1920's, Vaughan MacCaughy from the College of Hawai'i sought the skill and expertise of a *kama'āina* of 'Ōla'a on the harvest and preparation of the *olonā* fiber. MacCaughy was interested in learning the traditional methods used to prepare the fiber in hopes to furnish some suggestions for the construction of machine to process *olonā*. MacCaughy provides a more detailed description of the cultivation and processing of *olonā* using traditional methods by *kama'āina* of 'Ōla'a:

We had hardly made a dozen steps in the woods along the twenty-two-mile trail when a rich harvest of *Touchardia* was found. We found both male and female plants that could be distinguished only by inflorescence.

Careful discrimination is made, however, in regard to the age of the plant; neither too young nor too old ones are taken. The bark of the old ones is somewhat knotty, woody, and short jointed, and, as I have mentioned, such plant is turned down to the ground to force it to give new shoots. The best stems are not thicker than the finer, about one year and a half old, with the bark of a chocolate-brown color, with distanced scars of former leaves, straight and high (8 to 10 feet), devoid of leaves except on the top. Such stems are cut with the knife near the root and below the crown. Their bark strips easily as a whole from bottom to the top. The ribbon obtained is hung over the neck of the gatherers.

The implements used are: (1) A wood board made of “naou” [possibly *nā’ū*, *gardenia brighamii*] tree, characterized by its dark color, hardness, compactness, evenness, and absence of knots. This board is about 6 feet long by 2 to 3 inches wide. It has a very light curve in both directions- in width and length; is wider at one end and obtusely pointed at the other. (2) A plate of fish bone of “honu” [turtle] fish about 8 inches long by 2 1/2 wide, and is also slightly curved in both directions. Its lower margin is sharpened under 45° like the edge of a chisel.

The process of manufacturing is as follows: The “naou” board is fastened on the ground with rocks at the narrow and to prevent any forward sliding, the curved surface uppermost. The broader end is a little elevated by another piece of rock. The board is moistened with water. A ribbon of bark from one plant is taken. Its bottom end is first fastened by treading on it with the toe of the right foot, the top end raised vertically by the left hand, so as to tightly stretch the band. Holding the fish plate by the right hand in its middle, the sharp end of the bone is passed upward along the inner surface of the ribbon, which operation is intended for flattening the curled ribbon and taking off the slimy substance covering the inner surface. Then the ribbon is stretched horizontally upon the naou board, the bottom end toward the wider end of the board, and the operator, and held tightly to it by the two fingers of the left hand, the outer surface of the bark upward, the inner sticking to the board. Then the fish plate, held in the right hand by the middle at 45°, with its sharp end downward and forward, squeezing the ribbon between the tool and the board, is repeatedly passed toward the pointed end of the board, by which motion the flesh is scrapped off, leaving a ribbon of fiber. From one to two minutes are required to free the bark of one plant. The operation of scraping is easy, the fiber evidently being located on the inner surface. The fiber thus obtained is dried in the sun. (MacCaughey 1920:241)

After processing the bark, a fine, very durable and sea water resistant fiber is produced (Abbott 1992:59). Some of the handcrafts that were manufactured with *olonā* include items such as nets, ropes, twine, and served as the foundation for the biding of delicate

feathers and the overall assembling of feathered regalia (Kamakau 1976:52). Because of its durability and resistance to seawater, *olonā* fiber is important in the manufacturing of fishing line, and nets. Its excellence made it a highly valued item, not only among Hawaiians but also, among Western sailors (Abbott 1992:59). Whalers would pay high prices for olona for making lines for whales (MacCaughey 1920:241). The *olonā* trade was a source of considerable profit to the king and his chiefs (Kamakau 1976:53). An account written by Kamakau indicates that as late as the 1870's, Kalākaua levied a tax on *olonā* fiber from the natives of Puna and 'Ōla'a, which he sold at high prices to Swiss Alpine clubs, who valued it for its light weight and great strength (1976:53). Holmes suggest that the *olonā* business in Puna was probably greater during post-contact times than pre-contact times due to the increase in foreign demand for this sturdy and lightweight fiber (Holmes 1985:14).



Figure 26. *Olonā* growing amid bananas located at a *kipuka* in WKOP (C. Perry and L. Mahi 2011).



Figure 27. Carving a canoe in the forest (from Lyman Museum)

WKOP Ahupua‘a and Place Names

A review was conducted on place names within the two primary *ahupua‘a* that make up WKOP (Figures 28 & 29). Place name information was collected from the Boundary Commission testimony, historic maps of Puna, Pukui and Elbert’s *Place Names of Hawai‘i* (1974) and Soehren’s *Catalogue of Hawaiian Place Names* (2002).

Nā Inoa ‘Āina o Ka‘ohe a me Waiakahiula Ahupua‘a

The mindset of *kānaka* evolved and developed over centuries of being intimately in tuned with the natural environment from the heavens above to the depths below. As Native Hawaiians living in contemporary times, we must now try to decode and decipher the environment around us to get a glimpse of how our ancestors understood their universe. One piece of evidence that provides a hint of how *nā kūpuna* (the ancestors) saw the landscape of Hawai‘i is through the thousands of place names still recorded today. According to cultural expert, Mary Kawena Pukui, place names provide a living and largely intelligible history that provides much information for us today (1976). Furthermore, a place name connects us to the *mo‘olelo* or story of the land; by using traditional names of places we reconnect to these places by keeping the stories of the landscape alive.

Each place has a story that is often times communicated through the meaning of its name. A place name may tell of a commemorative event, an important person, may describe the physical environment of a place, or reveal the function of the land. Traditional place

names that have persisted through time provide an avenue to understand a landscape and tap into the *mana* that is a part of each area. When explaining the concept of *mana* that is instilled in a name, Pūku‘i writes, “Once spoken, an *inoa* took on an existence, invisible, intangible, but real. An *inoa* could be a causative agent, capable of marshaling mystic elements to help or hurt the bearer of the name. And, so went the belief, the more an *inoa* was spoken, the stronger became this name-force and its potential to benefit or harm” (Pukui, Haertig, & Lee 1972: 94).

Traditional Hawaiian place names often reoccur in *mele*, *mo‘olelo*, and *‘ōlelo no‘eau*. Other sources documenting traditional place names include ethnographic surveys, historic maps, and early historical documents such as Land Commission Award (LCA) claims, Grant claims, and Boundary Commission testimonies (BCT). The place names presented in the following tables were gathered from research done by Lorrin Andrew (1865), Pukui and Elbert (1986), Pukui, Elbert, and Mo‘okini (1974), Lloyd Soehren (2010), and a Cultural Surveys Hawai‘i Report of the Pāhoa-Kea‘au Road Widening Project (Farias; Hallet; Mitchell 2011). There are no *‘okina* (glottal stops) or *kahakō* (macrons) used in the list of place names because they rarely appear in the original sources. As an alternative, a lexicology section is included to offer a diacritical spelling and English translation of these names. Presented below are the place names of Ka‘ohe, Waiakahiula Nui (1), and Waiakahiula Iki (2) *ahupua‘a* located within the area known today as Wao Kele O Puna.

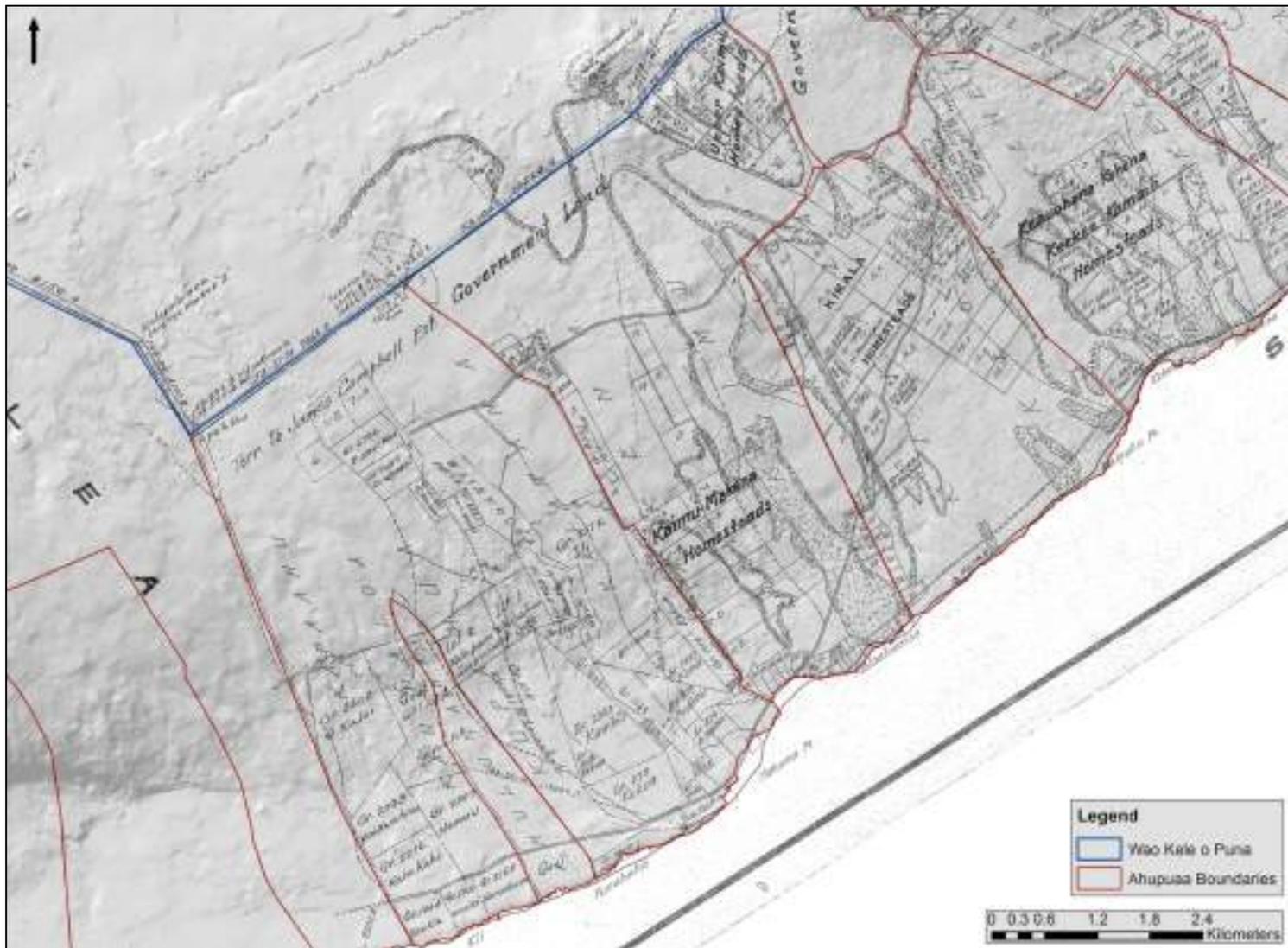


Figure 29. Adapted Register Map 2753 showing the coastal lands and *ahupua'a* boundaries in red

Abbreviations in Place Name Tables

BC	Boundary Certificate No. (volume: page)
BCT	Boundary Commission Testimony
IN	Indices of Awards
LA	Lorrin Andrew, <i>Dictionary of Hawaiian Language</i>
LCAw	Land Commission Award
MB	Māhele Book
PE	Pukui & Elbert, <i>Hawaiian Dictionary</i>
PEM	Pukui, Elbert & Mo‘okini, <i>Place Names of Hawai‘i</i>
RM	Registered Map No. _____
RPG	Royal Patent Grant No. _____
TM	Tax Map (zone, section, plat)
USGS	United States Geological Survey

See References for complete citations

Hawaiian Words in Place Name Tables

Ahupua‘a	A land division usually extending from the uplands to the sea, so called because the boundary was marked by an <i>ahu</i> (heap) of stones
Aupuni	Government
Awāwa	A valley, gulch, or ravine
Kō‘ele	A small land unit, farmed by a tenant for the chief
Māhele	The division of land that took place in 1848
Makai	Toward the sea or in direction of the sea
Mauka	Toward the mountains, or uplands
‘Ōhi‘a	A native tree (<i>Metrosideros</i> spp.)
O‘io‘ina	A resting place for travelers, such as a shady tree or rock
Pāhoehoe	A type of lava
Pulu	A soft yellow wool on the base of the tree-fern leaf stalks (<i>Cibotium</i> spp.)
Pu‘u	A hill, peak, cone, or mound
‘Uki	A native sedge (<i>Machaerina</i> spp.)

Table 4. Ka‘ohe Ahupua‘a Place Names

Name	Feature	Comments	Lexicology	Source
Kaohe	<i>Ahupua‘a</i>	Returned by Ulumaheihēi, retained by <i>aupuni</i> at the Māhele. A detached section of Kaohe, which lies at the southwest end of Waiakahiula 2, has been designated Kaohe Homesteads.	<i>Ka-‘ohe</i> . PEM: the bamboo.	MB 44,193; IN 31; RM 2191; RPG 1533.
Kaohe Homestead	Homestead	This detached section of Kaohe, which lies at the southwest end of Waiakahiula Iki, has been designated Kaohe Homesteads.	<i>Ka-‘ohe</i> . PEM: the bamboo.	USGS 1966; TM 1501.
Kauhaikuapuu	Boundary point, Place	“Commence at a <i>pahoehoe</i> rock at the sea shore, in a place called Kauhaikuapuu, the boundary of this land and the Government land Kaohe.” Cf. Olea.	<i>Ka-uhai-kuapu‘u</i> . PE: the hunchbacked hunter.	BC 158 (4:47).

Name	Feature	Comments	Lexicology	Source
Keahuokamalii	Boundary point, Place	The Waiakahiula/Kaohe boundary “runs <i>mauka</i> along old trail crossing Government road to the place where land of Keonepokoiki cuts off Kaohe...at Keahuokamalii.” Elev. 220 ft.	<i>Ke-ahu-o-kamali ‘i.</i> PE: the altar of Kamali ‘i.	BCT 2:396.
Olea	Boundary point, Place	“The land of Kaohe bounds [Waiakahiula Nui] on the Hilo side at the shore...at an <i>awawa</i> called Olea.”	<i>Olea.</i> LA: shining; hot.	AD 99; BCT 2:396.

Table 5. Waiakahiula Nui (1) and Waiakahiula Iki (2) Ahupua‘a Place Names

Name	Feature	Comments	Lexicology	Source
Waiakahiula (Waiakeahiula)	<i>Ahupua ‘a</i>	Retained by Kekauonohi (LCAw 11216:40) at the Māhele.	~ <i>Wai- ‘akahi- ‘ula.</i> The first red water.	MB 33; IN 69; USGS 1965.
Auwai	Boundary point, Place	Course 25 of the Waiakahiula Iki boundary runs “along Kauaea to Auwai.” Elev. 980 ft.	<i>‘Auwai.</i> PE: ditch.	BC 158 (4:49).
Hooaho Mawae	Boundary point, Place	Course 23 of the Waiakahiula Iki boundary runs “along Kaniahiku to Hooahomawae.” Elev. 905 ft.	~ <i>Ho ‘o- ‘aho, Hō ‘aho.</i> PE: To thatch, to breath. ~ <i>Māwae.</i> PE: cleft, fissure, crevice, crack.	BC 158 (4:49).
Hookakee	Boundary point, Place	Course 30 of the Waiakahiula Iki boundary runs “along Kaohe to Hookakee.” Elev. 970 ft.	~ <i>Ho ‘o- kakee.</i> Possibly <i>Ho ‘o- keke ‘e.</i> PE: To make crooked, to bend.	BC 158 (4:50).
Kahuaopiki	Boundary point, Place	Course 10 of the Waiakahiula Iki boundary runs “along Nanawale to <i>ohia</i> tree marked X at place called Kahuaopiki, in woods.” Elev. 650 ft.	~ <i>Kahua- o- ‘āpiki.</i> PE: the house platform of ‘Āpiki. ~ <i>‘Āpiki.</i> PE: crafty, cunning.	BC 158 (4:49).
Kaloi	Boundary point, Ridge	Course 8 of the boundary of Waiakahiula Iki begins at a “pile of stones on the ridge called Kaloi.” Elev. about 685 ft.	~ <i>Ka- lo ‘i.</i> PEM: the taro patch. ~ <i>Ka- loi.</i> PE: to look over critically, scrutinize.	BC 158 (4:50).
Kaukapehu	Boundary point, <i>O ‘io ‘ina</i>	Located in Waiakahiula Nui. The Waiakahiula/Nanawale boundary runs “ <i>mauka</i> along old trail to <i>oioina</i> Kaukapehu” between Kawahinemaikai and Kawi.	~ <i>Ka- ‘uka- pehu.</i> ~ <i>Ka- ‘uka.</i> PE: Wrinkles. ~ <i>Pehu.</i> PE: A variety of sweet potato.	BCT 2:397.
Kaupewai Mawae	Boundary point, Place	The Waiakahiula Iki boundary runs “along [Kaohe] to <i>ohia</i> tree marked V at Kaupewai Mawae, a volcanic	~ <i>Kaupē- wai māwae.</i> <i>Kaupē.</i> PE: Humble, crushed. ~ <i>Wai.</i>	BC 158 (4:49).

Name	Feature	Comments	Lexicology	Source
		crack.” Elev. 1015 ft.	PE: Water. ~ <i>Māwae</i> . PE: cleft, fissure, crevice, crack.	
Kawahine-maikai	Boundary point, <i>O’io’ina</i>	The Waiakahiula Nui/Nanawale boundary runs “ <i>mauka</i> along old trail to place called Kawahinemaikai an <i>oioina</i> ” between Punalaupakukui and Kaukapehu.	~ <i>Ka-wahine-maika’i</i> . PE: the good woman.	BCT 2:397.
Kawi	Boundary point	Located in Waiakahiula Nui. The Waiakahiula/Nanawale boundary runs <i>mauka</i> “to <i>makai</i> of where Kaina used to get <i>pulu</i> at place called Kawi, where this land turns toward Puna and cuts land of Nanawale off.” Coordinates are for the corner of Nanawale, at about 358 ft. elevation; the angle in the boundary is 2500 feet <i>makai</i> .	<i>kāwī</i> . PE: To press, wring out, squeeze out (as fruit juice).	BCT 2:397.
Keukihale	Boundary point, Place	Course 21 of the Waiakahiula Iki boundary runs “along Kaniahiku to <i>ohia X</i> at Keukihale.” Elev. 845 ft.	~ <i>Ke-’uki-hale</i> . The house made out of <i>’uki</i> grass.	BC 158 (4:49).
Malamakuhoa	Boundary point, Place	The Waiakahiula/Keonepokoiki “boundary runs along old road...to place called Malamakuhoa. At this point the land bends toward Puna and goes into woods.” Elev. about 250 ft.	~ <i>Mālama-kū-hoa</i> . To take care of a friend.	BCT 2:396.
Pahoa	<i>O’io’ina</i> , Town	The principal town of lower Puna straddles the boundary between Waiakahiula and Nanawale. “The [Waiakahiula] boundary runs up old road to <i>oioina</i> called Pahoa.” Elev. about 650 ft.	<i>Pāhoa</i> . PEM: dagger.	BCT 2:396; USGS 1966.
Papala	Boundary point, Rock	Located in Waiakahiula Nui. “There is a rock in the sea called Papala on the boundary” between Waiakahiula and Honolulu.	<i>Pāpala</i> . PEM: named for a tree belonging to the amaranth family.	BCT 2:396.
Piliaiku	Boundary point, <i>Kō’ele</i>	Located in Waiakahiula Nui. The Honolulu/Waiakahiula Nui boundary runs “up <i>kualapa</i> to place called Piliaiku, an old <i>koele</i> belonging to Waiakahiula,” between Govt. road and Puu Holoaa.	<i>Pili’aikū</i> . PE: cramped, stiff, numb.	BCT 2:397.
Punalaupakukui	Boundary point, Grove	Located in Waiakahiula Nui. The Waiakahiula/Nanawale boundary runs <i>mauka</i> “to some groves of woods called Punalaupakukui where the boundary turns toward Hilo,” between	~ <i>Puna-lau-pā-Kukui</i> . Puna’s multitude of candlenut groves.	BCT 2:397.

Name	Feature	Comments	Lexicology	Source
		Puu Holoaa and Kawahinemaikai. Elev. 280 ft.		
Puu Olelo	Boundary point, Place	Course 15 of the Waiakahiula Iki boundary runs "along Nanawale to ohia X at Puuolelo." Elev. 665 ft.	<i>Pu'u 'ōlelo.</i> PEM: speaking hill.	BC 158 (4:49).
Puu Pahoehoe	Boundary point, <i>Pu'u</i>	Course 32 of the Waiakahiula Iki boundary runs "along Keonepoko to Puupahoehoe." Elev. 855 ft.	<i>Pu'u pāhoehoe.</i> PE: hill [of] smooth lava.	BC 158 (4:50).
Waaomaui	Boundary point, Place	Course 31 of the Waiakahiula Iki boundary runs "along Kaohe to Waaomaui, a canoe shaped crack in the <i>pahoehoe</i> , about 2 chains outside of the <i>ohia</i> woods." Elev. 880 ft.	<i>Wa'a-o-māui.</i> PE: canoe of Māui.	BC 158 (4:50).
Waihonapu	Boundary point, Place	Course 11 of the Waiakahiula boundary runs along Keonepokoiki "along road to Waihonapu." Elev. about 315 ft.	~Interpretation unknown.	BC 158 (4:48).

Table 6. Place Names of Adjacent Lands in *mauka* Puna

Name	Feature	Ahupua'a	Comments	Lexicology	Source	Description/ Map I.D.
Heiheiahulu	Cone, ts	Kapaahu	Cinder cone in the Kilauea Prehistoric Volcanic Series. Elev. 1711 ft.	heiheiahulu. PEM: not translated	USGS 1966; Stearns and Macdonald 1946.	Geologic feature located within the PFR, N of the SE corner boundary/ RM 2753
Kalaeolomea	Kauhale, boundary point	Kahaualea	"old kauhale and hill of the same name". (BTC) Course 20 of the Kahaualea boundary runs southeast "along Govt land to place called Kalaeolomea". Elev. about 1610 ft.	ka-lae-olomea. PE: the olomea point	BC 171 (4:91); BCT 1:210.	SW boundary point between the PFR and Kahaualea/ RM 2753
Kalaeolomea	Kauhale, mahina'ai	Waikaheka heiki	Course 4 of the Waikahekaheiki boundary runs along the Puna Forest Reserve "to Kalaeolomea, the mauka corner of this land." Cf. Keekee. Elev. 2280 ft.	ka-lae-olomea. PE: the point of olomea [forest].	BC 192 (4:169).	SW boundary point between the PFR and Kahaualea/ RM 2753
Kaumuki	Cone	Kapaahu	Cinder cone in the Kilauea Prehistoric Volcanic Series. Elev. 1460+ ft.	ka-umu-kī. PE: the ti oven.	USGS 1966; Stearns & Macdonald 1946	Geologic feature located within the PFR- SW of Kaohe Homestead/ RM 2191

Name	Feature	Ahupua'a	Comments	Lexicology	Source	Description/ Map I.D.
Puuaakoko						Boundary point between Kaohe Homestead and the PFR /RM 2753
Kaaha						Place name adjacent to Kaohe Homestead and Gov't Lands-boundaries for the PFR not yet established/ Terri. of HI Map by Alexander & Wall 1901.

Origin of the Name Wao Kele O Puna

George S.H. Kanahale wrote: “The Hawaiians were great ones for delimiting space, drawing imaginary lines on land, across the ocean, and upward through the atmosphere.” Each named place was marked by boundaries and separated one space from another. In many instances, each named space reflected the way Hawaiians and others related to or commemorated that particular space. It was not uncommon for place names to change over time as certain historical events proved significant enough that renaming a space was one way to give recognition to its importance.

Wao Kele O Puna is one such place that has taken on several names since *kanaka* began interacting with this area. The origin of the name Wao Kele O Puna is rooted in both traditional Hawaiian environmental land divisions as well as a modern parcel designation. The following section will explore the various names used over time to delimit this space.

Hawaiians developed terms to describe the various land divisions and environmental zones found in Hawai‘i. The story of *Kāmiki*, published in the Hawaiian language newspaper *Ka Hoku o Hawai‘i* between 1914-1917, recounts the Hawaiian terms used to describe these traditional land division and environmental zones. The excerpt of the story which details this information was republished and translated by Kepā Maly in *Mālama Pono I Ka ‘Āina: An Overview of the Hawaiian Cultural Landscape*. The information below is an excerpt from this article:

1-Ke kuahiwi; 2-Ke kualono; 3-Ke kuamauna; 4-Ke ku(a)hea; 5-Ke kaolo; 6-Ka wao; 7-Ka wao ma‘u kele; 8-Ka wao kele; 9-Ka wao akua; 10-Ka wao lā‘au; 11-Ka wao kanaka; 12-Ka ‘ama‘u; 13-Ka ‘āpa‘a; 14-Ka pahe‘e; 15-Ke kula; 16-Ka ‘ilima; 17-Ka pu‘eone; 18-Ka po‘ina; 19-Ke

kai kohola; 20-Ke kai 'ele; 21-Ke kai uli; 22-Ka kai pualena; 23-Kaipōpolohua-a-Kāne-i-Tahiti.

1-The mountain; 2-The regions near the mountain top; 3-The mountain top; 4-The misty ridge; 5-The trail ways; 6-The inland regions; 7 and 8-The rain belt regions; 9- The distant area inhabited by gods; 10-The forested region; 11-The region of people below; 12-The place of 'ama'u [fern upland agricultural zone]; 13-The arid plains; 14- The place of wet land planting; 15-The plain or open country; 16-The place of 'ilima growth [a seaward, and generally arid section of the *kula*]; 17-The dunes; 18-The place covered by waves [shoreline]; 19-The shallow sea [shoreline reef flats]; 20-The dark sea; 21-The deep blue-green sea; 22-The yellow [sun-reflecting- sea on the horizon]; and 23-The deep purplish black sea of Kāne at Tahiti. (Maly 2001:3)

The term *wao kele* is described above as the rain belt region; an indication of the function of this region. The Wao Kele O Puna Natural Area Reserve has been documented as the largest remaining expanse of lowland tropical rainforest in Hawai'i (Matsuoka *et al* 1996:100). The term *kele* is also defined by Elbert and Pukui as:

kele- nvs. watery, muddy, wet, swampy, greasy, fat, lush.
wao kele- forested uplands (Elbert and Pukui 1986:143).

In 1996, Matsuoka et al. conducted an ethnohistory of both Puna and Southeast Maui for the proposed geothermal development in those areas. Pualani Kanahale was consulted to provide insight into the name of Wao Kele O Puna.

Mrs. Kanahale also explained how many of the chants that she is familiar with mention Keahialaka and the Wao Mau Kele O Puna. These are other manifestations of the Pele family. An aunt of Pele and Hi'iaka is Ma'u. She [Ma'u] has to do with the deep, wet forest. Hi'iaka has to do with the greenery that grows in the forest. (Matsuoka 1996:209)

Although *wao kele* and *wao ma'u kele* are traditional Hawaiian terms, a search of early land records and Hawaiian language newspapers of Puna indicates that such terms were not used to demarcate this particular area. However, because *wao kele* is a traditional term to describe the rain belt region, people may have colloquially used the term *wao kele* to describe the general region.

During the Māhele, portions of land from the *ahupua'a* of Maku'u, Ka'ohē, Kaimū, Kehena, Kapa'ahu and Kama'ili were combined to form a large tract of Government Land. In 1911, the Superintendent of Forestry, Ralph Hosmer, designated approximately 19,850 acres of the Government Land as the Puna Forest Reserve. In 1928, the Puna Forest Reserve was expanded to 25,738 acres. On October 21, 1976, the Natural Area Reserves System Commission recommended that a 6,500 acre portion of the Puna Forest Reserve be established as the Wao Kele O Puna Natural Area Reserve. From 1978-1987,

the State of Hawai‘i, Board of Land and Natural Resources, approved the designation of 16,847 acres of the Puna Forest Reserve as part of the State’s Natural Area Reserve (Holmes 1985:4; Matsuoka 1996:100). State records indicate that during this designation as a Natural Area Reserve, the name Wao Kele O Puna became legally attached to the Natural Area Reserve.

Although the name Wao Kele O Puna was legally used to demarcate this parcel of land in the 1970’s, it is clear that the name originated from a more ancient Hawaiian understanding of environmental zones. Based on the nature of this area, the name Wao Kele O Puna appropriately describes this land as the area is heavily forested and lush. The forest density attracts rain that in turn provides Puna with an abundance of fresh water.

MĀHELE ‘ĀINA

In 1845, significant changes in Hawai‘i’s traditional land tenure system occurred when the Board of Commissioners to Quiet Land Titles was established. The Board, known informally as the Land Commission, was created “for the investigation and final ascertainment or rejection of all claims of private individuals, whether natives or foreigners, to any landed property” (Chinen 1958:8). The Organic Acts of 1845 and 1846 continued the course of the Māhele, which took place in 1848 and introduced the concept of private property into Hawaiian society. Lands were divided into three portions: Crown Lands which amounted to roughly a million acres of land for the King, Kamehameha III (Kauikeaouli) and the royal house; Government Lands which were approximately a million and a half acres set aside to generate revenue for the government; and Konohiki Lands, lands claimed by *ali ‘i* and their *konohiki*, which amounted to about a million and a half acres. However, for these particular lands, title was not awarded until the *ali ‘i* or *konohiki* presented the claim before the Land Commission.

In the fall of 1850, legislation was passed allowing native tenants to present claims before the Land Commission for lands that they were living on and cultivating within the Crown, Government, or Konohiki lands. The process for which native tenants could acquire fee simple property interest in land included providing personal testimonies regarding their residency and land use practices. These testimonies provide first-hand accounts with specific information such as people and place names associated with certain lands. By 1855, the Land Commission had made visits to all the islands and their work finally ended. Between 9,000 and 11,000 land claims were awarded to native tenants totaling only about 30,000 acres. Lands awarded to native tenants became known as Kuleana Lands and all the awards were categorized as Land Commission Awards (LCA) and were given Helu, or numbers.

In the entire district of Puna, only a small portion of the native population was awarded *kuleana* parcels. For Ka‘ohe and Waiakahiula specifically, there were no *kuleana* lands awarded. The absence of *kuleana* awards in these two *ahupua‘a* may indicate the scarcity of habitation in the region during the mid-1800s. And, the lack of *kuleana* awards in the district may be more related to political and other social factors than an absence of inhabitants.

Māhele documents provide a wealth of information regarding former residency, land use, practices, and natural and cultural resources found on the landscape during the mid 1800s. In turn, this information helps shed light on the cultural landscape of Puna and the changes that occurred over the past 200 years. However, since *kuleana* data is limited in the region and non-existent in the project area, it’s difficult to develop a complete picture of the settlement patterns that existed in the district at that time. The Māhele ‘Āina information presented in this section was accessed through the Papakilo database, Waihona ‘Āina, historic maps, and other archival resources.

Ka'ohē Ahupua'a

During the Māhele Ka'ohē was granted to the Government on January 28, 1848. Ka'ohē Ahupua'a was also claimed by Ulumaheiehi (Number 5207), but he was not awarded this claim. The Native Register filing for Ulumaheiehi's claim was found in Volume 6, page 246, Tiff 40 (Figure 30). Below is a transcription and translation of the Native Register claim.

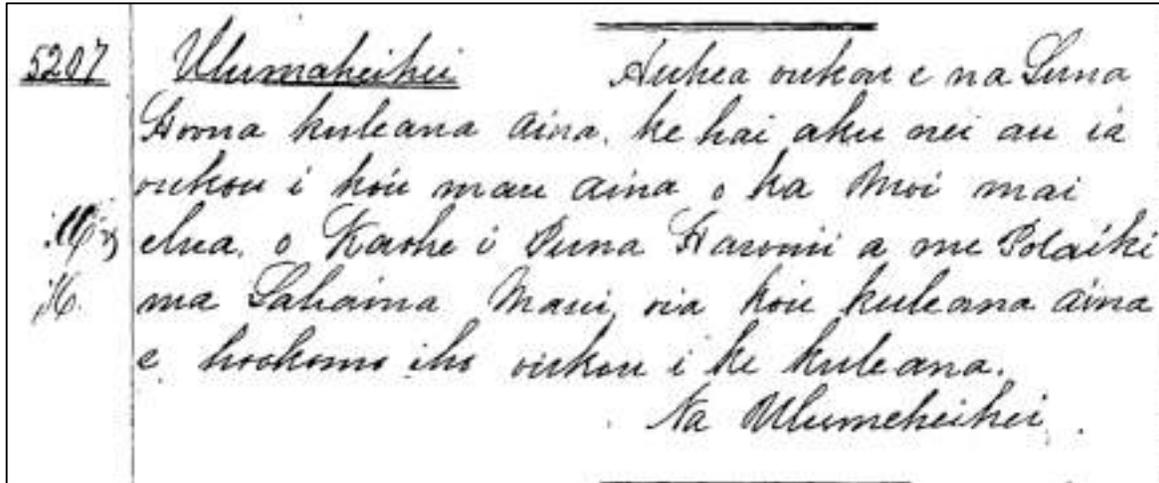


Figure 30. Native Register claim 5207 by Ulumaheiehi for Kaohe Ahupua'a (The award was not granted).

5207 Ulumāhiehie 'Auhea 'oukou e nā luna ho'ōnā kuleana 'āina, ke ha'i aku nui au iā 'oukou i ko'u mau 'āina o ka Mō'i mai 'elua o Ka'ohē i Puna Hawai'i a one Polaiki ma Lahaina Maui 'oia ko'u kuleana 'āina e ho'okomo iho 'oukou i ke kuleana.

Na Ulumāhiehie

5207 Ulumāhiehie Hear ye, to those who oversee land claims, I am declaring to you folks that my lands from the monarchy total in two, Ka'ohē in Puna, Hawai'i and Polaiki of Lahaina, Maui. Those are my land claims that you folks will include in the title.

By Ulumāhiehie

A number of land grants were purchased for Ka'ohē and are listed in the following table. Land grants were plots purchased by natives and foreigners after the Māhele awards and kuleana lands were claimed.

Table 7. Land Grants for Ka'ohē Ahupua'a

Ahupua'a	Grant #	Grantee	Acreage	Year
Kaohe	1533	Kekoa	277.8	1855
Kaohe	7407	Kuwana, Juzo		
Kaohe	4490	Carty, Peter		
Kaohe	4753	Harkins, P.E.		

Ahupua'a	Grant #	Grantee	Acreage	Year
Kaohe	4769	Piper, H.		
Kaohe	4976	Carpenter, Walter A.	77	1906
Kaohe	5017	Henry, Sarah B.		
Kaohe	5248	Armstrong, J.F.		
Kaohe	5280	Jose, Mariano		
Kaohe	7480	Morita, Toyoji		

Waiakahiula Ahupua'a

Mikahela Kekauonohi was awarded 'Āpana 40 of LCA 11216 comprising the land of Waiakahiula on January 28, 1848 (Figure 31). This award was one of a number of lands given to M. Kekauonohi by Kamehameha III during the Māhele including Panau Ahupua'a in Puna. On April 9, 1901, Royal Patent 8095 was issued to Kekauonohi in confirmation of Land Commission Award 11216 for Waiakahiula Ahupua'a. The total area consisted of approximately 2972 acres.

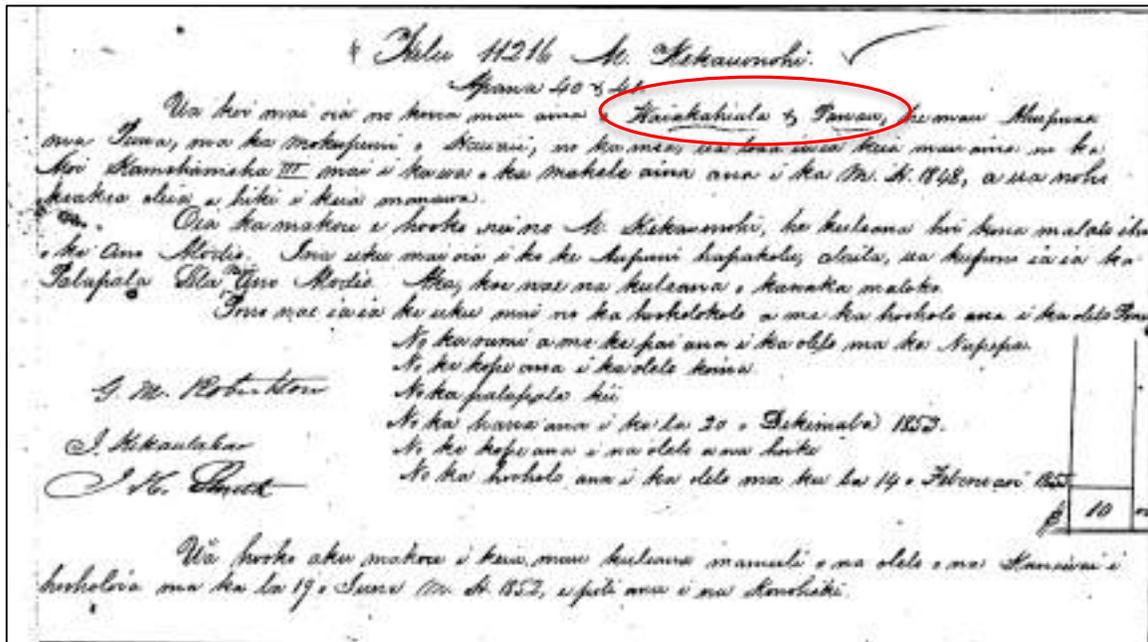


Figure 31. Māhele Award 11216, Waiakahiula Ahupua'a to M. Kekauonohi

The Native Register claim for Waiakahiula was found in Volume 4, page 362, Tiff 99 (Figure 32). And the original Native Testimony for this award was located in Volume 10, page 335, Tiff 350 (Figure 33).

as land use, resource gathering, trade and travel. In 1862, the Hawaiian government established the Commission on Boundaries, also called the Boundary Commission, to determine and certify boundaries for landowners with no deeds. Surveyors mapped out boundaries that were often described by *kama'āina* and *kūpuna* who were intimately familiar with the natural and cultural landscapes of particular areas. Reviewing Boundary Commission testimonies today provides information on traditional cultural practices, place names, and locations of significant natural and cultural resources. While it was beyond the scope of this study to transcribe and translate the boundary commission testimonies for Ka'ōhe and Waiakahiula it is strongly recommended that these materials eventually be reviewed to help reconstruct traditional land settlement and land use in the Puna district.

HAWAIIAN AND ENGLISH NEWSPAPER ARTICLES

Hawaiian Newspaper Articles

This section consists of articles and notices that were published in historical Hawaiian newspapers that mentioned the *ahupua‘a* of Ka‘ohe or Waiakahiula. “Historical Hawaiian newspaper” for this research, is defined as any newspaper that was produced in the Hawaiian Islands during the historical era. This includes those newspapers that were printed in the Hawaiian and English languages.

The results shown are newspapers that are text-searchable within Ho‘olaupa‘i (<http://nupepa.org>), a database of historical Hawaiian language newspapers, and Chronicling America (<http://chroniclingamerica.loc.gov/>), a federal database of historical newspapers found throughout the United States of America. With this in mind, there is a strong possibility that numerous other articles may exist within each database.

Ka‘ohe

1836

Barenaba. “...Aloha oukou a o‘u hoahanau”. *Ke Kumu Hawaii*. April 13, 1836.

Ka‘ohe is briefly mentioned in this article written by a man named Barenaba who traversed through the district of Puna on a religious circuit to visit various villages while spreading the word of God. Below is an excerpt of his journey to Kaohe:

*...A kakahiaka, hai aku la au i ka olelo a ke Akua i ka poe malaila, a ma Kula, a ma Koa'e, a ma Kahuwai, a ma Nanawale poeleele, a kakahiaka, hai aku au i ka olelo a ke Akua ma **Waiakahiula**, a me **Kaohe**, a ma Keonepako, a ma Makuu, a ma Waikahekahe, alaila hiki ma Keaau i ka poaha o ka lua o ko Sabati o Ianuari, loa ka 'u Wahine malaila. Elua au hai ana aku i ka olelo a ke Akua i na kanaka malaila.*

... In the morning, I preached the word of God there, as well as in Kula, Koa‘e, Kahuwai, and Nānāwale where it became night. In the morning, I preached the word of God at **Wai‘akahi‘ula**, **Ka‘ohe**, Keonepako, Maku‘u, and Waikahekahe, where I later made my way to Kea‘au on the Thursday after the second Sunday of January. My wife was there. I preached the word of God twice there.

Table 8. Hawaiian language newspaper articles that mention Ka‘ohe Ahupua‘a

Year	Name of Newspaper	Language Medium	Author	Comments
1836	Ke Kumu Hawaii	‘Ōlelo Hawai‘i	Barenaba	Religious Visits
1843	Ka Nonanona	‘Ōlelo Hawai‘i	Kumu ma Kaohe	Editorial/ Complaint
1861	Ka Hoku o ka Pakipika	‘Ōlelo Hawai‘i	N/A	Hi‘iakaikapoliopole (see mo‘olelo section)
1876	Ka Nupepa Kuokoa	‘Ōlelo Hawai‘i	N/A	Petition for road in Kaohe
	Ka Lahui Hawaii	‘Ōlelo Hawai‘i	N/A	Petition for road in

Year	Name of Newspaper	Language Medium	Author	Comments
				Kaohe
1877	Ka Lahui Hawaii	‘Ōlelo Hawai‘i	Kuamoo	Illegal ‘ōkolehao operations in Kaohe
1896	The Hawaiian Star	English	J.F. Brown	Public land notice
1898	The Hawaiian Gazette	English	N/A	Petition for roadway installation in Kaohe
1905	The Hawaiian Star	English	N/A	Trade of Kaohe lands
	Evening Bulletin	English	N/A	Trade of Kaohe lands
	The Hawaiian Star	English	N/A	Road installation
1907	The Hawaiian Star	English	N/A	Realty transfer
	The Hawaiian Star	English	N/A	Realty transfer
1924	Ka Nupepa Kuokoa	‘Ōlelo Hawai‘i	N/A	Electoral districts
1926	Ka Nupepa Kuokoa	‘Ōlelo Hawai‘i	N/A	Electoral districts

**These results are only a sample of what remains in our historical newspapers and reflect all text-searchable material.*

1876

“Ke Kau Ahaolelo o M.H. 1876”. *Ka Lahui Hawaii*. July 20, 1876.

“Ke Kau Ahaolelo o M.H. 1876”. *Ka Nupepa Kuokoa*. July 15, 1876.

In the 1876 legislative session, a man by the name of Mr. Kaina petitioned the legislature to provide funds for the construction of a road from Kahekahe (Waikahekahe?) to Ka‘ohe. Reports from the session were published both in *Ka Lahui Hawaii* and *Ka Nupepa Kuokoa*:

...Ma ke noi, ua kapaeia na rula a heluhelu mai o Mr Kaina he hoopii mai Puna mai, e noi mai ana i mau tausani dala no ke ala nui mai Kahekahe a hiki i Kaohe ma ka apana o Puna, waihoia a noonoo pu me ka Bila Haawina.

...A motion was made to not oblige to the rules and Mr. Kaina read a petition from Puna, requesting thousands of dollars for installing a roadway between Kahekahe and Kaohe in the district of Puna, it was left on the floor for consideration along with appropriations [needed for the road’s construction].

1877

Kuamoo. “Ma ka Apua ke ola o ka Mea Puhī Okolehao”. *Ka Lahui Hawaii*. September 6, 1877

Kuamoo writes to *Ka Lahui Hawaii* about the distilling of ‘ōkolehao, an alcoholic beverage usually made of fermented ti-leaf root, in the uplands of Ka‘ohe. It was said that they were shipping the ‘ōkolehao to Honolulu by hiding them in bags of *pulu*. He describes this act of making ‘ōkolehao as an evil that must be dealt with by the officers of Puna:

E ka Lahui Hawaii e; Aloha oe:

E oluolu oe e hookomo iho ma ke kowa kaawale o kou kino lahilahi, i ike mai kuu mau hoa e noho mai la i ka aina paia ala i ke onaona i ka hala, o Puna kai nehe i ka puhala.

Ua pakele iho nei o Kaeha mai na maiuu o ke kanawai, a ma ka apua ke ola, a mai ka loa aku nei i Molokai me kuu hanau muli. Ua puhi i ka okolehao iuka o Keaku, a ua hookomoia iloko o na eke pulu, a he pulu ka olelo ana, a ua holo mai nei i Honolulu nei e kuai malu ai, a kolekole ae nei ka no'a, ma ka ona ana o kekahi kanaka, a paa i ka Halewai, ninauia ka mea i ona ai, olelo kela he keiki no Puna, Hawaii mai, he okolehao kana, i miki aku ka hana o ka makai, ua heo ka, me ka lawe pu i kuu kaikuahine, imi loa aku ina ua ike i na ai a ke kanawai, o Kawa kahi noho.

*I ka olelo mai o keia kanaka, aia iuka o **Kaohe** ka nui e puhi malu nei, a kuai malu i na haole. Ua hooia ia mai keia ma ka ona ana o ke kauka Nikola i make iho nei. A ua pakele hou no ia mea haawi waiona mai mo'a i kapuahi.*

*Nolaila, e na makamaka e noho la ma ia uka o **Kaohe**, mai hoomahui i ke puhi okolehao, o loa aku auanei alali ka niho i ka mea loa.*

*Penei ka hana a kekahi kanaka a'u i lohe ai, puhi i ka okolehao maloko o ke ki, laui a nui, he okoa ka mea nana e kii aku e kuai me na haole, aia ia kanaka iuka o **Kaohe** e hana mau nei i keia mea ino e ulu nei ma ia apana.*

E ka ninau ia Rev. J. N. Kamoku, he mahinahou no anei malaila mai kou noho ana'ku a hiki i keia la? Ea, aole, aia iuka. Heaha ka hana? He puhi okolehao, hooinu ka wahine, keiki, a hakaka. Auhea ka makai o ia apana, ua paa paha na maka pilipu me na kamaaina. Ahea ka lunamakai o Puna, e kinai i ka ahi nui e a nei ma kou apana. Eia i Honolulu nei kahi i hoikeia'i o ka no'a a oukou, pilikia ke kahunapule. Auwe, e ala, e kinai i pio ke puhi okolehao a me ke kuai malu me na haole. E makaala na makai i keia hana ino.

Nolaila, e nana mai e na makamaka i keia hana ino, mai hoomahui i ka hana hewa, aka, i ka hana pono.

Dear ka Lahui Hawaii, greetings to you:

Please insert this [article] within the empty spaces of your newspaper, so that my dear friends living in the land of the fragrant wall of hala, Puna of the rustling sea [made by] the *pūhala* may see.

Kaeha was spared from the sharp claws of the law, and escaped with life, where he [traveled] all the way to Molokai with my youngest-born. [They] made 'okolehao in the uplands of Keaku, and placed [the okolehao] inside bags of *pulu*, and claimed that it was indeed *pulu* [in the bags], where it was shipped to Honolulu to be bought secretly. And when the secret was out due to a drunk man. [He was] placed in prison,[and] the drunkard was interrogated, where he stated "[I got it] from a boy from Puna, Hawaii, he has the 'okolehao. The police

acted hastily and departed quickly with my sister to find out if they knew the law. Kawa is where [he] resides.

When the man said that it was in **Kaohe** that most of the illegal distilling was taking place, and sold to foreigners, [his words] were verified by the drunkenness of Doctor Nikola (Nick?) who recently died. The alcohol distributor was spared once more, to not cook it in a stove.

So then, dear readers who live in the uplands of **Kaohe**, do not imitate the 'ōkolehao maker, or you will be screeching between your teeth from the police. This is how another man that I heard about does it, he makes his 'ōkolehao from the tī plant.

When it matures and swells, it is a different product from is brought and sold to the foreigners. That man is in the uplands of **Kaohe**, continuing to make this evil growing in that district.

I question Rev. J.N. Kamoku, is it from the new moon here that you have lived [there] till this day? Indeed not, it is in the uplands. What is being made? It is 'ōkolehao. The women, children drink and fight. Where are the police of that district, are their eyes closed shut like the locals? When will the overseer of Puna will extinguish this large fire that is alit in your folks' district. It was here in Honolulu that your guys' secret about your corrupt priest was revealed. Wake up, and stop making 'ōkolehao and selling them illegally to foreigners. The officials should be vigilant about this wrongdoing.

So, look readers at this evilness, do not copy this wrongful act. Instead, do what is right.

1896

Brown, J.F. "...The agent of public lands". *The Hawaiian Star*. September 8, 1906.

In 1896, a public notice was sent out that informed English speaking audiences that some lands in Ka'ōhe would be put up for sale:

"The agent of Public Lands gives notice that sixteen lots of Governments land in **Kaohe**, Puna, Hawaii, will be open for application on or after September 21st, 1896."

Brown J.F. "Public Land Notice". *The Hawaiian Star*. September 8, 1906.

Notice is hereby given that sixteen lots of Government land in **Kaohe**, Puna, Hawaii, will be open for application on or after 9 a.m., September 21st, 1896, under the provisions of the Land Act 1895, for Right of Purchase Leases and Cash Freeholds.

These lots are from 60 to 100 acres each in area, and are appraised at values from \$4.00 to \$7.00 per acre, being principally good agricultural land suited for coffee cultivation.

Also on or after the above date applications will be received for any unoccupied lots of the old "Homestead" series.

Full particulars as to any of these lots may be obtained at the Public Lands Office Honolulu, or from the various sub-agents in whose districts such lots are situated.

1898

"Puna Landholders Will Ask for Branch Roads". *The Hawaiian Gazette*. February 11, 1898.

Two years after Ka'ohē was put up for sale, a petition was drawn up for homesteaders in Ka'ohē to install a roadway:

The Hilo Tribune says that Mr. Wm. Goudie of Puna while in Hilo last week had a petition drawn up in English and Hawaiian, which will be signed by the homesteaders of Nana and **Kaohē** and by others who are desirous of taking up lands on these homesteads if there were roads leading to them. The petition states that those living on the lands of Nanawale took them up with the understanding that a road should be built. It has been now five years since the lands were opened and no road as yet is built. The lands of **Kaohē** although fertile and valuable for coffee growing have not been taken up rapidly as they would otherwise on account of the lack of road connection. If the road is built, Mr. Goudie says he will keep it in repair at his own expense. The petition will be presented to the Legislature at the next session.

1905

"Real Estate Transactions". *The Hawaiian Star*. January 18, 1905

"Real Estate Transactions". *Evening Bulletin*. January 16, 1905.

"Mahelona (k) to James B. Piliwale, D; 39 a land, **Kaohē**, Puna, Hawaii, \$75. B 264, p 319. Dated Dec 22, 1904."

"The Loan Appropriation Bill". *The Hawaiian Star*. September 15, 1905.

"New road from **Kaohē** Homesteads Puna.....\$4000"

1907

"Realty transfers". *The Hawaiian Star*. February 25, 1907.

"R Ross to P.E. Harkins, Rel: lot 9 of Patent 4753, **Kaohē**, Puna, Hawaii. \$300. B 289, p 352. P.E. Harkins to John Fitzgerald, M; lot 9 of gr 4753, **Kaohē**, Puna, Hawaii. \$200. B 289, p 352. Dated Feb 7, 1907."

"Realty transfers". *The Hawaiian Star*. November 8, 1907.

"John Fitzgerald to P.E. Harkins, Rel; lot 9, gr 4753, **Kaohē**, Puna, Hawaii. \$200. B 295, p 417. Dated Oct 29, 1907. H Piper to R.D. Jankin, D; int in lot 11, patent 4769, **Kaohē**, Puna, Hawaii. \$400. B 296, p. 435. Dated Oct 22, 1907."

Waiakahiula

Table 9. Hawaiian language newspaper articles that mention Waiakahiula Ahupua‘a

Year	Name of Newspaper	Language Medium	Author	Comments
1836	Ke Kumu Hawaii	‘Ōlelo Hawai‘i	Barenaba	Religious visits
1838	Ke Kumu Hawaii	‘Ōlelo Hawai‘i	Barenaba	Religious visits
1860	Ka Hae Hawaii	‘Ōlelo Hawai‘i	L. Haalelea	Trespassing and hunting
1866	Ka Nupepa Kuokoa	‘Ōlelo Hawai‘i	N/A	Legend of Pīkoi. (See mo‘olelo section)
1877	Ka Lahui Hawaii	‘Ōlelo Hawai‘i	Kealawaa	House fire. Spelled as “Waiakaheula”
1908	The Hawaiian Gazette	English	N/A	Realty transfer

* These results are only a sample of what remains in our historical newspapers and reflect all text-searchable material.

1836

Barenaba. “...Aloha oukou a o‘u hoahanau”. *Ke Kumu Hawaii*. April 13, 1836.

Also mentioned in Kaohe sention, see Kaohe 1836.

1838

Barenaba. “No ke kaahele ana e hoike i na kula ma Puna.” *Ke Kumu Hawaii*. February 14, 1838.

Waiakahiula is briefly mentioned in this lengthy article that concerns Barenaba’s excursion through Puna. The article is of interest for its demographic value. Below is the sentence which mentions Waiakahiula and the amount of people who attended services:

...A pau ka hana ma ia wahi, hele a **Waiakahiula** hoike.
 O na kamalii, 49
 O na kanaka makua ike, 63
 O ka poe ma na hua, 11

...After I was done at that place (Kea‘au), I went all the way to **Waiakahiula** to preach: There were 49 children, 63 adults, and 11 other people in the distance.

1860

Haalelea, L. “Olelo Hoolaha”. *Ka Hae Hawaii*. April 4, 1860.

Haalelea (Ha‘alelea?) submitted a brief announcement that was published in *Ka Hae Hawaii‘i* in 1860. The announcement was meant to ward off any unexpected visitors from stepping foot on certain lands for shooting pigs and cattle. Waiakahiula was one of those lands.

*E ike auanei na mea a pau, owau o ka mea nona ka inoa malalo nei, ke papa aku nei au ia oukou a pau loa, mai komo wale oukou maloko o na palena o Hakalaunui a me Namaulua, ma Hilo, a ma **Waiakahiula**, ma Puna, a me Honaunau, ma Kona, e ki wale i na puaa a me na bipi, e noho mau ana maloko o na palena o keia mau aina i haiia maluna, ina o ka mea kue, a uhai i keia mau olelo maluna. E hoolilo au, a me ko'u poe luna ia mea kue, i aihue, a na ke aupuni o ka Moi ka hooluhi ia ia no na la e like me ka nui o ka hoopino ana o ka mea kue, pela e nana ia, i kona hoopai.*

Let it be seen to all, I am the one whose name is below, and I am forbidding everyone from trespassing into the borders of Hakalaunui and Namaulua in Hilo, as well as **Waiakahiula** in Puna, and Honaunau in Kona, to shoot the pigs and cattle that reside in the boundaries of these aforementioned lands. If there is someone who resists, and disregards these words stated above, I, along with my superiors, will convict that person as a thief, and the King's government will become his problem for as many days as he/she did those horrible things. That is what his/her punishment will look like.

1877

Kealawaa, M.K. "Hale Pau Ahi". *Ka Lahui Hawaii*. September 13, 1877.

In 1877, Kealawaa reported a house that burned to the ground in Waiakaheula (perhaps another spelling or misspelling of Waiakahiula?):

*Aia ma **Waiakahiula**, Puna, Hawaii, kekahi hale i pau loa i ke ahi 1 hale hou, a ole i paa 1 hale i paa loa. Ma ka hora 3 1/2 o ka poaha la, 15 o Augate, 1877 nei, oia ka la i pau ai, o ka mea nona ka hale ua pau i ka hele, ma uka loa i ka mahiai aole he mea i koe ma ka hale. 1 elemakule ua hele i ka lawaia o Nahou, kona inoa koe wale no 1 luahine me ka moopuna ka mea e noho ana ma kekahi hale. Eia ke kumu i pau ai he imu ulu, i kahu ia a ua moa ka ulu, koe nae ke ahi i loko o kapuahi, ua aa aku ke ahi a loa ka paia o ka hale, ua pau loa aku la na hale aole mea i koe, hao ke kai, pau na mea aloha o kalua o ka opupa o ke ahi; aole ana olelo mai ua ana.*

In **Waiakahiula**, Puna, Hawai'i, there was a house that was completely destroyed by fire; 1 new house was completely engulfed and another was partially caught in flames. Around 3:30 on Thursday, August 15, 1877, is the day that it all ended. The person whose house was destroyed was not present, and was in the uplands farming. Nothing could be salvaged from the house. An elderly man went fishing whose name is Nahou, and his elderly wife and grandchild to watch the house. This is the reason that [the house] was destroyed: an imu of ulu was prepared. After the ulu was cooked, [it was removed] and only the fire remained. The flames burned and set a wall of the house aflame, burning the house down completely leaving nothing behind. Everything that was precious and dear was lost to the flames.

1908

“B Takamoto...”. *The Hawaiian Gazette*. March 20, 1908.

“B Takamoto to Pat Hoy, A.L.; 49 3-10 acr land, **Waiakahiula**, Puna, Hawaii.
@250. B 293, p 419. Dated Feb 28, 1908.”

English Newspaper Articles

The articles below are a representative of historical English language newspapers that make reference to the *ahupua‘a* of Ka‘ohe and Waiakahiula. Also included are references to Puna, as many of the English newspapers used general land terms to describe a place. Further, articles that reference the *pulu* market are also included as *pulu* from WKOP was likely collected for trade.

In regards to the location of the articles, some of the articles were found at Chronicling America (<http://chroniclingamerica.loc.gov/>), a federal database of historical newspapers found throughout the US that is publicly accessible. This section is presented chronologically by year. Additionally, the table below highlights the keywords found in the articles that are pertinent to this study.

Year	Name of Source	Author	Comments	Keyword
1833	<i>The Missionary Herald, Containing the Proceedings of the American Board of Commissioners for Foreign Missions</i>	Sheldon Dibble and Jonathan Green	Religious tour	Waiakahiula
1834	<i>The Biblical Repository and Classical Review</i>	Henry Cleever	Story of a Robber	Puna
1858	<i>The Merchants' Magazine and Commercial Review</i>	N/A	Pulu market	Pulu, Puna
1862	<i>Scientific American</i>	M.D. Meyers	Pulu market	Pulu, Puna
1864	<i>The Merchants' Magazine and Commercial Review</i>	H.B.A.	Pulu market	Pulu, Puna
1896	<i>The Hawaiian Star</i>	J.F. Brown	Public land notice	Kaohe
1898	<i>Overland Monthly and Out West Magazine</i>	George Caswell	Coffee culture	‘Ōla‘a
1898	<i>The Hawaiian Gazette</i>	N/A	Petition for roadway installation	Kaohe
1905	<i>The Hawaiian Star</i>	N/A	Trade of lands	Kaohe
	<i>Evening Bulletin</i>	N/A	Trade of lands	Kaohe
	<i>The Hawaiian Star</i>	N/A	Road installation	Kaohe
1907	<i>The Hawaiian Star</i>	N/A	Realty transfer	Kaohe
	<i>The Hawaiian Star</i>	N/A	Realty transfer	Kaohe
1908	<i>The Hawaiian Gazette</i>	N/A	Realty transfer	Waiakahiula

1833

Dibble, Sheldon and Green. "Extracts from a letter of Messrs. Green and Dibble, dated May 7, 1832." *The Missionary Herald, Containing the Proceedings of the American Board of Commissioners for Foreign Missions*. February 1833.

In 1832, Sheldon Dibble and Jonathan Green were missionaries sent to Hawai'i by the American Board of Commissioners for Foreign Missions. Below is an excerpt from an article written by Dibble and Green describing their missionary travels in the district of Puna.

...Next I preached at Kanekiki, under a tree by the way-side from Rev. xxii, 17. 'And the Spirit and the bride say, come.' Thence a few miles to Kahuai, where I addressed 200 or 300 from 2 Cor. V, 20. 'Now, then, we are ambassadors (sic) for Christ.' I next preached at Nanawali, to a small congregation, from John I, 9. 'That was the true light,' &c. At Waiakaiula I preached from Psalm cxix, 137. 'Rigtheous art thou o Lord.'

1834

Cheever, Henry. "The Sandwich or Hawaiian Islands: Their History and Relations to the Rest of the World." *The Biblical Repository and Classical Review*. July 1 1849

This excerpt is from a longer article that is a description of Native Hawaiian physiology and cultural traditions. It is added to this list because it tells of a robber from Puna who killed a man from Kohala. Later in the tale, the brother of the Kohala man avenges him by killing the Puna robber. After the tale is done, the article continues to tell "the tales of *Naaupo*:"

...Those robbers by trade were usually men of great physical prowess, and their way was to lie in wait at a pass near the trodden path, and have a child stationed on some eminence near by (sic) instructed to call out carelessly, as if in sport, *kaikoo* (heavy surf,) if there were several in company, so that it would be unsafe to venture an attack; or *kai make* (low tide,) if there were but one or two so that he could venture. A robber in Puna, the southern county, had in this way killed the brother of a man living in Kohala, the northern section of the same island, who was determined to have revenge. He therefore came all the way round through Kona and Kau, and when he had arrived near the spot in Puna where the robber was supposed to lurk, he shaved his head close, and smeared his arms and whole body with some oil of old *Kukui* nuts, so as to make his person slippery as an eel. Then taking a staff, and slinging something upon it after the fashion of Hawaiians, he arranged his *kapa* so that it could be slipped off in a moment, and went limping along like a sick and lame man. As he reached the place of ambush, the robber suddenly appeared and hailed him, "Sick eh?" "Ay," with a cough and one hand place, as if in pain, on his stomach. So he passed on until he had got a little beyond the robber, with an eye over his shoulder on the look out (sic), and when the robber stepped up from behind to grasp his and break his bones, he suddenly dropped his *kapa*, turned and grappled his foe. The slipperiness of his arms and whole body made it impossible for this notable villain so to keep hold of him as to break his bones in the professional way. They struggled and rolled, neither successful, until, both weary, they left off and

couched upon their haunches opposite each other. The robber pointed to his wife on the hill, and said, "You may have her, and we'll quit." But not so thought of the brother of the dead, and again began the mortal strife, till the avenger at length forced the head of the robber into a fissure of the rock, which the natives, who tell the story, point out, and there trampled upon him until he was dead.

1858

"Decisions of the Secretary of the Treasury." *The Merchants' Magazine and Commercial Review*. June 1, 1858.

Although it does not specifically reference the Puna district, this article is of interest for its reference to *pulu*:

The decision of the Collector at San Francisco has, on appeal, been confirmed, in assessing a duty of 15 per cent on "pulu" an article prepared from the fibers of a plant found on the Hawaiian Islands, and used for beds, mattresses, and cushions. The importer claimed that the article was entitled to free entry, alleging that it applied to the same uses as "cotton"

Coan, Titus. "Letter from Mr. Coan, May 3, 1858. Report of his Field." *The Missionary Herald, Containing the Proceedings of the American Board of Commissioners for Foreign Missions*. November 1858.

The letter speaks of Titus Coan's mission work in the district of Hilo. There is also mention of the *pulu* industry that exists in the Puna district:

Besides sugar, of which Hilo will, probably, soon furnish, annually, from five hundred to one thousand tons, our district exports coastwise considerable quantities of arrow-root, coffee, lumber, hides, goat-skins, canoes, hogs, &c. pulu, or fern-down, is also an important article of export. This is a soft, yellow, silken down, gathered from the exhaustless fern-fields of Hilo and Puna. It is much used in California for upholstery, as a substitute for eider-down, wool and hair. More than two hundred thousand pounds of this article have been shipped from Hilo during the past year. Men, women and children engage in collecting it, and many of our rural villages are deserted for months at a time, while the people are collecting pulu in the jungle.

1862

Myers, M.D. "The Pulu for Mattresses." *Scientific American*. August 23, 1862.

This article primarily describes pulu and its uses:

In No. 5, of the current volume of the *Scientific American*, I notice you have copied from the New Bedford *Mercury* an item of the business of the Sandwich Islands, in which the writer speaks of pulu as being a kind of brown thistle down. I have been a resident of the Sandwich Islands for several years and know this to be an error. Pulu is gathered in great abundance, principally on the island of Hawaii, the largest of the group. It grows on stalk or in the crotch of a species of the fern. This fern often grows to the height (sic.) of 10 or 12 feet in the vicinity

and has a body from 2 to 8 inches in diameter. I have ridden through vast fields of this species of fern in the vicinity of the volcano Kilauea, that extended as far as the eye could see. On the edges of these fields nearest the volcanoes the lava has flowed and covered large tracks, forming plateaus upon which the natives have built pleasant hamlets, and are carrying on a lucrative business in gathering and drying the pulu for shipment to San Francisco, where it is extensively used for filling mattresses. From a single fern they gather a tuft about the size of a man's hand and spread it on the grass and lava banks, where it is thoroughly dried, then bagged and transferred on the backs of mules to the sea coasts. There it is pressed in bales for shipment like cotton. Pulu and sugar are the principal exports from the Islands of California...

1864

H.B.A. "The Sandwich Islands. Number IV.—Kilauea." *The Merchants' Magazine and Commercial Review*. October 1, 1864.

The article describes the trek up to Kīlauea, including the ascent From Hilo town and through the dense forests of Puna. In particular, the author mentions the import of *pulu* that is gathered in these forests:

The most remarkable of the gigantic ferns of this belt are the great tree-ferns, with branches four or five feet long. At the foot of these trees is found a soft, feather-like substance, called *pulu* which forms an article of considerable trade. It is used extensively in California for bedding; and in 1862, 738,000 lbs. were shipped to San Francisco. Those who have used it, however, are substituting hair or straw on account of the unhealthiness of the *pulu*, which, from its heat, has the same ill effects as feathers, and it popularly thought to increase rheumatism. It has been recently exported to China in considerable quantities, and it is not improbable that as the demand from California decreases that from China will increase. The natives are largely engaged in gathering it, and are employed more or less by the Chinese merchants of Honolulu...

1865

Coan, Titus. Letters from Mr. Coan, December 22, 1864, and January 6, 1865—Tour in Puna. *The Missionary Herald, Containing the Proceedings of the American Board of Commissioners For Foreign Missions*. May 1865.

The letter below describe Titus Coan's religious tour of the Puna district. He mentions the *pulu* industry in this letter and his stay with a Hawaiian man who attended the Hilo Boarding School:

Tour in Puna.

In the first of these letters Mr. Coan presents a narrative of tours in his field, which will be read with much interest. The first was in the district of Puna, in November, when our brother was soon among the "pulu gatherers, who are scattered through the forests in all directions, from one to three miles from the volcano;" making "the wilderness of Kilauea" one of his "stations in pastoral tours," He writes: Here, on the brink of this great abyss of fire and sulphur, surrounded by puffs of steam and pillars of smoke forever ascending, lighted by

lurid mineral fires, and within the hearing of the splash of igneous waves, the low murmur of subterranean thunder, and the startling detonations of exploding rocks, I gathered my scattered flock, endeavored to impress them with the baleful nature and bitter end of sin, and to lead their minds upward, to realms of purity, peace and love. Here also, for the second time, we celebrated the undying love of Jesus, in the sacramental supper.

From Kilauea I went about ten miles, into the highland forests of Hawaii, where there was another camp of about sixty pulu gatherers. This camp is a romantic one. It is a little opening of field lava and sand, one fourth of a mile in diameter, nearly circular, and surrounded by tall forests and jungle.

At a little distance from this camp, on the east, there is a beautiful pit crater, nearly circular, about three hundred feet deep and from two to three miles in circumference, with a sand floor, so smooth and hard that a cavalry regiment might be reviewed there. At right angles with its western bank runs a fissure, from which hot steam has issued from time immemorial; and here, without fuel, the natives cook their pigs and vegetables.

Civilization in the Forest.

About two miles to the north-west, a rough cone crater rises, some five hundred feet high, surrounded and covered with forests and jungle, In this wild romantic camp, I spent a night, and met with a most cordial welcome. I was entertained with bread (fresh), butter, tea, coffee, milk, sugar, rice, pastry, fowls, eggs, and other meats and vegetables. I sat at a civilized table, in an easy arm-chair, and slept on a bedstead, with soft bed, clean sheets and pillows, and protected by a mosquito netting. The house, was well supplied with clock, watch, Bibles, Testaments, hymn-books and other volumes, and with newspapers.

And this mountain-house in the deep forest, far from the sight and sound of the great world, belonged to a native Hawaiian, who had been one of the poorest of our Hilo boys, and had never attended school more than six months, and that one of the poorest of our common schools. By good behavior, by dint of native energy and great perseverance, and by a fearless profession and consistent exemplification of Christian truth, he has raised himself above most of his neighbors, and gained the respect and confidence of foreigners. He is the judge of the district of Puna, and also a partner with two foreigners, in collection and shipping pulu to California.

Here Mr. Coan preached to an attentive audience, administered the Lord's supper to members of the Puna church, took a collection of seventeen dollars for missionary purposes, and the next day started on his return to the sea shore and to Hilo, laboring at all stations on the way. On this tour he collected one hundred dollars for "the heathen."

1898

Caswell, George. "Coffee Culture in our New Islands." *Overland Monthly and Out West Magazine*. November 1898.

A brief mention in this article on coffee grown in the Hawaiian Islands, mentions 'Ōla'a as the highest known place that coffee grows in Hawai'i:

...Trees set out at the five-hundred-foot elevation grow faster than those higher up, and come more quickly into bearing, but the plants run more wood and have not the stamina of those maturing more slowly. They bear fewer berries when mature, and come more quickly to the period of diminishing returns. The highest bearing coffee known in the Islands is state by the Government report to be "twenty-five miles from the town of Hilo in the celebrated Oloo district."

1896

Brown, J.F. "...The agent of public lands". *The Hawaiian Star*. September 8, 1906.

"The agent of Public Lands gives notice that sixteen lots of Governments land in Kaohe, Puna, Hawaii, will be open for application on or after September 21st, 1896."

Brown J.F. "Public Land Notice". *The Hawaiian Star*. September 8, 1906.

Notice is hereby given that sixteen lots of Government land in Kaohe, Puna, Hawaii, will be open for application on or after 9 a.m., September 21st, 1896, under the provisions of the Land Act 1895, for Right of Purchase Leases and Cash Freeholds.

These lots are from 60 to 100 acres each in area, and are appraised at values from \$4.00 to \$7.00 per acre, being principally good agricultural land suited for coffee cultivation.

Also on or after the above date applications will be received for any unoccupied lots of the old "Homestead" series. Full particulars as to any of these lots may be obtained at the Public Lands Office Honolulu, or from the various sub-agents in whose districts such lots are situated.

1898

"Puna Landholders Will Ask for Branch Roads". *The Hawaiian Gazette*. February 11, 1898.

The Hilo Tribune says that Mr. Wm. Goudie of Puna while in Hilo last week had a petition drawn up in English and Hawaiian, which will be signed by the homesteaders of Nana and Kaohe and by others who are desirous of taking up lands on these homesteads if there were roads leading to them. The petition states that those living on the lands of Nanawale took them up with the understanding that a road should be built. It has been now five years since the lands were opened and no road as yet is built. The lands of Kaohe although fertile and valuable for coffee growing have not been taken up rapidly as they would otherwise on account of the lack of road connection. If the road is built, Mr. Goudie says he will keep it in repair at his own expense. The petition will be presented to the Legislature at the next session.

1905

“Real Estate Transactions”. *The Hawaiian Star*. January 18, 1905

“Real Estate Transactions”. *Evening Bulletin*. January 16, 1905.

“Mahelona (k) to James B. Piliwale, D; 39 a land, Kaohe, Puna, Hawaii, \$75. B 264, p 319. Dated Dec 22, 1904.”

“The Loan Appropriation Bill”. *The Hawaiian Star*. September 15, 1905.

“New road from Kaohe Homesteads Puna.....\$4000”

1907

“Realty transfers”. *The Hawaiian Star*. February 25, 1907.

“R Ross to P.E. Harkins, Rel: lot 9 of Patent 4753, Kaohe, Puna, Hawaii. \$300. B 289, p 352.

P.E. Harkins to John Fitzgerald, M; lot 9 of gr 4753, Kaohe, Puna, Hawaii. \$200. B 289, p 352. Dated Feb 7, 1907.”

“Realty transfers”. *The Hawaiian Star*. November 8, 1907.

“John Fitzgerald to P.E. Harkins, Rel; lot 9, gr 4753, Kaohe, Puna, Hawaii. \$200. B 295, p 417. Dated Oct 29, 1907.

H Piper to R.D. Jankin, D; int in lot 11, patent 4769, Kaohe, Puna, Hawaii. \$400. B 296, p. 435. Dated Oct 22, 1907.”

PUNA'S HISTORICAL ERA

The following section contains selected ethnographic excerpts beginning in the year 1779 from the time of Captain James Cook through present day events occurring in the Wao Kele O Puna study area. There have been a limited number of ethnographic descriptions of Puna that directly references the Wao Kele O Puna study area. Many of the early historical descriptions of Puna are for the more populous coastal area or the Kīlauea area. Nonetheless, some of these accounts reference lands contiguous to Wao Kele O Puna. To better contextualize Puna's historical era, it's important to note that the study area -- Wao Kele O Puna/Puna Natural Area Reserve -- is a contemporary geographic designation and does not necessarily correspond to traditional Hawaiian land boundaries, particularly those of the *ahupua'a*. Despite this, the term *wao kele* also known as *wao ma'u kele* is indeed a traditional Hawaiian land region that describes the rain belt regions (Maly 2001:2). Therefore, finding references that use the traditional *ahupua'a* names of Ka'ohē and Waiakahi'ūla or references to lands adjacent to these two *ahupua'a* are critical to understanding Native Hawaiian customs and practices as well as historic events that occurred in and around the study area. The archival and historical section of this report draws from numerous published and manuscripts references written in both English and Hawaiian.

Early Explorers

Captain James Cook's Expedition, 1779

Lieutenant King, who traveled with Captain Cook on his third voyage to the Pacific in 1779, wrote one of the earliest European descriptions of Puna. Cook and his crewmen did not debark their ship and walk the lands of Puna. However, they made significant observations from the ship *Discovery* regarding the differences in population and cultivation between the southwestern and easterly sections of Puna. Lt. King writes:

On the SE sides [of Hawai'i Island] are the districts of Opoona [Puna] & Kaoo [Ka'ū]. The East part of the former is flat, covered with coconut trees, and the land far back is of a moderate height. As well as we could judge this is a very fine part of the Island, perhaps the best.

On the SW extremity of Opoona the hills rise abruptly from the sea side, leaving but a narrow border, and although the sides of the hills have fine verdure, yet they do not seem cultivated, and when we sailed pretty near & along this end of Opoona, we did not observe that it was equally populous with the Eastern parts... (Beaglehole 1967:606)

Early Missionaries

William Ellis, 1823

In 1820, the American Board of Commissioners for Foreign Missions (ABCFM) in Boston dispatched an expedition to extend their missionary effort to Hawai'i (Ellis

1963:iii). By 1823, the ABCFM had established two mission stations, one on O‘ahu and the other on Kaua‘i (Ellis 1963:iv). The ABCFM sought to increase their mission stations around the islands, and in June of 1823, William Ellis (Figure 34) led the first party of missionaries on a circuit of Hawai‘i Island. Ellis along with his missionary companions, Asa Thurston, Artemas Bishop, Joseph Goodrich and mechanic named Harwood, visited Hawai‘i Island to see how receptive the people would be to Christianity and to locate sites for future mission stations (Ellis 1963:iv). Ellis and his party of missionaries landed in Kailua, Kona. Unfamiliar with this rugged landscape, Ellis’s party was guided by experienced *kama‘āina* who was provided to them by Governor John Adams Kuakini. From Kona, they walked south to Ka‘ū and then up to Halema‘uma‘u at Kīlauea. Ellis was captivated by and wrote extensively about the area’s volcanic activity. Ellis and his party were the first westerners to travel through Puna and the second foreigners to note differences in population and cultivation along the Puna coast. While traveling around the island, Ellis wrote extensively about the environment and the customs and manners of the Hawaiian people. After leaving Kīlauea, they descended towards the coast, arriving first at Kealakomo:

As we approached the sea, the soil became more generally spread over the surface, and vegetation more luxuriant. About two p.m. we sat down to rest. The natives ran to a spot in the neighborhood, which had formerly been a plantation, and brought a number of pieces of sugar-cane, with which we quenched our thirst, and then walked on through several plantations of the sweet potato, belonging to the inhabitants of the coast... (Ellis 1963:182)

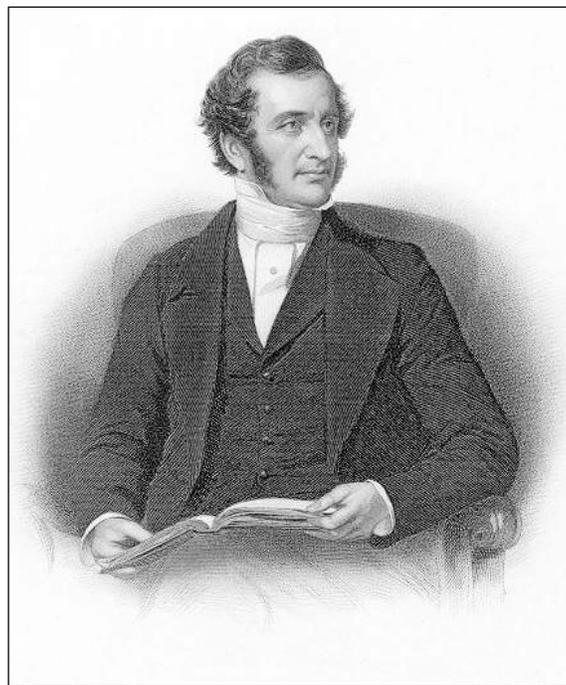


Figure 34. William Ellis (National Library of Australia)

The Hilo Mission Station, 1824

In 1824, the ABCFM established the Waiākea Mission Station, later to be known as the Hilo Mission Station. The Hilo Mission Station was responsible for missionary work in the districts of Hilo, Puna and parts of Ka‘ū (Coan 1882:29). Schoolmaster Samuel Ruggles and his wife, Nancy Wells Ruggles, from the First Company of Missionaries (along with the Reverend Joseph Goodrich and his wife, Martha Barnes Goodrich, from the Second Company) were the first missionaries assigned to the Hilo area. In 1832, David Belden Lyman and his wife, Sarah Joiner Lyman, arrived with the Fifth Company of missionaries and were the first missionaries to settle in Hilo (Lyman 2007:9). Titus Coan (Figure 35) and his wife, Fidelia Church Coan, from the Seventh Company, joined the Lyman’s in 1835 and remained in Hilo until his death in 1882 (Coan 1882:I). Both the Coans and Lymans extended the efforts of The Hilo Mission Station by traveling into the remote parts of Puna to preach Christianity. T. Coan writes:

For many years after our arrival there were no roads, no bridges, and no horses in Hilo, and all my tours were made on foot. These were three or four annually through Hilo, and as many in Puna; the time occupied in making them was usually ten to twenty days for each trip. (Coan 1882:31)

Titus and Fidelia Coan, 1835-81

Titus Coan was born on February 1, 1801 in Killingworth, Connecticut to Gaylord Coan and Tamza Nettleton and was the youngest of seven children (Coan 1882:1). On November 23, 1834, Mr. Coan and his wife, Fidelia Church Coan, received instructions as missionaries to the “Sandwich Islands” by the American Board of Commissioners for Foreign Missions (ABCFM). On December 5, of the same year, Mr. and Mrs. Coan and a few other missionaries boarded the merchant ship *Hellespont* to begin their journey to Hawai‘i (Coan 1882:18). Arriving in Honolulu on June 5, 1835, they were greeted by the members of the Hawaiian mission and taken to meet the Rev. Hiram Bingham where they received further instructions to meet with Mr. David and Mrs. Sarah Lyman in Hilo. On July 6, the Coan's embarked from Honolulu in the crowded schooner *Velocity* and landed in Hilo on July 21, 1835 (Coan 1882:23).

While teaching at the Hilo Boarding School with the Lyman’s, the Coan’s were taught the Hawaiian language daily by a man named Barnabas (Coan 1882:27). Titus quickly learned the Hawaiian language and within three months of his arrival, he began to tour through Hilo and Puna while preaching in the Hawaiian language. Coan writes:

I went into the pulpit with Mr. Lyman, and preached my first sermon in the native language. Soon after, I made a tour with him into Puna, one wing of our field, and then through the district of Hilo, in an opposite direction. (Coan 1882:27)



Figure 35. Titus Coan ca. 1880 (Hawaiian Historical Society)

Although the majority of their tours were in the more populated coastal areas of Puna, both Titus and Fidelia wrote in great detail about the variations in the landscape and the environment. On one such account, Titus described the physical features of Puna as “remarkably different from those of the neighboring district” (Coan 1882:39).

Its shoreline, including its bends and flexures, is more than seventy miles in extent. For three miles inland from the sea it is almost a dead level, with a surface of pahoehoe or field lava, and *a-a* or scoriaceous lava, interspersed with more or less rich volcanic soil and tropical verdure, and sprinkled with sand-dunes and a few cone and pit craters. Throughout its length it is marked with ancient lava streams, coming down from Kilauea and entering the sea at different points along the coast. These lava streams vary in width from half a mile to two or three miles. From one to three miles from the shore the land rises rapidly into the great volcanic dome of Mauna Loa (Long Mountain). The highlands are mostly covered with woods and jungle, and scarred with rents, pits, and volcanic cones. Everywhere the marks of terrible volcanic action are visible. The whole district is so cavernous, so rent with fissures, and so broken by fiery agencies, that not a single stream of water keeps above-ground to reach the sea. All the rain-fall is swallowed by the 10,000 crevices, and disappears, except the little that is held in small pools and basins, waiting for evaporation. The rains are abundant, and subterranean fountains and streams are numerous, carrying the waters down to the sea level, and filling caverns, and bursting up along the shore in springs and rills, even far out under the sea. Some of these waters are very cold, some tepid, and some stand at blood heat, furnishing excellent warm baths. There are large

caves near the sea where we enter by dark and crooked passages, and bathe by torchlight, far underground, in deep and limpid water.

Puna has many beautiful groves of the cocoa-palm, also breadfruit, pandanus, and ohia, and where there is soil it produces under cultivation, besides common vegetables, arrowroot, sugar-cane, coffee, cotton, or anges, citron, limes, grapes, and other fruits. On the highlands, grow wild strawberries, cape gooseberries, and the ohelo, a delicious berry resembling our whortleberry. (Coan 1882:39)

Explorers

Chester S. Lyman, 1846

On May 14, 1846, Chester S. Lyman arrived in Honolulu on the ship *Mariposa*. Lyman spent some thirteen months in the islands and traveled through Kaua'i, O'ahu, Maui and Hawai'i Island (Lyman 1924:xi). Lyman was a "sometime professor" of astronomy and physics at Yale University. Like many other scientist and visitors who visited the islands, Lyman was drawn to the volcanic wonder of Kīlauea. He made two separate journeys through Puna, the first to visit Kīlauea and on the second tour he accompanied Mr. Coan on his quarterly tours through the coastal regions of Puna for mission work. Shortly after arriving in Honolulu, on June 30th 1846, Lyman set out from Hilo to visit Kīlauea. While en route to Kīlauea, Lyman passed through Puna where he wrote about the landscape and the activities of the people.

Tues 30th June [1846]. Party all ready and started off for the Volcano about 11 AM. The company consisted of 12 young chiefs (4 females & 8 males), Mr. Cooke & Mr. Douglas, Dr. Rooke's wife, John Ii, Capt. Newell, Mr. Andrews of Molokai, Mr. Coan & his son Titus Munson, myself, together with a train of 30 or 40 natives to carry luggage &c making in all a procession of 50 or 60 individuals.

We now entered a piece of woods thro' which the path was somewhat hilly & rough. The woods extend about 4 miles. In them are two cleared spots, & in the second of these nearly through the woods we passed the boundary line between the districts of Hilo & Puna, about 8 miles from the former village.

... at 7 [pm, we] arrived at our stopping place for the night. It is a new halfway house built by Mr. Pitman & very convenient except that food for horses is scarce in the vicinity.

This house as near as we could estimate is not far from 18 or 19 m from Hilo & about 15 miles from the Volcano, the whole distance being somewhere between 30 & 35 miles. This place is the district or division of Olaa, & has been open but a few weeks. This old house or stopping place commonly called Olaa is about 3 or 4 m back.

The path bore generally southwest, the surface mostly level, covered with a light soil with ferns & grasses. Wilkes remarks that after leaving Olaa his course was over an old lava plain with no distinct path. [Wilkes, *Narrative*, vol 4. p.119: “After leaving Olaa, we had no distinct path to follow; for the whole surface became a mass of lava, which retained its metallic lustre, and appeared as if it had just run over the ground-- so small was the action of decomposition.”] On the contrary the path all the way is well trodden, & if one were to go out of it he would soon be in difficulty from the numerous fissures by which the lava is intersected. The whole face of the country is a lava flow, but has every where become covered with soil & vegetation. Tree ferns 20 to 30 ft high.

The last few miles before reaching the volcano the country is rather more uneven & the last miles or two of our course was along the southern side of an old volcanic crater. (Lyman 1924:87-89)

Based on Lyman's description of the trail to Kīlauea, it appears that they traveled along the northwestern limits of Wao Kele O Puna. His note on the visibility of an old volcanic crater may suggest that they were traveling near the Kīlauea East Rift Zone.

Wilkes Expedition, 1840-41

In the years of 1840-41, Commander Charles Wilkes (Figure 36) of the United States Exploring Expedition toured the Hawaiian Islands. In 1841, Wilkes and his party traveled to Kīlauea to witness and study the active volcano. Wilkes' narrative describes the landscape and the activities and practices of the people of Puna. Wilkes most notable contribution is his map of the Puna district which includes some general alignments of various trails throughout the district.

The Wilkes party consisted of some two hundred people, a majority being native Hawaiian men and their families hired to haul supplies and provisions (Wilkes 1841 v.4:124). The party set off from Hilo, passed the Waiākea fishponds, and began to ascend towards the district of Puna where they reached the residence of a chief named Pea located in ‘Ōla‘a. Throughout his journey, Wilkes intermittently takes elevation readings using a barometer. On one such account he writes, “I found Olaa to be one thousand one hundred and thirty-eight feet above the level of the sea, and the temperature there was 72°” (Wilkes 1841 v.4:127). At about fifteen miles from ‘Ōla‘a at a place Wilkes called “Kapuauhi” [Kapuokaahi], Wilkes gives another elevation reading. “The height we has now attained was two thousand one hundred and eighty-four feet; the thermometer, 72°; the lowest temperature in the night, 58°” (Wilkes 1841 v.4:129).

Wilkes elevation readings along with his 1841 map depicting the trails makes this account one of the best known trails that would have passed through the Wao Kele O Puna Natural Area Reserve (Figure 37).



Figure 36. Charles Wilkes (C. Wilkes 1845)

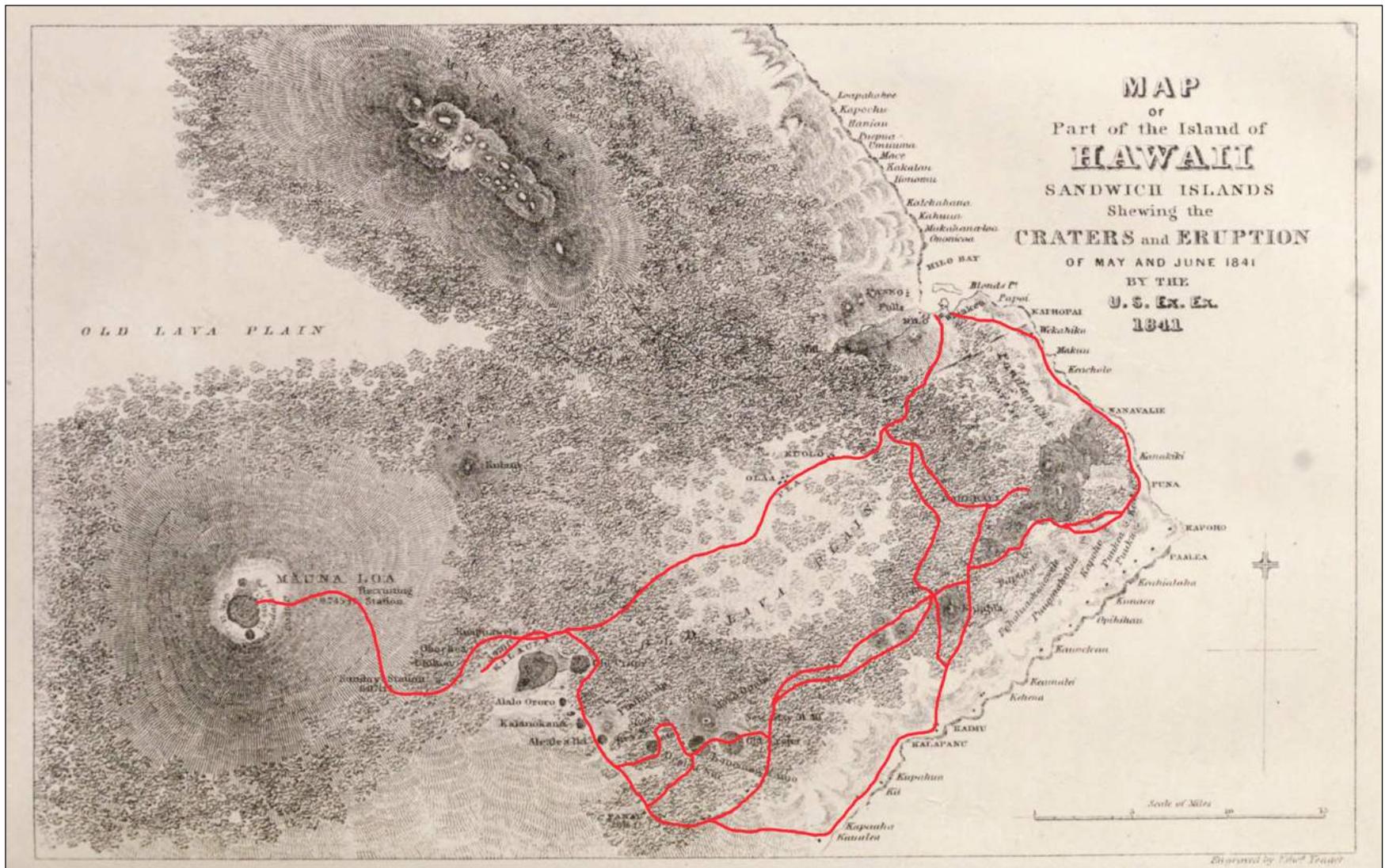


Figure 37. Map of the Puna district from Wilkes' 1841 Expedition

Scientists

American Geologist, Captain Clarence Edward Dutton, 1882

In 1882, American geologist Clarence E. Dutton traveled to the Hawaiian Islands to study the various volcanoes. Dutton spent much of his time on Hawai'i Island studying the active Mauna Loa and Kīlauea (Orme 2007:275). After visiting the Kīlauea area, Dutton traveled from the uplands to the coastal region of Puna. Dutton writes extensively about the landscape and the lifestyles of the people of Puna. Dutton writes:

Leaving Kilauea I took the trail leading into the district of Puna, which is the southeasternmost portion of the island. The road leads through a forest of ohia, with a heavy undergrowth of large ferns and shrubbery, and over fields of pahoehoe only partially covered with a scanty soil.

Two large cinder cones are noteworthy objects by the way, being situated along what appears to be a line of frequent rupture extending from Kilauea eastward.

To the eastward the gentle slope of Kilauea declines away to the sea, and a row of cinder cones is seen in the distance ranging along the same line of eruption. No less than seven large pits may be detected similar in character to Poli-o-keawe, some of which are even deeper, and one or two are quite as large, if not larger.

For eight or nine miles the trail steadily descends, but so gradually that it is only just noticeable. At length we reach the verge of a long steep hill, down which the trail zigzags among the rocky fragments to a platform 700 or 800 feet below. A few miles further on we are clear of the ohia forest, and find ourselves among the beautiful kukui or candle-but trees with their bright green foliage and dense shade. Again the trail descends obliquely a long, steep hillside, which sweeps downward quickly to a broad, smooth platform near the level of the sea, which is now only two or three miles distant. (Dutton 1884:146-47)

Based on Dutton's descriptions, it's clear that he is traveling along the Kīlauea East Rift Zone towards the Puna coast. The exact alignment of the trail cannot be fully determined from his writing; however, it is highly suspected that Dutton may have traveled near the Wao Kele O Puna area. Dutton provides no description of activities taking place in the upland regions, however he describes the lower coastal area as being more populated:

The native population is somewhat scanty and has undergone a great decrease within the present century, as in all other parts of the island. The decrease, however, seems to be due more to the emigration of the inhabitants to the large towns, like Honolulu and Hilo, than to the ravages of those diseases which are supposed to be the prime cause of the decay of

the Hawaiian race. Many of the natives also go to other parts of the island, where they obtain employment upon the plantations and in other occupations. But those who remain retain considerable of their primitive character, spending the day in lounging fishing, and visiting, living in grasshouses and subsisting principally upon fish and poi. On the other hand, they are amiable, hospitable, and peaceful to the last degree. (Dutton 1884:147)

Historical Economies and Land Use Associated With Wao Kele O Puna

The historical economies associated with Wao Kele O Puna and the greater Puna district echo the many changes that were taking place across Hawai‘i during the nineteenth and twentieth centuries. The traditional subsistence lifestyles of the people gradually shifted to a market economy that allowed one to earn cash to purchase or lease land or to pay taxes. The early economies of Puna occurred in a period of transition as Native Hawaiians continued to practice their traditional familial occupations while integrating into the market economy. To introduce Puna’s historical economies and the unfolding of economic events, it’s important to share the story of a remarkable Native Hawaiian man from ‘Ōla‘a named Hawelu.

Ka Mo‘olelo Pokole O Hawelu (The Short Story of Hawelu)

According to Manning, Hawelu was born in 1834 into a family of *kia manu* or bird catchers. During the nineteenth century, *kia manu* was an old but changing profession, as the rare native birds began to pique the interest of western scientists and hobbyists. Hawelu’s extensive knowledge of the many native birds allowed him to work with several notable bird collectors such as James D. Mill and Scott B. Wilson. As the profession of *kia manu* continued to change, Hawelu could no longer support his family on bird catching alone. From about the 1860’s through the late nineteenth century, Hawelu pursued many other endeavors. Hawelu and his wife, Lipeka, maintained a halfway house for some twenty years near present day Mountain View on the old Hilo-Kīlauea crater trail. Hawelu and Lipeka would greet the weary travelers and many would rest or spend the night at Hawelu's halfway house (Manning 1981:59-66).

Visitors were fed and occasionally sold souvenirs such as feather *lei* and *kapa* made of *māmaki* (bark cloth made from the inner bark of the *Pipturus albidus* plant). However, when the legislature of the Kingdom appropriated \$30,000 for the construction of a carriage road between Hilo and Kīlauea, Hawelu's independent business was thwarted. The new route bypassed Hawelu’s halfway house, and the visitors were encouraged to stay at the Volcano House. Consequently, this new route left little business for Hawelu. Nonetheless, Hawelu continued to be a flexible independent entrepreneur. He prepared cooked *kalo* into *pa‘i ‘ai* and sold it to the Volcano House and later in 1883, he began to sell his *pa‘i ‘ai* in Hilo. Hawelu ventured into the *pulu* industry during the 1870’s and harvested ‘*ōhi‘a* and *koa* to make *poi* boards. In 1883, Hawelu purchased a piece of land in Waiākea, Hilo from the Estate of John Parker. In 1887, Hawelu sold his ‘Ōla‘a property for \$200 to Miss Kalua Nihoa. The end of Hawelu's story is unknown, nonetheless, he lead a hardworking and venturesome life (Manning 1981:59-66).

Hawelu was involved in many of the economic initiatives that took place in Puna during the 19th century. Many of the business ventures that Hawelu engaged in, with the addition of a few more, will be discussed in greater detail in the following sections. Hawelu's story reminds us of the various economic ventures that took place in Puna and carries the message of resourcefulness, persistence, and adaptability during changing times.

Sandalwood Industry

While literature on the sandalwood industry in Hawai'i is copious, there are limited accounts describing whether Wao Kele O Puna or the nearby regions were accessed to gather sandalwood. One of the earliest accounts describing the harvesting of sandalwood from the Puna district is by William Ellis during his 1823 tour through Puna. Ellis writes:

During the same journey [returning to Hilo from the volcano] we overtook Maaro, the chief of Waiakea and three or four hundred people, returning with sandal wood, which they had been cutting in the mountains. Each man carried two or three pieces, from four to six feet long, and about three inches in diameter. The bark and sap had been chipped off with small adzes, and the wood appeared lighter in colour than what is usually sold at Oahu, probably from its having been but recently cut down. (Ellis 1963:227)

In 1873, while establishing boundaries with a surveyor, Uma K. Swain of Kea'au provides another account of sandalwood harvesting near Wao Kele O Puna. "Swain also notes that sandalwood was harvested from the lands of Kahauale'a and Kea'au -- both lands contiguous with the Puna Forest Reserve, to the west and north respectively" (Holmes 1985:12).

William T. Bingham offers another account of sandalwood growing on lands contiguous to the Wao Kele O Puna area and writes:

Here and there on the way from the coast at Panau we passed lava streams. Ohia trees were growing on these, thin and tall, suggestive of alpine regions... At the height of eighteen hundred feet we entered the fern forest. The fruit of the poha (*Physalis*) and ohelo (*Vaccinium*) was abundant, and sandal-wood was occasionally met with at an elevation of two thousand feet. (Bingham 1909:94)

Pulu Industry

The *pulu* processing industry was a commercial export that began in Puna in 1851, peaked in 1862, and ended by 1884 (Holmes 1985:22; Thrum 1929:80). *Pulu* is the product of the endemic *hāpu'u pulu* (*Cibotium spp.*) tree fern (Figure 38). *Hāpu'u* is found in wet forests in association with mature 'ōhi'a (*Metrosideros spp.*) at elevations from about 1,000 feet to 6,000 feet (Valier 1995:53). *Pulu* is the soft, golden-yellow wool

that covers and protects the young fern shoots growing at the top of the trunk. Traditionally, *pulu* was used to dress wounds and to embalm the dead (Pukui and Elbert 1986: 354). As a commercial industry, *pulu* was used to stuff mattresses, pillows, and other upholstering purposes (Thrum 1929:80).

Hāpu‘u is especially abundant on Hawai‘i Island and during export years was harvested from the districts of Hāmākua, Hilo, Puna and Ka‘ū. Many Native Hawaiian *kama‘āina* were employed as *pulu* gatherers. The *pulu* gatherers utilized many of the traditional trails in the uplands of Puna, but they also cut many new trails specifically to move *pulu* from the forest to the processing stations (Holmes 1985:22). William T. Bingham, an early ethnologist to visit the Puna area, writes: “In the early sixties [1860’s] the business of picking and packing *pulu* had become so important that trails cut by the natives thus employed, opened the crater country far more than ever before...” (Bingham 1909:94).



Figure 38. *Hāpu‘u pulu, Cibotium species.*

The *pulu* gatherers harvested, cleaned, dried, and prepared bales for shipment for the California market and other world-wide locations such as Australia; Vancouver, Canada; and Portland, Oregon (McGregor 2007:161). In 1858, the market value for *pulu* ranged from 15 to 20 cents per pound, with 30 pounds of *pulu* being ample for a mattress (Thrum 1929:79-80). While traveling through Puna to visit Kīlauea in the 1860’s, Willis H. Baxley provides a description of the *pulu* industry:

At twenty-two miles from Hilo we entered a dense *ohia* forest of large growth, with the *pulu fern* also in great number and size, some of them twenty feet high, and from one and a half to two feet in diameter. The *pulu* of commerce is obtained from this fern, and is extensively used as a substitute for feathers and hair, in the making of beds and mattresses, and stuffing of sofas and chairs. In the natural state the *pulu* forms a snuff-colored silken envelope for the young and tender branches of the fern, which grow from the top of the stalk or trunk, forming beautiful scrolls

until of sufficient strength to supersede the older branches and leaves that droop on all sides like graceful plumes. In gathering the *pulu* the natives cut from the top of the fern trunk the tender scrolls in mass, then strip off the soft fibrous wrapper that protects them, which they loosen by picking, and expose for several weeks on platforms to the rain and sun. From two to four pounds are gathered from a full-sized tree. When perfectly cleansed and dry, it is bagged and sometimes baled for shipping, and is much sought after for the California market. (Baxley 1865: 596)

Obed Spencer was the superintendent of *pulu* gatherings in the districts of Puna and Hilo. However, it was a Hawaiian man by the name of John Kaina, the district judge, who leased vast amount of government lands near the Kīlauea area for the purpose of gathering *pulu* (Holmes 1985:22). Bringham provides a description of Kaina's residence and one of the *pulu* processing camps:

... we came to a tract of pahoehoe where was the *pulu* station to which the roads had been cut. This was the residence of a remarkable Hawaiian who had leased the whole district for the *pulu* business, -- Kaina, the district judge. His house was directly on the line of craters, and only a few rods from stream cracks where his men cooked their food. It was well built, and surrounded with a substantial stone wall. The interior was furnished with bedsteads, rocking-chairs, and other conveniences; and our supper table was supplied with fresh wheaten bread, milk, butter, eggs and delicious ohelo berries.

West of the house was a large open field where the silky, golden fibre of the *pulu* is dried before packing... (Bringham 1909:94)

It appears that Kaina's *pulu* gathering domain extended well down the Kīlauea rift zone. Correspondence between Kaina and government officials indicates he was picking *pulu* from government lands in Maku'u, Panauiki, Laeapuki, Kapa'ahu, Kupahua and Kalapana. In 1860, Kaina and Heleluhe wrote a letter to Lot Kamehameha saying, "These are the *pulu* lands of the Government here in Puna: 1. Panauiki; 2. Laeapuki; 3. Kapaahu; 4. Kupahua; 5. Kalapana. Another letter written by Kaina to Gulick in 1870 states, "I sold to Opikaia, the younger brother of Poonahohou, all of the wild cattle in Makuu... The *pulu* and ohia trees will be reserved" (Holmes 1985:23).

Gathering *pulu* was a dangerous and unfortunate industry for many. An account by Bringham describes the dangerous conditions that *pulu* pickers endured:

As I followed a path made by the *pulu* pickers through the dense forest, I came upon a large hole on the edge of the path which proved to be the entrance to a cave of great depth. The path had been turned aside to avoid it, and in the dark it would be very dangerous. Such holes are common in this part of Puna, and natives occasionally disappear mysteriously. (Bringham 1909:97)

Additionally, the gathering and exporting of *pulu* had lasting negative impacts on Hawaiians. Because one could make more cash money being involved in the *pulu* trade during this time, many farmers let their crops go fallow and focused their energies on gathering *pulu* to sell. Reverend Shipman wrote about the effects of the *pulu* trade on the locals:

...The effect – on them – is not good; not that the pulu is not a source from which they might secure comfort to themselves and families, but the actual result is the reverse. They are offered goods to almost any amount, to be paid for in pulu; this to a native is a strong temptation to go into debt. Consequently many of them are deeply in debt and almost all to some extent. The policy of traders is to get them in debt and to keep them there so long as possible... When once in this condition they are almost entirely under the control of their creditors, and are compelled to live in the pulu regions, at the peril of losing their houses and lots, and whatever other property they may possess. Thus their homes are almost in reality deserted, ground uncultivated. (Ka‘ū Mission Station Report 1860)

Interviews conducted by Holmes in his 1985 report echoes this sobering reality noting, “Kahauale‘a mauka and portions of the Puna Forest Reserve are among the most dangerous, if not the most dangerous areas known to walk through on the island of Hawai‘i” (Holmes 1985:23).

Based on the documented information about the *pulu* industry in Puna, it is highly likely that people accessed parts of Wao Kele O Puna to gather *pulu*. Some of the descriptions of access trails appear to be within or near to Wao Kele O Puna. The favorable growing elevation for the *hāpu‘u* tree fern also puts it within the Wao Kele O Puna area.

Cattle

Wild cattle were known to roam free in and around the Wao Kele O Puna area (Figure 39). The earliest account comes from an article written in the Hawaiian language newspaper, *Ka Hae Hawai‘i*, on April 4, 1860. The article references wild cattle and other ungulates that roamed freely in Waiakahiula, Puna:

OLELO HOOLAHA

E IKE auanei na mea a pau, owau o ka mea nona ka inoa malalo nei, ke papa aku nei au ia oukou a pau loa, mai komo wale oukou maloko o na palena o Hakalaunui a me Namaulua, ma Hilo, a ma **Waiakahiula**, ma Puna, a me Honaunau, ma Kona, e ki wale i na puaa a me na bipi, e noho mau ana maloko o na palena o keia mau aina i haiia maluna, ina o ka mea kue, a uhai i keia mau olelo maluna. E hoolilo au, a me ko'u poe luna ia mea kue, i aihue, a na ke aupuni o ka Moi ka hooluhi ia ia no na la e like me ka nui o ka hoopino ana o ka mea kue, pela e nana ia, i kona hoopai.

L. HAALELEA.

Honolulu, Aperila 2, 1860.

NOTICE

Let it be known by all, that I am the one whose name is written below, is forbidding all from trespassing within the boundaries of Hakalaunui and Namaulua in Hilo, and **Waiakahiula**, in Puna, and Honaunau in Kona, to freely shoot pigs and cattle that have continuously reside within the boundaries of these aforementioned lands. If there are any who resist and breaks the words above, I, along with my supervisors will designate that resistor as a thief. And the government under the King will burden the resistor for as many days they had caused distress, that is how his/her punishment will be observed.

L. HAALELEA

Honolulu, April 2, 1860

Charles Langlas in his research with the people of Kalapana provides us with a description of the livestock in the Kalapana area during the 1920's. Langlas writes:

In the twenties there were open vistas along the coast and up to the forested hills inland... Instead of the lush growth of trees that we saw [during 1987-89] in the coastal flat where the road ran, there was only grass, with a few breadfruit, guava and mango trees, and a scant fringe of coconut palms at the shore. The stock kept by Hawaiian families-- cows, pigs, and horses--was allowed to roam free, and it kept the growth eaten down. Only the houseyards were protected from the animals, by means of rock walls built around them. (Langlas n.d.:3)

Holmes reports that cattle was allowed to roam free in and out of the Puna Forest Reserve well into the 1950's, but at various times the Minister of the Interior would sell rights to hunt for wild cattle (Holmes 1985:14). There is limited documented information about cattle domestication near the Wao Kele O Puna Area. On the 1927 Puna Forest Reserve registered map 2753, government surveyor Walter E. Wall notes a pasture on the eastern boundary between the Puna Forest Reserve and Maku'u. It is uncertain from this map as to what kind of animal domestication occurred on these pasture lands.

Although cattle ranching and domestication occurred in some parts of Puna, all of the accounts above indicate that cattle was present in the Wao Kele O Puna area. However, it appears that the cattle were allowed to roam free and were not confined to specific areas of domestication.

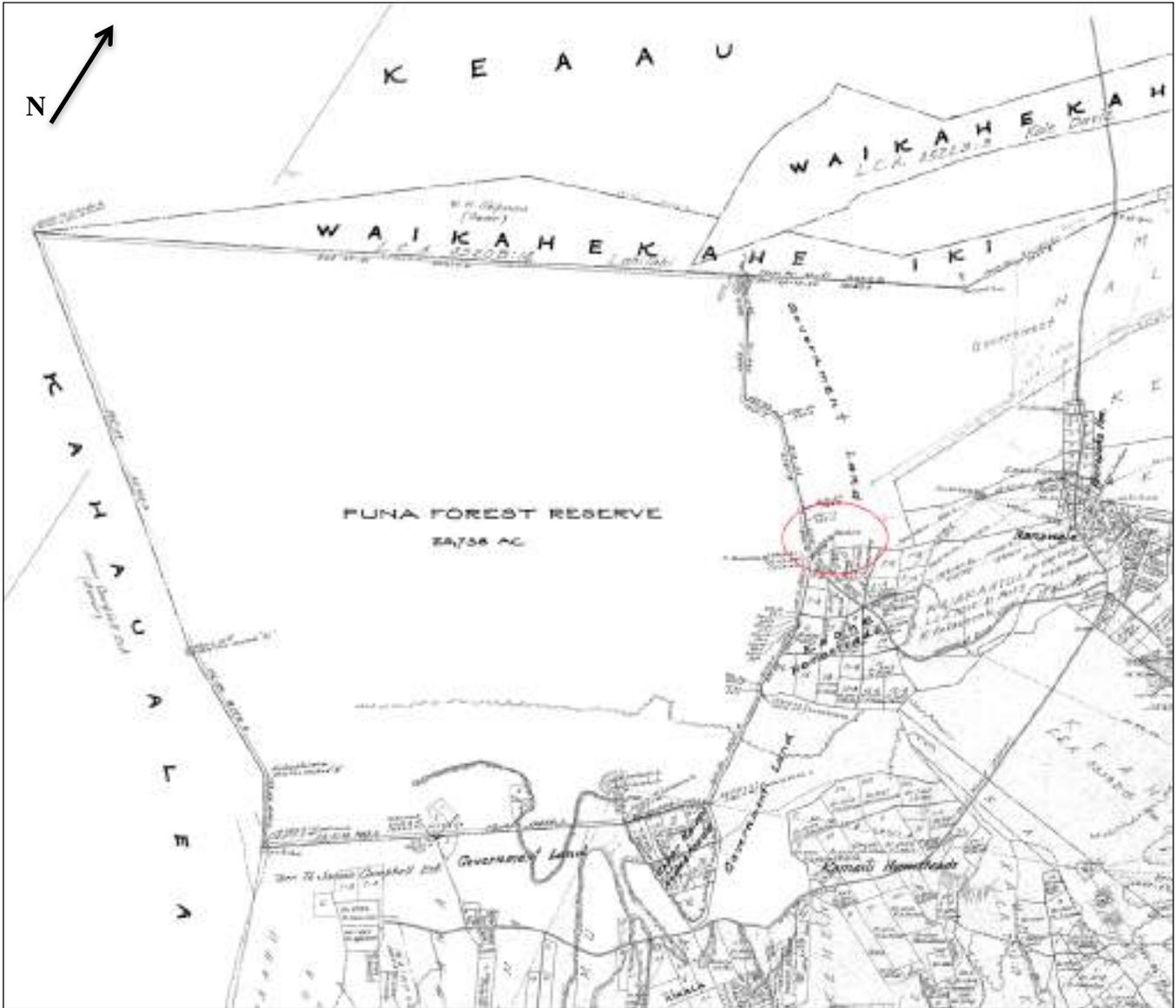


Figure 39. Register Map 2753 showing pasture lands circled in red.

‘Ōla‘a Sugar Company, Ltd. and Puna Sugar Company, Ltd.

On May 3, 1899, B.F. Dillingham, Lorrin A. Thurston, Alfred W. Carter, Samuel M. Damon and W.H. Shipman pooled their resources to start what they believed would become Hawai‘i’s largest and most progressive sugar plantation. The first financial agent to assist funding this plantation was Bishop and Company (Conde and Best 1973:92). The promoter’s original plans were to do “share planting,” which would foster a home owning class of independent farmers who would grow cane for the mill. These independent farmers would either own or lease the land that they cultivated. This was radically different from the traditional plantation system which opposed both independent growers and diversification (Plantation Archives 1992).

The 'Ōla'a Sugar Company mill (Figures 42-44) was located nine miles from Hilo on the road to Volcano (Conde and Best 1973:92). The plantation fields extended approximately ten miles alongside the Volcano road and included four isolated fields located in the Pāhoa, Ka'ōhe, Kapoho and Kamā'ili areas. Following is a description of the sugar plantation town of 'Ōla'a by Oma Duncan who came to Hawai'i in 1898; between 1906-1947 she taught at Pāhoa School and later at 'Ōla'a School. She writes:

Olaa was a typical sugar plantation town, bordering the Volcano Road from Hilo to the Volcano. Nine miles from Hilo in the center of Olaa, the Puna Road ran down to the ocean past the Olaa School through the small villages of Pāhoa, Kapoho, and Kalapana in the Puna district. Along the Puna Road were the houses of the managers, doctor, storekeeper, etc. The houses of the laborers were in various places throughout the plantation and where little settlement of people from the same country. This grouping was according to the preference of the laborers so that they would be with people who spoke the same language and had the same interest. The plantation itself stretched 20 miles Punaward toward the Pacific Ocean and 20 miles up the mountain towards Kilauea Volcano. While this country is in a earth-quake-volcanic section of the Island, there was only one severe earthquake at the school. In 1908 the Olaa School cottage, where the principal lived, sustained much damage in broken dishes and minor things. No heavy earthquakes came while the school was in session, not was there any volcanic outbreak. (Delta Kappa Gamma Society 1981:13)

According to the Plantation Archives:

On May 3, 1899, the Olaa Sugar Company was incorporated. With a \$5,000,000 investment, the promoters purchased 16,000 acres in fee simple land and nearly 7,000 acres in long leasehold from W.H. Shipman. They also purchased 90% of the stock in the adjacent Puna Plantation, adding another 11,000 acres to the holdings. Olaa Sugar Company began as one of Hawaii's largest sugar plantations with much of its acreage covered in trees. (Plantation Archives 1992)

The 'Ōla'a Sugar Company took on the enormous task of constructing the plantation. Prior to sugar dominating the agricultural scene in Puna, coffee was the principal crop. Over 6,000 acres of coffee was owned by some two hundred independent planters and involved six companies. The 'Ōla'a Sugar Company had to make way for their mills and crops. "Ohia forest had to be cleared, field rock piled, land plowed by mules [or] dug up by hand with a pick, quarters for laborers and staff had to be built, the mill constructed, and the first cane planted" (Plantation Archives 1992). The Hilo Railroad Company played a vital role in helping to clear large tracts of land by removing the 'ōhi'a logs. The contract between the Hawaiian Mahogany Lumber Company and the Santa Fe Railway System called for the Hawaiian Mahogany Lumber Co. to supply 500,000 'ōhi'a wood

railroad ties and 2,500 sets of switch ties to the Santa Fe Railway (Division of Forestry 1907 Annual Report 1908:40).

The 'Ōla'a Sugar Company's dream of being the largest and most profitable sugar plantation could be seen in their large scale production and mill. In 1900, the first cane had been planted and a twelve-roller, 2,000 ton mill was built in 'Ōla'a. "The mill was planned for a 60,000-ton crop and was of a size to accommodate future expansion. Everything was planned for large-scale production, unlike most sugar companies, which expanded as the output increased (Plantation Archives 1992)." The Pāhoa based, Puna Sugar Company was established in the late 1890's. The Puna Sugar Company sold and processed their cane at the 'Ōla'a Mill. In 1905, the 'Ōla'a Sugar Company purchased only the plantations from the Puna Sugar Company and not the mill. However, the real transaction was not completed until 1936 when the 'Ōla'a Sugar Company purchased the Puna Sugar Company for \$350,000 at an auction (Conde and Best 1973:99).

Since its inception, successions of experiments shaped this company. The rugged lava terrain, lack of perennial surface streams, isolated pockets of cultivatable soil, crop transportation, crop disease, pests and heavy rains required a great deal of creativity and experimentation from the owners, managers and farmers. The experimentation came with newfound knowledge of sugar cultivation never attempted before in Hawai'i, but at a high operating cost. One of the company's biggest experimental projects was in 1919, when the first bagasse mulching paper mill was constructed in the Territory of Hawai'i. The paper mill was erected along side the sugar mill and was used to maintain heat for the young sugar crops and suppress weed growth. The use of paper mulching to suppress weeds was a huge breakthrough and reduced labor cost for hoeing by nearly 50 percent. The 'Ōla'a Sugar Company became the forerunner in the development and application of paper mulching and subsequent agricultural industries like pineapple continued to use this technique. (Plantation Archives 1992).

The distance between the 'Ōla'a Mill and the Ka'ohe, Pāhoa, Kamā'ili and Kapoho plantations located in lower Puna bought about its own set of challenges including transporting sugar to the mill (Figure 41). The Plantation Archives comments:

The cane was transported to the mill by fluming and by railroad. Although Olaa Sugar Company had 72 miles of flumes, it had no dependable water source for their operation. The railroad was relied upon for delivery of 60% of the cane. In addition to its own standard gauge 35 miles of railway track, the company ran cars over the Consolidated Railway tracks to bring its cane in from more distance fields. The history of the Olaa Sugar Company is closely connected with the southern branches of the Hawaii Consolidated Railway Co. because they were interdependent from the start. The cane fields were in four widely separated areas cut off from each other by stretches of barren lava. The railroad was therefore vital to the plantation, which in turn helped support the railroad. When a tidal wave on April 1, 194[6] destroyed much of the Hawaii Consolidated Railway Company's tracks, it ceased operations. The plantation was then forced to

convert to trucks in order to transport sugar and molasses to the Hilo wharf.

Fortunately, under the management of Wm L.S. Williams, a major road-building program had been started in 1939 for the purpose of eliminating the portable track. He started the plantation on its way to modernization by laying a network of 500 miles of roads for hauling cane. Since 1948, all the cane hauling has been done by truck. (Plantation Archives 1992)

The post-World War II era brought about significant changes to Hawai'i's sugar industry. On September 1, 1946, about twenty-one thousand laborers on thirty-three plantations walked off the job (Daws 1968:363). Laborers pressed for higher wages and improved working conditions. Included in this strike was the 'Ōla'a Sugar Company whose primary tactic to get laborers back to work was creating a sixty-two day lockout. The lockout created a significant negative economic impact on the laborers and subsidiaries and nearly crippled the 'Ōla'a community (Cahill 1996:243).

By the end of 1947, the 'Ōla'a Sugar Company was in debt and owed its agents, American Factors, Ltd. (AMFAC), some \$2,000,000. Compounding this problem, Manager C.E Burns proposed in 1948 that the only way the company was to continue was to reduce cost through mechanized harvesting. Although laborers were slowly released from work, the company continued to provide housing, relocated workers to new jobs, and provided free medical care and recreational facilities (Plantation Archives 1992).

Managr A.J. Watt modernized the housing by building new family units and relocating outlying houses scattered about the plantation into nine main villages. They became miniature towns with running water, electric lights, schools, churches, stores, clubhouses, theaters, parks, and ball fields. The plantation roads radiated from these nine camps to cover the cane areas where the men worked. The 1930 plantation census noted a total of 5,999 men, women and children residing in 1,098 houses at Olaa. (Plantation Archives 1992)

In spite of efforts to reduce operating costs, the 'Ōla'a Sugar Company remained in debt. By the 1950's, the company's debt exceeded \$4.1 million dollars to their minority stockholder, and primary financier, AMFAC. The company began to consider liquidation and reorganization, and in 1959, in the wake of statehood, the company sold some of its fee simple land. "By this time, the plantation had accumulated 35,700 acres of which 22,000 were used by Olaa and the remainder by independent planters" (Plantation Archives 1992).

On March 28, 1960, in an attempt to change the tide of "bad luck" that seemed to plague the company, the name was changed from the 'Ōla'a Sugar Company, Ltd. to Puna Sugar Company, Ltd. (Plantation Archives 1992). The man at the forefront of this name change was Herbert Shipman. Since W.H. Shipman, Ltd. leased much of its lands to the 'Ōla'a

Sugar Company, if the company went under Shipman Ltd. stood to lose a very profitable lease agreement (Cahill 1996:243). At the advice of Herbert's mother, Mary Elizabeth Kahiwaaii Johnson, the name was changed. Mary's advice occurred early on when the lease agreement was initially written up between the 'Ōla'a Sugar Company and W.H Shipman Ltd. in the early 1900's. Mary refused to sign the lease saying that the name 'Ōla'a was sacred and would bring bad luck if used to promote a money-making business. She predicted that the company would never make money, and she was right (Cahill 1996:246). The 'Ōla'a Sugar Company suffered continuous economic setbacks and was out of debt and turned a profit only once in its lifetime.

By 1963, after accruing some money from their land sales, reducing operation and improvement cost, the company seen their first profit gain. By 1966, the company was debt free for the first time in its history. By 1969, AMFAC purchased the entire Puna Sugar Company, Ltd, and launched an expansion program by installing a modern steam generating facility. A \$4.5 million power plant was built in Puna, which used bagasse and trash fuel to generate 15,000 kilowatts of electricity. The Hilo Electric Light Company was contracted to purchase 12,500 kilowatts from the facility. (Plantation Archives 1992)

By the 1980's, the company could no longer depend on government subsidies or tax breaks to fund its operations. The cost to produce sugar at the Puna Sugar Co. was at an all time high. An article published in 1982 in the Honolulu Advertiser comments on the high cost of sugar from the Puna Sugar Co (Figure 40).



Figure 40. Article from the Honolulu Advertiser, January 8, 1982 (Kea'au Library Special Collection).

The market for sugar had shifted and on January 7, 1982, AMFAC announced it would be closing the Puna Sugar Company. Over a two-year period, the company negotiated leases, disposed of its equipment and worked out employee layoffs. In 1988, the entire sugar mill was sold to Fiji Sugar Corporation, Ltd, and Hawaiian Electric Light Company took over operations of the power plant (Plantation Archives 1992).

While the mill and majority of the plantation fields are not within the study area, the Ka'ohē plantation is the closest plantation field to the study area. The Ka'ohē Homestead and the Ka'ohē plantation are located on the eastern boundary of Wao Kele O Puna. An interview conducted with Ms. Rene Siracusa in 2009 by Cultural Surveys Hawai'i speaks of the sugar plantation in the area as well as other forestry related activities. According to Siracusa:

Going up to Ka'ohē Homesteads where I live, it was Royal Patent Grants. They put in the narrow gauge railroad line. Because of the logging. Up in Ka'ohē Homesteads where I live, they logged first for the sandalwood. During Kamehameha the Third's time. First, they logged up the sandalwood, and when once that was gone, then they logged up the 'ohi'a, which was for the Santa Fe railroads. And that didn't work. That was a loss. Then the Japanese who were working on the sugar plantations figured out that if they could grow some of their own sugar, they could get a lot more bang for their labor. And so they started getting parcels up there. As a matter of fact, on my property I still have parts of the old rail line and I have found a lot of old bottles, like Pāhoa Soda Works.

As far as I know, the old sugar cane areas are all taken over by albizia now in my neighborhood. And, there used to be sugar cane growing on the Catholic Church lands which were leased to now-defunct Puna Sugar, but there is not anything cultivated any longer. (Frias 2010:159-160)



Figure 41. Territory of Hawai'i 1901 Survey map showing the areas used for sugar plantations outlined in red.

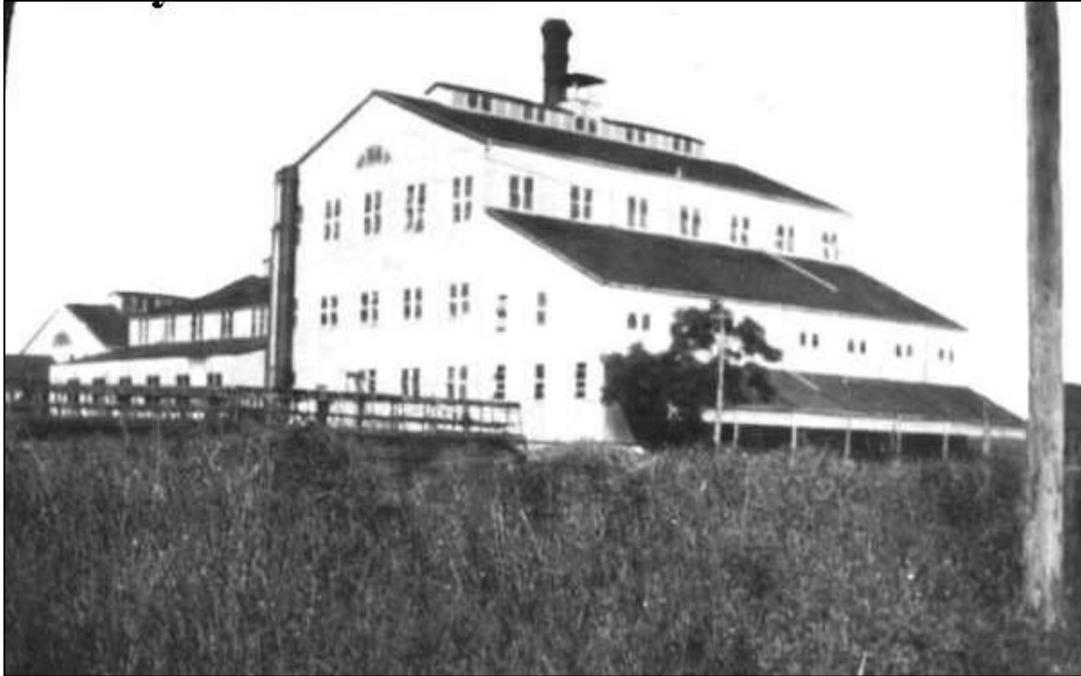


Figure 42. 'Ōla'a Sugar Company Mill in Kea'au, later known as Puna Sugar Co. (Lyman Museum # P77.22.99)



Figure 43. The 'Ōla'a Sugar Company Mill and Paper Mill, ca. post 1920 (Kea'au Public Library Special Collection).



Figure 44: 'Ōla'a Sugar Mill and Paper Mill with man on horse in foreground. ca. 1920's (Kea'au Public Library Special Collection).

Hilo Railroad Company and Hawai'i Consolidated Railway, 1899-1916

In 1875, the Kingdom of Hawai'i, under the reign of King Kalākaua, entered into the Treaty of Reciprocity with the United States. This treaty allowed Hawaiian sugar to enter the United States as a duty free product (Treiber 2005:45). Subsequently, this led to a significant increase in sugar production and exportation to the United States. Following this boom in sugar production, the Hawaiian Kingdom and plantation owners turned their attention to the building of infrastructure that could support the increase in sugar production.

In 1899, the Hilo Railroad Company was established primarily to haul raw sugar from designated mills to the seaport located in Hilo. Benjamin F. Dillingham and Lorrin A. Thurston were two of several original promoters and the primary investors in the Hilo Railroad Company. The Hilo Railroad Company constructed railroads from the town of Hilo to plantations located to the north in the Hāmākua district as well as plantations located to the south of Hilo and the Puna district (Conde and Best 1973:92) (Figures 46-51). The plantations located along the Hilo Railroad Company route were the Waiākea Mill Company located to the south of Hilo town and the 'Ōla'a Sugar Company, Ltd.

(later known as the Puna Sugar Company, Ltd.) that was located approximately nine miles from Hilo on the road to Volcano (Conde and Best 1973:92).

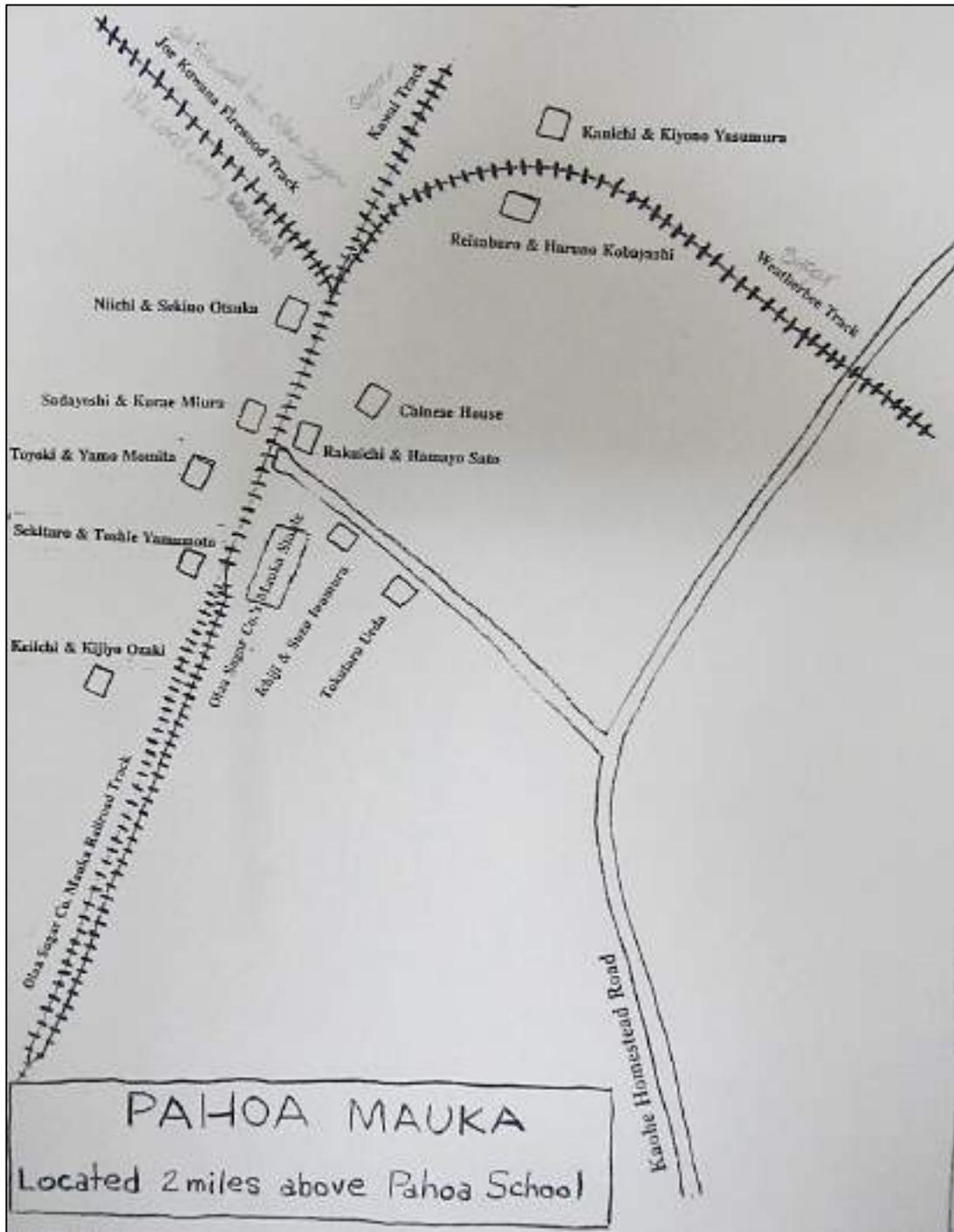


Figure 45. 1920s map of Pahoā showing the different railway tracks and families living in mauka Pahoā (to the east of Puna Forest Reserve). Drawn by Robert Sugimara in 1993, (Lyman Museum)

The original eight miles of tracks were laid in 1900 to connect the 'Ōla'a Sugar Mill with the Waiākea Mill. Prior to the expansion of the Hilo Seaport, the raw sugar was loaded onto barges from the Waiākea Mill, barged down the Wailoa River, loaded onto small boats that transported the sugar to nearby ships anchored in Hilo bay. Once the initial railroad tracks between Hilo and 'Ōla'a were laid, the Hilo Railroad Company added a seventeen miles southeasterly extension to the Kapoho plantation (Treiber 2005:46). From the Kapoho line, two more southwesterly railroad lines were added that fed into Pahoā and Kamā'ili plantations (Figure 45). Shortly after the Pahoā and Kamā'ili extension was complete, the railroad was extended from the Waiākea Mill to the town of Hilo. According to Conde and Best, the Hilo Railroad 1900 Annual Report comments on the development of the railroad system in lower Puna near the project area:

Plantation Railroad. The development of the lower lands will require a rail system for taking cane in connection with the portable track or fluming to the cars. For this purpose approximately 10 miles of permanent track will be necessary. There is no immediate need for the construction, as such a system will not be required to any great extent until sometime in 1902. We have on hand and have paid for 1 locomotive, 10 cars and three miles of portable track, together with the necessary switches, ties etc. (Conde and Best 1973:92)

Around 1901, a seventeen mile rail line was added that extended from the 'Ōla'a Sugar Mill further inland to the town of Mountain View (Conde and Best 1973:92). The track was later extended to the town of Glenwood. Although the Hawai'i Consolidated Railroad in conjunction with the 'Ōla'a Sugar Mill had trackage rights over much of railroads in Puna, passengers were allowed to ride; however they were required to purchase a ticket from the Hawai'i Consolidated Railroad Company. The Glenwood extension was perhaps the more popular passenger train because it transported tourists to the popular Volcano House (Treiber 2005:49).

One account by Sol. N. Sheridan published in 1906 in the English newspaper, *Hawaiian Gazette*, describes traveling in the coach carrier from Hilo through 'Ōla'a and into Pahoā:

I left Hilo through the courtesy of Superintendent Metzger of the Hilo railway in a special train for Puna. Mr. Metzger apologized for the equipment but, as a matter of fact it seemed to leave nothing to be desired. It is true that I am not a judge of special trains. I have ridden in a few and that was the first one I ever had that I could call my own. I was not therefore inclined to be hypercritical. Sure, it seemed to me and still seems to me that an engine and a clean and comfortable coach, speeding over a track cleared for it to run as it pleased, left nothing at all to be desired.

At all events, it suited me. The run down through Olāā and the fields of Puna to Pahoā at the end of the shorter branch of the railway into Puna was made very quickly. The road runs for a long distance, through a country that is not yet far advanced in the formative stage. Much, very

much of the island of Hawaii is like this. The land is so new that the raw edges are still upon it. In Puna, as in all the new parts, lava flow succeeds lava flow, from the mountain to the sea. Some of the flows are old, grown thick with tree fern and lauhala and lehua trees. Some are new, the a-a sticking up its jagged points to the sun and the pahoehoe lying, smooth and shining as satin in fold upon fold. Between the flows are pockets of rich soil, in which sugar cane attains perfection hardly exceeded in the rich and highly cultivated lands of Ewa, Oahu. (Sheridan 1906:2)

In 1908, the Hilo Railroad Company took on the daunting task of constructing an extensive railroad system along the Hāmākua coast (Treiber 2005:50). The Hāmākua coast extension came with very high construction cost, thus forcing the company into foreclosure. In 1916, the Hilo Railroad Company was sold, reorganized, and changed names to Hawai'i Consolidated Railroad (HCR) (Treiber 2005:55). Despite high operating and repair costs, the increased traffic during WWII allowed HCR to regain its financial footing. To reduce operating costs, HCR ended and removed the Glenwood extension in 1932 (Treiber 2005:61). Unfortunately, on April 1, 1946, a devastating tidal wave struck Hilo causing severe damage to the Hilo and Hāmākua rail lines. Repairs to the railroad system were too costly, and HCR was forced to abandon operations and sell its remaining equipment (Treiber 2005:56). However, the Puna railroad remained in operation for a few more years as the 'Ōla'a Sugar Company leased the southern portion of the railroad. By 1948, the 'Ōla'a Sugar Company began to transition from railroad to trucks for hauling the raw cane (Treiber 2005:59).



Figure 46. Railroad tie mill in Pahoehoe. (Lyman Museum # P77.22.57)



Figure 48: (O.S.Co., Ltd.) 'Ōla'a Sugar Company locomotive and railroad workers. Date unknown (Kea'au Public Library Special Collection).



Figure 49: 'Ōla'a Sugar Company Mill with empty rail carts in foreground (Kea'au Public Library Special Collection).



Figure 50. Railroad tracks through Puna (Lyman Museum # P86.6.1.118)

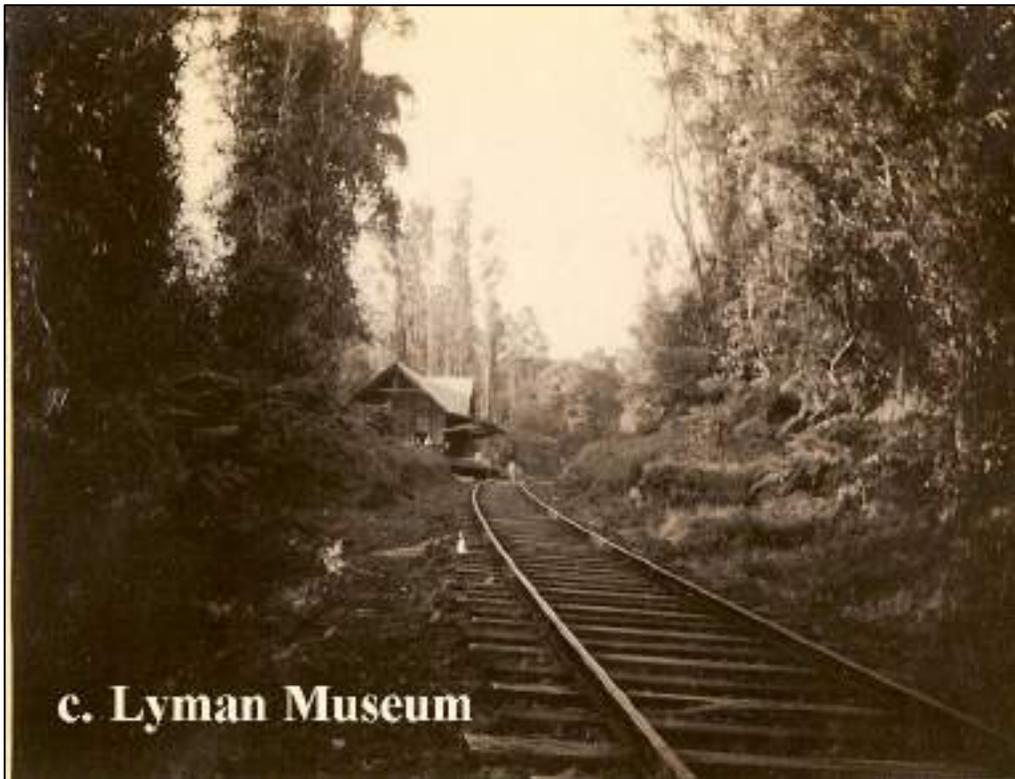


Figure 51. Railroad through Puna Forest (Lyman Museum # P86.6.1.110)

Logging

The logging industry in and around the Wao Kele O Puna vicinity coincided with the development of the 'Ōla'a Sugar Plantation and the railroad system in Puna. The removal of the woody 'ōhi'a tree and other brush was required to make way for new crops of sugarcane as well as the railroad tracks that hauled both sugarcane and passengers. The removal of the 'ōhi'a trees as well as improved access into the more wooded forests areas in Puna gave rise to the logging industry. Because logging was a new economic undertaking by the Territorial Government, the initial start up for these companies was a gradual process. In 1903, under Act 44 of the Territorial Laws, the Board of Agriculture and Forestry, now known as the Division of Forestry and Wildlife, (DOFAW) was formally established. The Board of Agriculture and Forestry played a significant role in allowing access into government lands for logging and other forest related activities. One of the primary purposes of the Board was to protect sources of water supply for both residential and agricultural use. The board recognized two classes of forests in Hawai'i:

... the water bearing forest and the commercial forest-- and that radically different treatment is required to make each one serve its purpose to the best advantage. The policy of the Territorial Government in protecting the more important class-- the water bearing forests-- through the creation of forests reserves, managed as "protection forests"... (Division of Forestry 1908 Annual Report 1909:31)

The justification for logging in Puna was addressed by the Division of Forestry in their 1908 annual report. It states:

The conditions obtaining in the District of Puna, on the Island of Hawaii, are such on general principles as to justify lumbering. There are and can be no running streams. Consequently the question of watershed protection is not a factor. The forests is essentially of the "commercial class." (Division of Forestry 1908 Annual Report 1909:32)

Superintendent of Forestry, Ralph Hosmer, further elaborates on the value of commercial class forests:

... the non-water bearing commercial forests, the main value of which rests in the wood and timber that it yields. Consequently the forest is not needed for water shed protection, but is to be reckoned chiefly of value because it can be made to yield wood and timber. Much of the land in Kona, Puna and Kau can be used to better advantage for growing trees than for any other purpose. Obviously the wise use of this type of forest is so to manage it that it shall yield repeated crops of valuable timber. The object in both cases is to put the forest to wise use; to make it serve the purpose for which it is best adapted. In the one case its most valuable product is water; in the other it is wood. (Planters' Labor and Supply Co. 1908:484)

James B. Castle's, Hawaiian Mahogany Lumber Company and Lorrin A. Thurston's and F.B. McStocker's, Hawaiian Development Company were two prominent companies that secured leases from the Territorial Government for logging in and around the Wao Kele O Puna vicinity.

Hawaiian Mahogany Lumber Company (Pahoa Lumber Mill)

J.B. Castle's Hawaiian Mahogany Lumber Company (also called Pahoa Lumber Mill) began in 1907 (Figures 52-56). By September 1908, the company was operating a lumber mill in Pāhoa. From its founding days, the Hawaiian Mahogany Lumber Co. contracted with the Santa Fe Railway System to supply the railway with 500,000 'ōhi'a wood railroad ties and 2,500 sets of switch ties annually for five years. The Division of Forestry 1907 Annual Report states:

The development of the Hawaiian lumber industry stands out preeminent, through the signing in October 1907 of a contract between the Hawaiian Mahogany Lumber Company and the Santa Fe Railway System to supply during the next five years ninety million feet, board measure, of Ohia Lehua railroad ties; eighty million feet in the form of 500,000 standard ties annually, and ten million feet in 2,500 sets of switch ties.

In September 1907 Mr. E.O. Faulkner, Chief of the Bridge and Tie Timber Department of the Santa Fe Railway came to Hawaii on his way around the world in the interest of his company. The contract was signed after a visit to the forests on the Island of Hawaii. This contract is far reaching in its effect for it introduces our Ohia timber to the mainland market. Once known it cannot in the future every wholly be lost sight of, especially with the growing demand for hardwood timbers of the better sort.

Most of the ties for this contract will be cut in the Puna District on the homestead lots above Olaa, on land of the Puna Plantation that are being cleared for cane, and on other lands in Puna on which rubber will be planted. The ties will be shipped from Hilo by steamers and sailing vessels, the first shipment being some time in the spring of 1908.

Prior to this contract-- in June 1907-- one schooner load of 13,000 Ohia ties was sent to San Francisco. Several good sized orders for Ohia ties and Ohia piling for use in the Territory have also been filled by the Hawaiian Mahogany Lumber Company.

In its work with Koa the Hawaiian Mahogany Lumber Company is progressing slowly. A narrow gauge railroad is being built from Glenwood to the saw-mill in the woods back of the Volcano House, the mill itself has been erected and some of the machinery installed. Some 200 or 300 large Koa trees have been felled, cut into logs and hauled in to the mill yard. The practice of pulling the trees over by cable and donkey engine, instead

of felling them is the usual way with ax and saw, has been proved practicable. This is an important point to have settled, as this method will result in a saving of waste at the butt which when the log is sound, is the most valuable part of the tree. If the program outlined by the Company is carried out a considerable quantity of high grade Koa lumber should soon be on the market. (Division of Forestry 1907 Annual Report 1908:40)

The contract with the Santa Fe Railway System was never fulfilled. The Division of Forestry notes that by 1914, few *'ōhi'a* was being sold for railroad ties after it was realized that the *'ōhi'a* wood ties did not last in the extreme conditions of the southwest (Division of Forestry 1914 Annual Report 1915:55). The Division of Forestry 1910 Annual Report states:

In January 1910, Mr. J.B. Castle's lumber company changed its name to the Pahoa Lumber Mill, secured from the Territorial Government at public auction, the right to lumber the forests on a tract of unleased government forest land in Puna, adjoining the Kaohe Homesteads at Pahoa, and having an approximate area of 12,000 acres.

Under the terms of the contract, which runs for ten years from January, 1910, the lumber company pays to the government a stumpage price of \$5.00 per acre for all forest cut over; subject, however, to the termination of the contract at the option of the government, after the expiration of five years.

The area covered by this contract is, as has been said, 12,000 acres; a block of heretofore practically unexplored forest. A portion at least of this tract is agricultural land, which will in due course be opened up for settlement. The section that is suitable only for forest ought to be set apart as a forest reserve. (Division of Forestry 1910 Annual Report 1911:45)

An annual report by the Puna District Forester, John Watt, provides more details about the areas logged by the Pahoa Lumber Mill during 1909-10:

The only matter of note which has taken place here during the years 1909 and 1910 is the operations being carried out by the Pahoa Lumber Mill at Pahoa. In the past two years they have lumbered something over 1000 acres. This has been partly upon the Catholic Mission lands at Pahoa and Kaohe homesteads and Government land mauka of the Kaohe homesteads. (Division of Forestry 1910 Annual Report 1911:51)

In 1911, the Pahoa Lumber Mill made an advanced payment to the Territorial Government to log on 591 acres of the Puna Forest Reserve. However, by 1914, the Division of Forestry notes that the Pahoa Lumber Mill “has barely reached the section set apart as the Puna Forest Reserve...” (Division of Forestry 1914 Annual Report 1915:54).



Figure 52. Pahoia Lumber Mill yard showing stacked lumber (Lyman Museum # PL86.4.218)



Figure 53. Inside the Pahoia Lumber Mill (Lyman Museum # PL86.4.217)



Figure 54. Pahoia Lumber Mill. Showing logs and saws in position to be cut (Lyman Museum, #PL86.4.214)

Hawaiian Development Company, Ltd.

In January 5, 1910 Lorrin A. Thruston and Frank B. McStocker of the Hawaiian Development Co. Ltd. appeared before Marston Campbell, Commissioner of Public Lands in Honolulu, to secure rights to log a tract of government lands in Puna. According to government records, the Hawaiian Development Company Ltd. was a successor to the Hawaiian Mahogany Lumber Company (Hawaiian Forester and Agriculturalist 1910:30). The following describes the logging area of the Hawai'i Development Company by Ralph S. Hosmer, Superintendent of Forestry:

The area covered by this report is the section of unsurveyed government land lying mauka and to the west of the village of Pahoia in Puna, Hawaii, above the main government road from Oloa, known in general as "Kaohe, Government." More exactly, it is the tract bounded on the east and southeast by the privately owned lands of Waiakahiula (Catholic Mission) and Keahialaka (Bishop Estates) and the open pahoehoe country lying mauka of the Kamaili and the Kaimu Homesteads and the hill known as Heiheiiahuli; as far as the land of Kahaualea (Campbell Estate); on the south by the land of Kahaualea; and on the north and west by the land of Keaau (Mr. W.H. Shipman), altogether an area of approximately 23,850 acres.

The application of the Hawaiian Development Company is for the stumpage rights on some 12,000 acres within this tract that are covered by merchantable forest, together with the right to log the remaining lots in the Kaohe Homesteads that have not been sold and taken up, and which the title still vests in the government, some 500 acres more. (Hawaiian Forester and Agriculturalist 1910:30)

In January 1913, a fire devastated the Pahoia Lumber Company mill, and that same year the mill changed its name to Hawai'i Hardwood Company (Division of Forestry 1914 Annual Report 1915:54). By 1918, the mill discontinued its operation (Conde and Best 1973:101).

In 1985, Tommy Holmes interviewed Jonika Perreira who owned land adjacent to Wao Kele O Puna in the *ahupua'a* of Ka'ohe. According to Holmes:

...when he [Jonika Perreira] first began clearing his land he made numerous forays into the Puna Forest Reserve, hunting and exploring...
...At that time, he noted, there was a fairly extensive network of old railroad spur beds left over from the time when the area was logged for ohia. (Holmes 1985:23)



Figure 56. Pahoia Lumber Mill employees surrounding a large cutting blade and the narrow gauge track to stub switch for incoming log cars. Also called Hawaiian Mahogany Company. New mill built Feb-Mar 1913 after original burned to ground January 1913 (Lyman Museum, # PL86.4.215)

Residential and Agricultural Subdivision Contiguous To Wao Kele O Puna

Following Hawai'i's statehood in 1959, Puna experienced a boom in residential and agricultural subdivisions. The price of land in Puna was cheap and affordable. Although many of these subdivisions lacked (and some continue to lack) infrastructure, numerous land purchases were made then and continue to be made today. The subdivisions listed below along with many others contributed to the significant growth in population and infrastructure in Puna. All of the subdivisions below share at least one boundary point with Wao Kele O Puna (Figures 57-59).

Boundary	Subdivision	Year Established
Northern Boundary	Eden Rock Estates	1960
	Fern Acres	1958
	Fern Forest Estates	1958
	Kopua Farmlots	1970's
	Hawaiian Acres	1958

Boundary	Subdivision	Year Established
Southern Boundary	Upper Kaimu Homestead	Prior to the 1900's
Eastern Boundary	Kaohe Homestead	Prior to the 1900's
Western Boundary	Kahauale'a Natural Area Reserve. No residential or agricultural subdivisions	1987

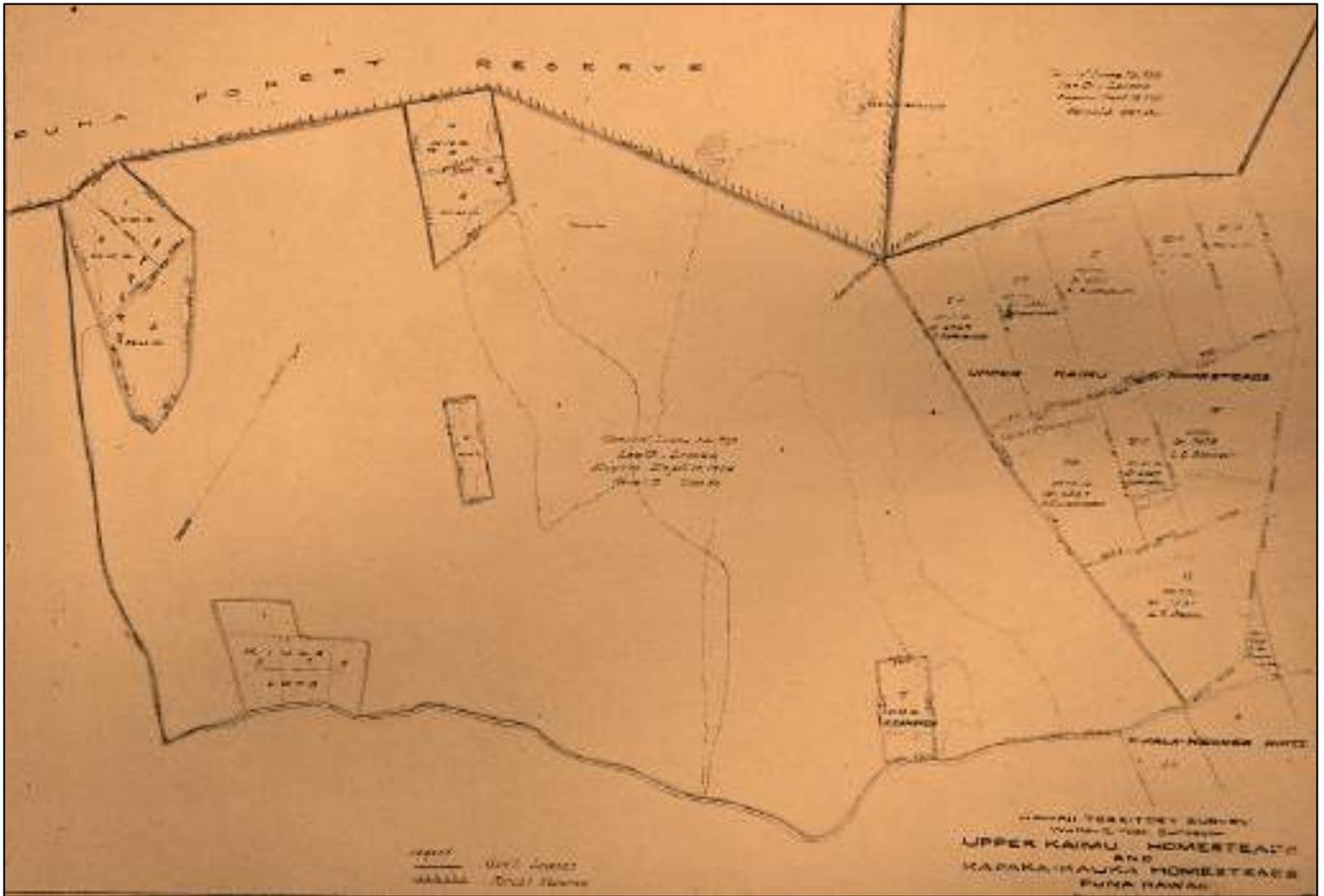


Figure 57. 1916 map of Kapaka, Kauka, and Upper Kaimu homesteads located to the southeast of the Puna Forest Reserve (Lyman Museum)

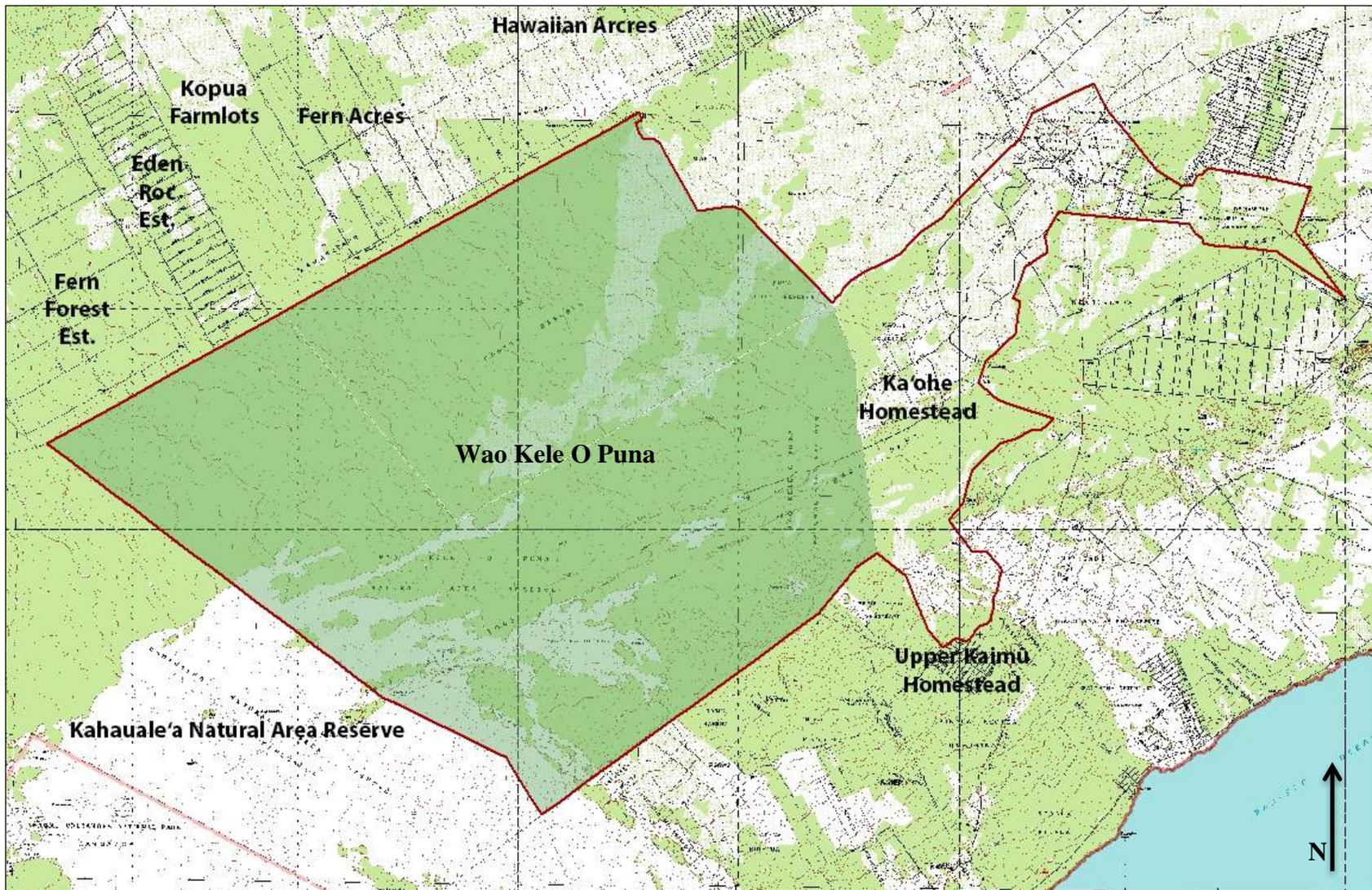


Figure 58. Adapted USGS map showing subdivisions adjacent to Wao Kele O Puna.

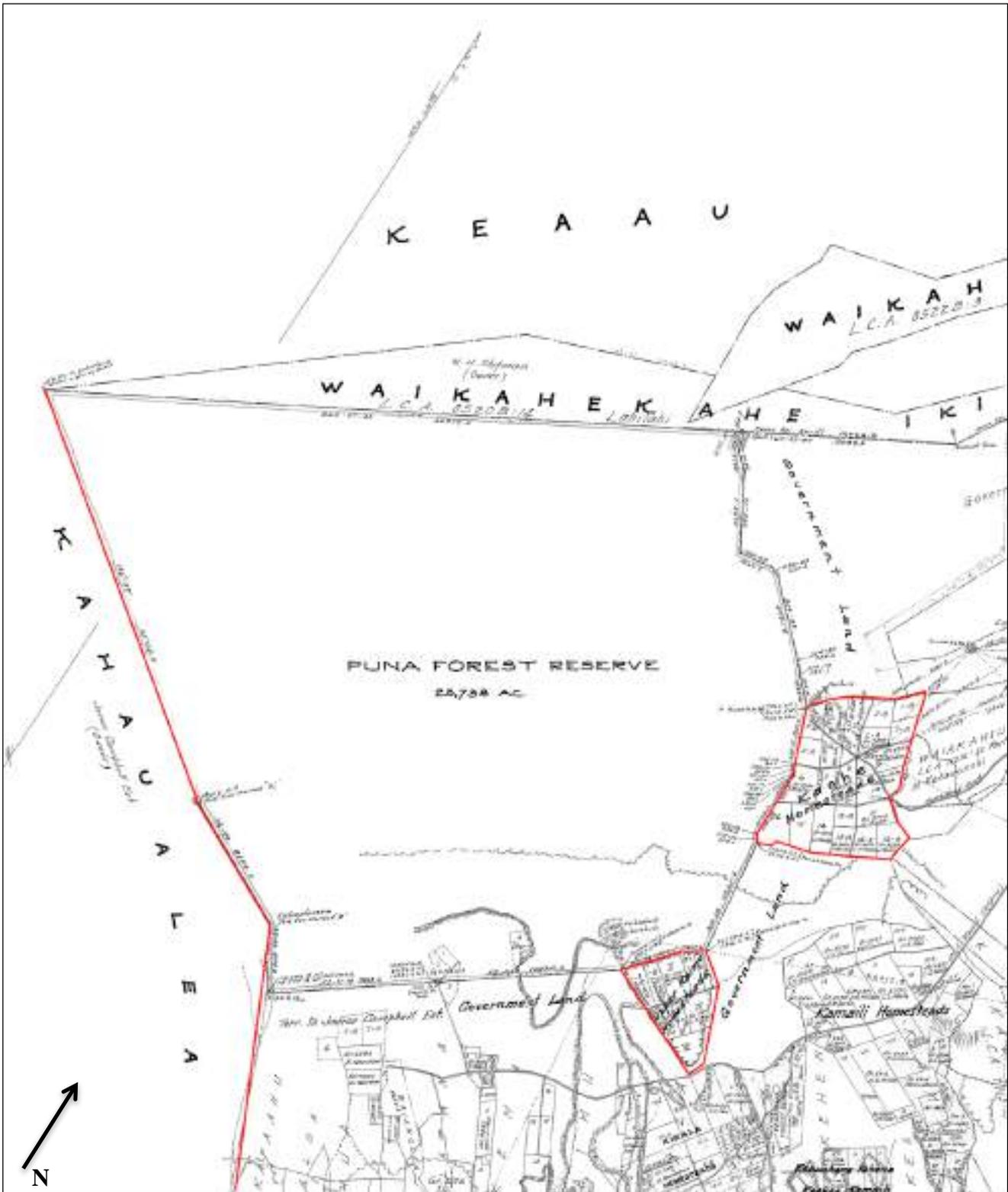


Figure 59. Register Map 2853 ca.1927 showing Upper Kaimu Homestead located on the southern boundary, and Ka'ohē Homestead located on the eastern boundary and Kahauale'a on the western boundary outlined in red.

Establishment Of The Puna Forest Reserve, 1911

The history of forestry in Hawai'i dates back to the early Hawaiian Monarchy era when Kamehameha III (Kamehameha III) declared in April 27, 1846, "The forests and timber growing therein shall be considered government property, and under the special care of the Minister of the Interior..." In 1881, King Kalākaua embarked on his world tour that included sending back many seeds and cuttings giving impetus to reforestation efforts. On January 4, 1893, the Kingdom's legislature established a Commission of Agriculture and Forestry. All of these events demonstrated a growing awareness of the importance of protecting and preserving Hawai'i's forests. Large agricultural developments, particularly sugar, uncontrolled livestock, and introduced species and diseases, decimated large tracts of native forests. The early foresters recognized that preserving the upland forests would provide necessary water requirements to sustain growing agricultural and residential demands.

In 1903, the Territorial Government passed Act 44 establishing the Board of Agriculture and Forestry, defining its purpose, authority, duties, and authorizing necessary staffing. The Division of Forestry, under the Territorial Government, employed three superintendents between 1903-1955 (LeBarron 1970:1).

Ralph S. Hosmer	1903-1914
Charles S. Judd	1914-1939
William Crosby	1939-1955

Ralph S. Hosmer, born in Deerfield, Massachusetts in 1874 (Harding 1957:2), was selected superintendent of forestry at the recommendation of Gifford Pinchot, Chief of the U.S. Forest Service (LeBarron 1970:1). On June 8, 1911, Hosmer recommended to the Board of Commissioners of Agriculture and Forestry to create the Puna Forest Reserve. The following is Hosmer's recommendation letter:

PUNA FOREST RESERVE

Honolulu, June 8, 1911

The Board of Commissioners of Agriculture and Forestry
Honolulu, T.H.

Gentlemen:-- I have the honor to recommend the creation of a forest reserve in the District of Puna, Island and County of Hawaii, to be known as the Puna Forest Reserve, covering a tract of 19,850 acres of government land.

The area in question in the tract of government land known generally as Kaohe, lying mauka of the homesteads near Pahoā, on a portion of which the Hawaiian Development Company is now conducting logging operations under a license from the Territorial Government, granted in January 1910.

During the past year the area supposed to be most fit for agriculture, that is, the section nearest the existing Kaohe Homesteads above Pahoā, has been logged. As

the land further mauka is not deemed as suitable for agricultural use, the Governor is now willing to waive his objections and to set apart the portion of the tract that still remains uncut, as a forest reserve.

To this end a new description has been prepared by the Survey Office, eliminating the area of prospective agricultural land. The area originally proposed to be reserved was 23,850 acres; the area now recommended is 19,850 acres.

The proposed Puna Forest consist of a but little explored tract covered by a more of less heavy stand of Ohia Lehua forests, interspersed with open lava fields, and areas of scrub growth. The logging operations of the Hawaiian Development Company are gradually opening up the section, but as yet much of it remains inaccessible. The value of this forest is primarily because the wood and timber from it is of commercial importance and can be sold. As pointed out by me in earlier reports, especially in a report dated June 1, 1910, that was published in the Hawaiian Forester and Agriculturalist for January, 1910, Vol. VII, NO. 1, pp. 29-35, the Puna forests is now at a point of growth where it is ready to be cut. All things considered I believe it was good policy to grant the logging license now in force.

If this land is now set apart as a forest reserve it will bring the supervision of the logging under the Board of Agriculture and Forestry, and further will make it possible for the Board to received the money paid for the timber cut, for as soon as the land is set a part as a forests reserve, all revenues from the forests products sold therefrom come to the Board, under the law, as a special fund to be used for forests work.

Believing that the forest lands of the Territory should be handled by the Board of Agriculture and Forestry and for the special reasons outlined above, I recommend that the Board approve the setting apart of this area as a forest reserve, and that a formal request be made to the Governor that he proceed with the necessary steps so to set it apart.

Very respectfully,

Ralph S. Hosmer

Superintendent of Forestry (The Hawaiian Forester and Agriculturalist, Vol. VIII, June 1911, No. 6: 184-185)

Following Hosmer's recommendation, the Governor of the Territory, Walter F. Frear, and the Board of Commissioners of Agriculture and Forestry held a public hearing on June 28, 1911. On June 29, Gov. Frear signed a proclamation setting apart 19,850 acres of government forestlands in the Puna district as a forest reserve. The following is Gov. Frear's proclamation and boundaries for the designation of the Puna Forest Reserve.

PROCLAMATION OF THE FOREST RESERVE IN THE DISTRICT OF
PUNA, ISLAND AND COUNTY OF HAWAII

Under and by virtue of the authority vested in me by the provisions of Chapter 28 of the Revised Laws of Hawaii, as amended by Act 65 of the Session Laws of 1905, and by Act 4 of the Session Laws of 1907, and of every other power me hereunto enabling. I, WALTER F. FREAR, Governor of Hawaii, with the approval of a majority of the Board of Commissioners of Agriculture and Forestry, having held the hearing of which notice has been duly given as in said acts provided, do hereby SET APART as a Forest Reserve to be called the "PUNA FOREST RESERVE," those certain pieces of government land in the District of Puna, Island of Hawaii, which may be described roughly as being a section of forest lying mauka of the Kaohe Homesteads above Pahoa, and containing an area of 19,850 acres, more or less, in the District of Puna, Island and County of Hawaii, Territory of Hawaii, more particular described by and on a map made in June 1911, by the Government Survey Department of the Territory of Hawaii, which said map is now on file in the said Survey Department marked Government Survey Registered Map No. 2060 and Puna Forest Reserve, and a description accompanying the same numbered C.S.F. 2248, which said description now on file in the said Survey Department, is as follows:

PUNA FOREST RESERVE

Including portions of the Government lands of Makuu-Kaohe, Kaimu-Kehena and Kapaahu-Kamaili, Puna District, Island of Hawaii.

Beginning at a † marked on the lava tube under a mound of stones at North edge of the ancient cultivated grounds of Oliolimanienie, this point being the extreme West or mauka angle of Waikahekahenui as also of Waikahekaheiki, the common boundary point of these two lands with Makuu, the coordinates of said † referred to Government Survey Trig. Station "Olaa" being 37,071.0 feet South and 9,831.0 feet East, as shown on Government Survey Registered Map No. 2060, and running by true azimuths:

1. 332° 36' 30770.0feet across the Makuu-Kaohe Government Tract to the West corner of Lot 1 of the Kaimu Homesteads (Thrum's Subdivision), from which point Government Survey Trig. Station "Heiheiahulu" (old) is by true azimuths 138° 02' 30";
2. 81° 00' 5710.0 feet along Kaimu Government remainder to the North corner of Lot 4 of the Kapaka-Kauka Homesteads;
3. 47° 35' 1177.0 feet along said lot to the West corner of said lot;
4. 47° 10' 3830.0 feet along Kaimu Government remainder to the North corner of Lot 1 of the Kapaka-Kauka Homesteads;
5. 23° 22' 950.0 feet along Lots 1 and 2 of the Kapaka-Kauka Homesteads to the West corner of said Lot 2;
6. 44° 30' 9440.0 feet along Kalapana-Kapaahu Government remainder to a point on the boundary of the land of Kahaualea;
7. 148° 00' 4100.0 feet along land of Kahaualea to a place called Kalaeolomea and Oahia marked "Z";

8. 116° 00' 8150.0 feet along land of Kahaualea to an ohia tree on top of a sharp hill about 50 feet high the North side of which is perpendicular; marked "K" which bears 216° 00' about 1300.0 feet from Kalalua Hill;
 9. 125° 00' 24200.0 feet along land of Kahaualea to the boundary of the land of Keaau;
 10. Thence along the land of Keaau to the point of beginning, the approximate azimuth and distance being 239° 50' 36400.0 feet;
- Area 19,850 Acres.

In Witness whereof, I have hereunto set my hand and caused the Great Seal of the Territory of Hawaii to be affixed.

Done at the Capitol in Honolulu this 29th day of June, A.D. 1911.

W.F. FREAR,
Governor of Hawaii
(The Hawaiian Forester and Agriculturalist Vol. VIII, July 1911, No.7: 223-225)

On November 26, 1928, Charles S. Judd recommended to the Board of Commissioners that the Puna Forest Reserve be expanded by some 5,888 acres on adjacent unused government lands in the Kapuka-Kauka homestead (spelled Kapaka on Register Map 2753), located on the south boundary of the Puna Forest Reserve (Figure 60). The 5,888 acres were designated farm lots of the Kapuka-Kauka homestead; however, the parcel consisted of very rough terrain and was never farmed. Judd proposed before the board to adding this uncultivated acreage to the Puna Forest Reserve. On December 22, 1928, the Board of Commissioners and the Governor acted on Judd's request and effectively expanded the Puna Forest Reserve to 25,738 acres. Although the boundaries for the Puna Forest Reserve were established on paper, it was not until 1950 when Superintendent of Forestry, William Crosby, requested that the ground boundaries be reestablished to account for the newly added 5,888 acres (Holmes 1985:4).

RECENT HISTORY OF WAO KELE O PUNA

Establishment Of The Wao Kele O Puna Natural Area Reserve

In the 1970 Hawai'i Legislative session, the Natural Area Reserve System (NARS) was officially established. The state outlined its findings and justification for establishing NARS, and the State outlined four main purposes for NARS. According to the Hawai'i Revised Statutes §195-1,

The legislature finds and declares that (1) the State of Hawaii possesses unique natural resources, such as geological and volcanological features and distinctive marine and terrestrial plants and animals, many of which occur nowhere else in the world, that are highly vulnerable to loss by the growth of population and technology; (2) these unique natural assets should be protected and preserved, both for the enjoyment of future generations, and to provide base lines against which changes which are being made in the environments of Hawaii can be measured; (3) in order to accomplish these purposes the present system of preserves, sanctuaries and refuges must be strengthened, and additional areas of land and shoreline suitable for preservation should be set aside and administered solely and specifically for the aforesaid purposes; and (4) that a statewide natural area reserves system should be established to preserve in perpetuity specific land and water areas which support communities, as relatively unmodified as possible, of the natural flora and fauna, as well as geological sites, of Hawai'i.

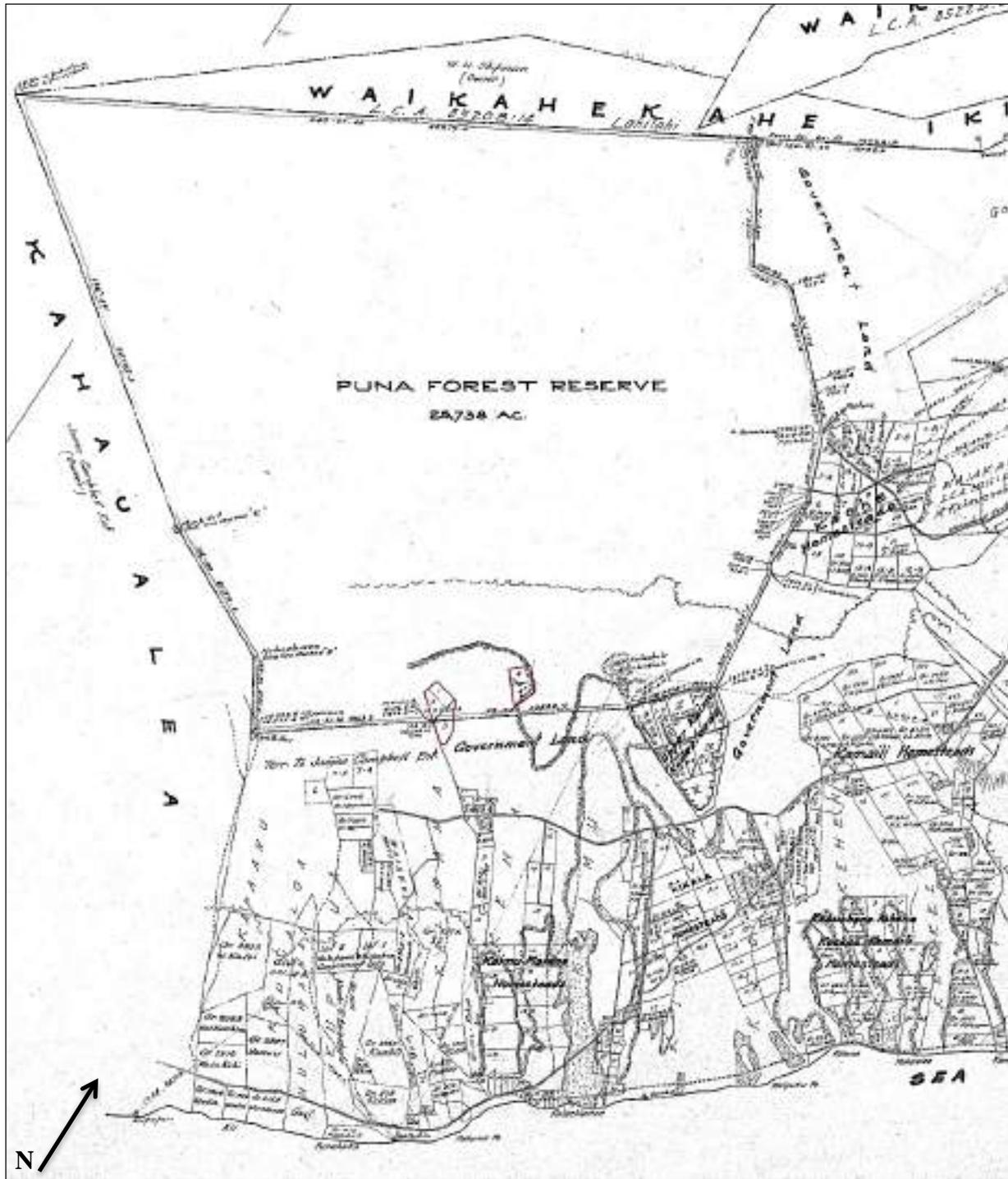


Figure 60. Register Map 2753 ca.1927 showing the Puna Forest Reserve and the Kapuka & Kauka homestead lots.

On November 9, 1978, the State of Hawai'i, Board of Land and Natural Resources, approved designating 16,847 acres of the Puna Forest Reserve lands for inclusion within the State's Natural Area Reserve System (Figure 61). On November 2, 1981 Hawai'i State Governor, George

Ariyoshi, signed an Executive Order officially designating the 16,847 acres as the Wao Kele O Puna Natural Area Reserve (Holmes 1985:4-5).

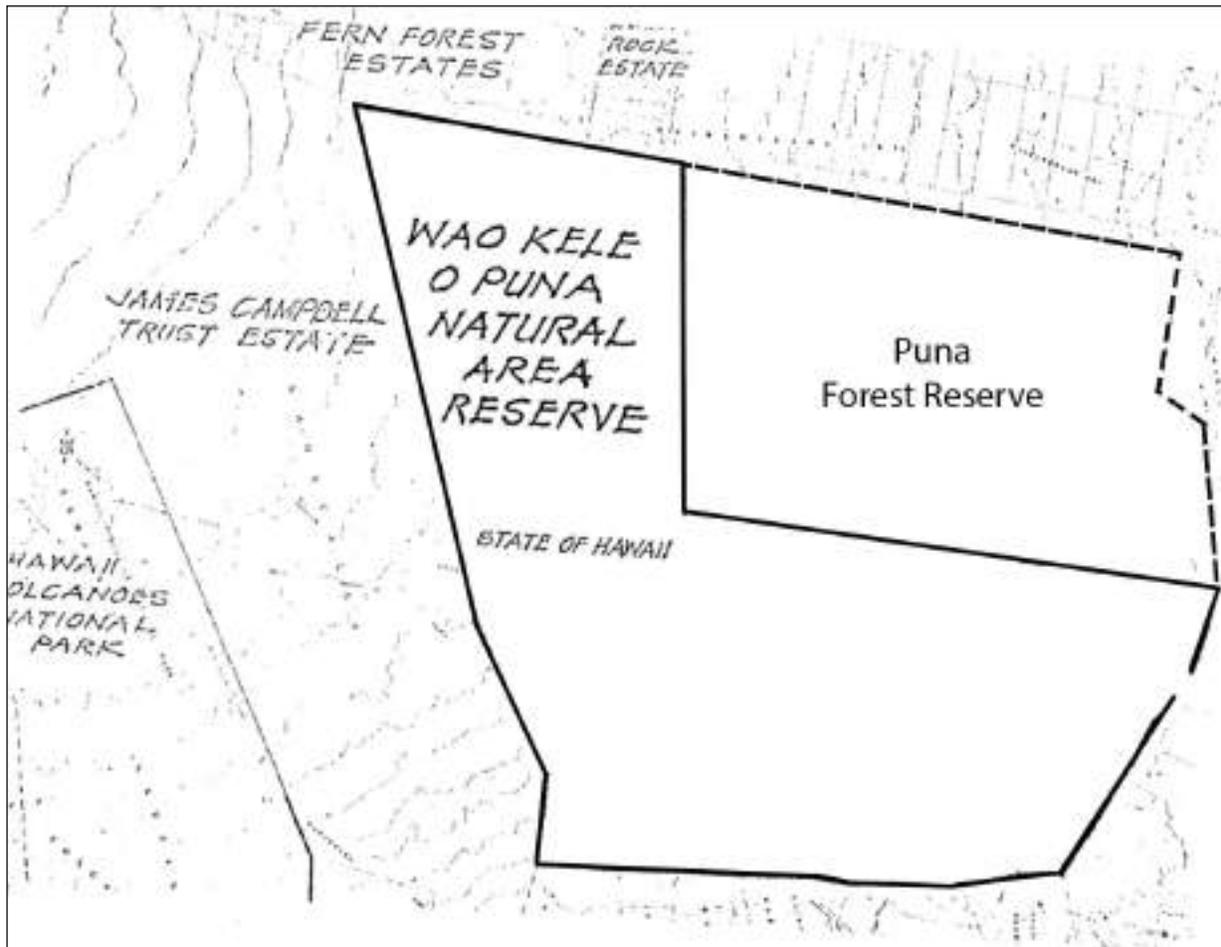


Figure 61. 1981 map showing NARS recommendation to State Planning Office for the designation of WKOP. Approximately 16,719 acres (Adapted from NARS to show boundaries of the Puna Forest Reserve).

Geothermal Development

The following section discusses geothermal development occurring at Wao Kele O Puna from 1984-1994. The section focuses primarily on how geothermal first began in Hawai'i and why geothermal activities were eventually conducted at Wao Kele O Puna. This decade, marked by controversial geothermal development, was perhaps the most tumultuous and turbulent era for Wao Kele O Puna. Needless to say, there are countless perspectives and views regarding the influx of geothermal activity within this region, and all must be acknowledged to fully understand the impact of this developing during this divisive decade. It's a daunting task to provide a complete and detailed history of geothermal development in Hawai'i, and to date there has been no comprehensive study or structured research regarding geothermal activities in Hawai'i or more specifically Puna.

Information, data, and materials regarding geothermal development remain fragmented and scattered in unpublished and published manuscripts and documents written by various individuals over a period of some five decades. Someday perhaps a comprehensive and focused research endeavor can be undertaken to study and document a full history and detailed accounting of this geothermal development. Unfortunately, such an undertaking is beyond the scope and resources of this study. Consequently, our attempts to provide some understanding of the history and development of geothermal activity are limited and may contain inadvertent errors or inaccuracies. It is, however, our best attempt based on acknowledged limited and fragmented original materials, documents, and sources.

Discussions of tapping Hawai'i's volcanic resource to produce electricity go as far back as the era of King Kalākaua. In 1881, King Kalākaua and several of his closest advisors traveled to New York to meet with Thomas Edison who was promoting his recently developed incandescent light. King Kalākaua was interested in replacing the kerosene lamps being used at 'Iolani Palace with electric lamps. It was King Kalākaua's attorney general, William Armstrong, who offered the idea of utilizing volcanic energy to produce electricity that would be transported between the islands via submarine cables. The article detailing the events of that trip was published in the New York Sun, September 26, 1881 (Figure 62).

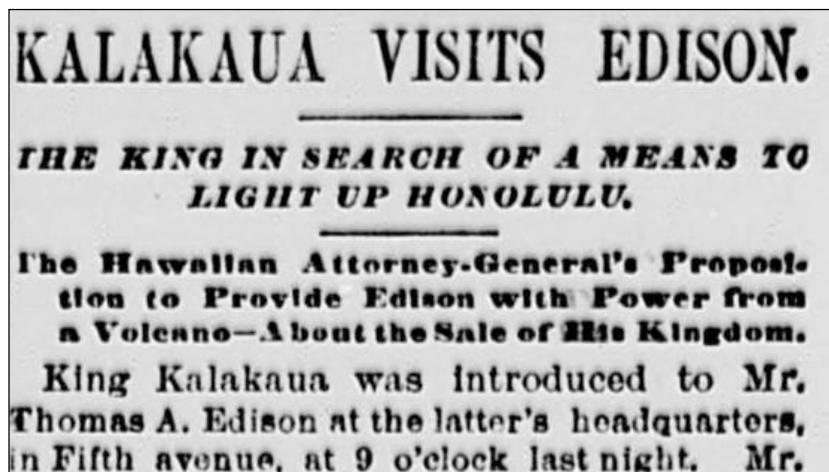


Figure 62. Article from the New York Sun, September 26, 1881.

The idea of geothermal energy was in full swing by the 1970's and 80's. In 1978, the Hawai'i Geothermal Resources Assessment Program (HGRAP) was formed and tasked with identifying Potential Geothermal Resource Areas (PGRAs). Using available geological, geochemical and geophysical data, the HGRAP identified twenty PGRAs, seven of which were located on Hawai'i Island, six on Maui and O'ahu, and one on Kaua'i (Figure 63). After identifying the PGRAs, HGRAP conducted the second phase of their assessment. Field studies were conducted using a variety of geothermal exploration techniques in an effort to confirm and characterize the presence of thermal activities on the previously identified PGRAs. From this assessment, fifteen PGRAs were subject to at least preliminary field analysis, while the other five were considered to have insufficient geothermal resource potential (Boyd et al. 2002:11).

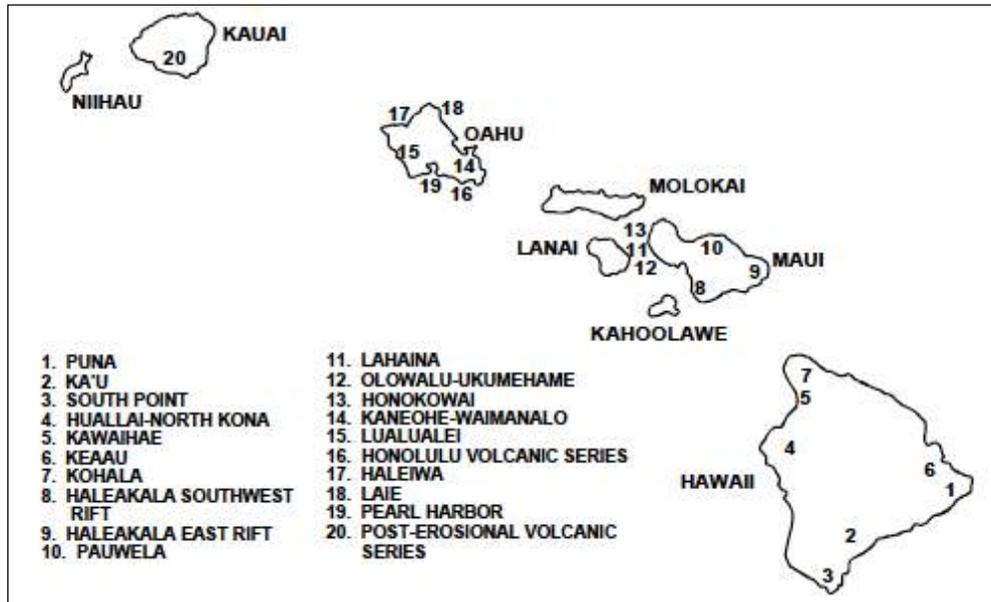


Figure 63. Map of Hawai'i showing the location of 20 Potential Geothermal Resource Areas (Boyd et al. 2002).

On Hawai'i Island, one of the seven identified PGRAs was the Kīlauea East Rift Zone (Figure 64). Upon the discovery of a productive geothermal well, the Kīlauea East Rift Zone was later designated as a Known Geothermal Resource Area (KGRA) with a 100% probability rate of geothermal resource (Boyd et al. 2002:12). The paradox of this story is that geothermal drilling began in Puna in the early 1970s, several years prior to the completion of this study. One of the first major geothermal operations took place in the Kapoho area with the HPG-A well. By 1982, an experimental 3-megawatt power plant was in operation (Boyd et al. 2002:13). The HPG-A power plant was originally designed as a two-year demonstration project; however, it lasted for nearly eight years before it was shut down in 1989 by order of Governor John Waihee and County of Hawai'i Planning Director Duane Kanuha (Boyd et al. 2002:15). Many community members expressed serious concerns over various issues relating to geothermal exploration in Puna including impacts on Hawaiian cultural and religious values, potential hazards, public health and loss of native rainforest, and changing the nature of the Puna community (Boyd et al. 2002:17) (Figures 65-66).

In 1982, large-scale geothermal development was occurring at Kahauale'a; another site along the Kīlauea East Rift Zone. The owners, Campbell Estate, teamed up with True Geothermal Venture Company and proposed building a 250-megawatt geothermal power plant on conservation district lands at Kahauale'a. The energy produced from this power plant was to be sent to O'ahu via an undersea electrical transmission cable. Campbell Estate conducted an Environmental Impact Statement (EIS) and applied to the Department of Land and Natural Resources for a Conservation District Use Permit (CDUP) to proceed with drilling and construction of the power plant. This project was met with community opposition and a contested case hearing was held in 1982. A primary concern of the community was the inappropriateness of geothermal development on conservation district lands.



Figure 64. Puna district showing the three Geothermal Resource Subzone Area. The Wao Kele O Puna study is outlined in red (Adapted from Hammatt & Borthwick 1988).



Figure 65. Drill site (D. McGregor personal files).

To circumvent these concerns, Hawai'i State Legislature passed Act 296 on June 14 1983 allowing the Board of Natural Resources (BLNR) to designate Geothermal Resource Subzones (GRSZ) throughout the state regardless of existing land use classification (see Act 187-61). In essence, Act 296 allowed geothermal drilling to take place on conservation district lands; lands that are supposed to receive the highest levels of protection by the State. In response to the 1983 legislative decision, a second contested case hearing and public informational meetings were held throughout 1984-85 on the geothermal resource subzone designation. One of the arguments included in the 1984-85 discussions was that geothermal operations at Kahauale'a would have an adverse effect on the environment, more so than if geothermal drilling were to take place on the Kīlauea East Rift Zone, downhill of Kahauale'a at Wao Kele O Puna. Kahauale'a had also recently been inundated by recent lava flows making it a less attractive place to build and invest in a geothermal power plant (Dawson 2005:4).



Figure 66. Bulldozing the rainforest to make way for the geothermal drill sites (D. McGregor personal files)

In 1985, in an effort to resolve the issues that developed at Kahauale'a, BLNR and the State Legislature approved the exchange of Campbell Estate's Kahauale'a land for the State's Wao Kele O Puna Natural Area Reserve. On December 20 1985, BLNR issued its decision and ordered 9,014 acres of Wao Kele O Puna Natural Area Reserve to be used as a Geothermal Resource Subzone, making way for the continuation of geothermal development on the Kīlauea East Rift Zone (Dawson 2005:4; Chronology of Events 1994:5). This decision gave rise to a third contested case hearing, which included the Pele Defense Fund (PDF), a grassroots organization "dedicated to the preservation and the perpetuation of Native Hawaiian traditional rights, customs and practices and to the protection of our unique island environment for all of Hawai'i to enjoy now and in the future (<http://peledefensefund.org>).” PDF argued that “drilling into Kīlauea was a desecration of Pele, who herself *is* the heat, the lava, and the steam that emanate from the volcano” (Dawson 2005:4-5). PDF was also concerned that Campbell Estate, as a private owner of Wao Kele O Puna, would block access and prevent Native Hawaiian practitioners from entering the area to continue their traditional gathering rights. In 1987, Gov.

John Waihe'e removed Wao Kele O Puna from the NARS by way of Executive Order #3359. The Executive Order allowed for the exploration and development of geothermal energy in Wao Kele O Puna since it was no longer under the jurisdiction of the NARS. Between 1986-1989, despite fervent opposition from the community and legal action from various organizations such as PDF, the State of Hawai'i DLNR entered into a 65-year mining lease with Campbell Estate's tenants, True Geothermal Venture, and approved drilling a well and constructing the necessary infrastructure for the power plant (Dawson 2005:5).



Figure 67. Protesting geothermal development in WKOP (D. McGregor personal files).

In March of 1990, the state's largest anti-geothermal demonstration was held at the geothermal site in Wao Kele O Puna. More than one thousand supporters showed up in support of PDF and the Big Island Rainforest Action Group. Police arrested 141 demonstrators at the site (Dawson 2005:5; Chronology of Events 1994:9) (Figure 65). Despite continuous support from the state of Hawai'i, True Geothermal Venture was never able to successfully carry out their plans for a geothermal plant in Wao Kele O Puna, and in 1994, the project was abandoned. Although geothermal plans were dropped, PDF continued to work adamantly throughout the 1990's and 2000's in the courts to protect access and gathering rights at Wao Kele O Puna since the land was still under the private ownership of Campbell Estate (Figure 66). In August 2002, after a long awaited decision, the courts reaffirmed Native Hawaiian rights by preventing Campbell Estate and any future owners from excluding any Native Hawaiian (descendants from inhabitants of the islands before 1778) wishing to perform traditional subsistence and cultural practices on the undeveloped portions of Wao Kele O Puna (Dawson 2005:5).

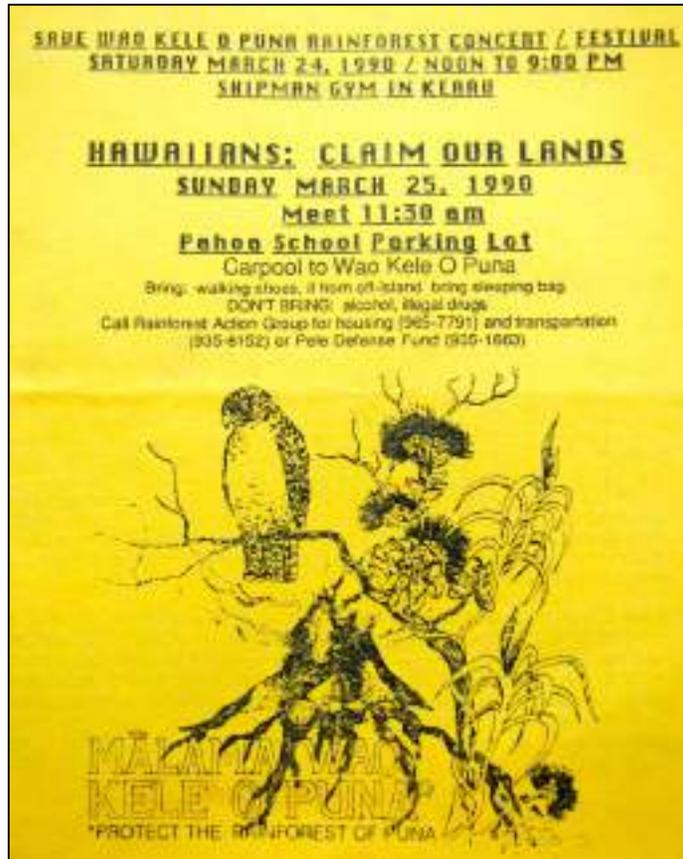


Figure 68. 1990 flyer produced by PDF, calling for action to protect WKOP from geothermal development (D. McGregor personal files).

A Brief Overview of the Acquisition of Wao Kele O Puna

In early 2002, Campbell Estate announced their intentions to sell Wao Kele O Puna. Campbell Estate by its own terms was set to dissolve by the end of 2007. This announcement sent PDF members scrambling to secure support and financial backing from particular entities, one of them being the Trust for Public Lands (TPL) (Dawson 2005:5). TPL is a California nonprofit founded in 1972 with the mission to “conserve land for people to enjoy as parks, gardens, and other natural places, ensuring livable communities for generations to come (<http://www.tpl.org/about/mission/>).” Members of PDF met with TPL representatives to discuss how Wao Kele O Puna could be returned to the people of Hawai‘i. Dawson writes:

TPL’s Stanbro says, “Because we had this gem of a property, such a rare piece of forests... we took a second look at the Assessment of Need,” a document prepared by the state that identifies various areas potentially eligible for federal Forest Legacy Program Funds.

The Forest Legacy Program, managed by the U.S. Department of Agriculture Forest Service, was set up to protect forests by providing federal funds to help purchase conservation easements over or title to important lands. (Dawson 2005:5)

With the outdated Assessment of Need (AON) document, Wao Kele O Puna was not eligible for funds from the Forest Legacy Program even though according to Stanbro, “it was the best fit (Dawson 2005:5).” The state of Hawai‘i’s forest stewardship committee under DLNR decided to revise the AON for the entire state, which included adding Wao Kele O Puna to the AON, thus making it eligible for the Forest Legacy Funds. Written into the revised AON was the “State Option,” which means that the title to all future acquisitions with Forest Legacy funds will remain with the state. The team worked for more than two years and the Forest Service accepted the newly revised AON in November 2004. Wao Kele O Puna was one of three locations on Hawai‘i Island that was accepted by the Forest Service to receive funding.

In early 2005, TPL and Campbell Estate agreed on a purchase price for Wao Kele O Puna in the amount of \$3.65 million (Dawson 2005:5). This price, however, was more than \$250,000 over what was requested in Forest Legacy Funds by DLNR. DLNR requested the maximum amount of \$3.4 million from the Forest Legacy; however, Campbell Estate refused to sell the property for the \$3.4 million amount. In August 2005, Congress released the national budget which included the \$3.4 million requested by DLNR for the acquisition of Wao Kele O Puna. DLNR still needed to secure \$250,000 to complete the purchase of Wao Kele O Puna from TPL (Dawson 2005:6).

In September 2005, the Office of Hawaiian Affairs (OHA), a state entity, approached DLNR offering to provide the \$250,000 needed to complete the purchase of Wao Kele O Puna (from TPL and Campbell Estate that was set to dissolve by 2007). Before OHA turned over the \$250,000 to DLNR, OHA expressed interest in adding ownership and management of Wao Kele O Puna to its mission. Although OHA receives 20 percent of its funding from revenue generated from ceded lands, OHA has never managed or owned property. Since OHA’s main mission is focused on benefiting Native Hawaiians, discussions ensued to ensure that OHA would not restrict general public access. The involvement of PDF in this transaction also made access a particularly controversial topic. In the end, OHA, TPL, DLNR and the Forest Legacy finally agreed that access to Wao Kele O Puna would not be restricted (Dawson 2005:6).

Collaboration among the various involved entities was the first of its kind in the state. Each entity, within its own special *kuleana*, brought something valuable and unique to the table. Not surprisingly, however, each entity had a slightly different focus and perspective and brought its own unique limitations. OHA, for example, had the funds to close the deal, but at the time lacked the capacity to manage land independently. DLNR, on the other hand, had limited funds but had the capacity and resources to manage the land. TPL had the funds but land management was not a particular area of interest or responsibility. TPL was set to close the deal with Campbell Estate by September 2005 (Dawson 2005:6). In May 2005, TPL agreed to purchase the property from Campbell Estate for the requested \$3.65 million and would, in turn, be reimbursed \$250,000 from OHA and \$3.4 million in Forest Legacy Funds that would come via DLNR (Dawson 2005:4).

Because of the September deadline, pressure to purchase Wao Kele O Puna from TPL was mounting quickly; on August 26, 2005, OHA and DLNR staff drafted the first Memorandum of Agreement. The MOA was developed to assist OHA to acquire and manage the 25,856 acres of

land in Wao Kele O Puna. DLNR was responsible for the initial land management with the understanding that in due time management would be turned over to OHA once it developed its land management capabilities. Because DLNR did not have initial management start up funds, OHA eventually agreed to cover the initial \$228,000 start up costs to manage Wao Kele O Puna. An MOA was developed that included outlining important aspects such as ensuring management of Wao Kele O Puna was in compliance with all federal grant requirements and Forest Legacy Program guidelines; identifying management and preservation plans for the natural and cultural resources; “re-designating” the area as a forest reserve; preparing properly the lease and license agreement for the property; removing the Geothermal Resource Subzone; and seeking legislative funds to plug the geothermal well. On June 27, 2006, OHA, the Division of Forestry and Wildlife, and the DLNR signed the MOA (Dawson 2005:6,8; Office of Hawaiian Affairs 2012).

In July 2006, Campbell Estate conveyed to OHA, via TPL, the deed for Wao Kele O Puna. Shortly thereafter, OHA announced that Wao Kele O Puna was officially acquired by OHA in partnership with PDF, TPL and DLNR. Written into the MOA was a plan outlining the terms by which Wao Kele O Puna would be managed and describing the process by which DLNR would transfer management and enforcement responsibilities to OHA. In compliance with the MOA, Governor Linda Lingle placed Wao Kele O Puna back into the state Forest Reserve System by signing Executive Order #4218. From 2007-2013, OHA and DLNR have been working together to fulfill all terms of the MOA.

For more detail regarding the land acquisition, see the timeline below titled, “A chronological timeline of events leading to the purchase of Wao Kele O Puna by the Trust for Public Lands (TPL) and the Office of Hawaiian Affairs (OHA), Pele Defense Fund (PDF) and the Department of Land and Natural Resources (DLNR).”

A Chronological Timeline of Events Leading to the Purchase of WKOP

The following timeline contains selected documentation to better understand the developments leading up to the current status of the Wao Kele O Puna Forest Reserve. The timeline focuses on developments relating to the acquisition of WKOP by OHA and TPL. Additionally, this timeline is still in progress and therefore should be updated as DLNR and OHA continue to develop the WKOP Comprehensive Management Plan (CMP) and fulfill other conditions set forth in the Memorandum of Agreement (MOA). As previously mentioned, because of limited documentation the events detailed below may contain errors or inaccuracies.

Abbreviations used in Time Line Tables

BLNR	Board of Land and Natural Resources
CDUA	Conservation District Use Application
CMP	Comprehensive Management Plan
DAGS	Department of Accounting and General Services
DLNR	Department of Land and Natural Resources
DOFAW	Division of Forestry and Wildlife
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EO	Executive Order
MOA	Memorandum of Agreement

NAR	Natural Area Reserve
NARS	Natural Area Reserve System
OHA	Office of Hawaiian Affairs
PDF	Pele Defense Fund
PFR	Puna Forest Reserve
PNAR	Puna Natural Area Reserve
RCUH	Research Corporation of the University of Hawaii
TPL	Trust for Public Lands
USGS	United States Geological Survey
WKOP	Wao Kele O Puna
WKOPNAR	Wao Kele O Puna Natural Area Reserve

Table 10. Purchase of WKOP Timeline

DATE	EVENT
1848-52	Māhele of 1848-1852 under Kamehameha III. The Māhele converts the Hawaiian communal land system into a Western private property system.
Jan. 17, 1893	Overthrow of the Kingdom of Hawaii.
1898	Hawaiian Government Lands “ceded” to the United States through the passage of the Newlands Resolution, a Joint Resolution to annex the Territory of Hawai‘i. The area to become known as Wao Kele O Puna (WKOP) is designated Government Lands.
Jun. 8, 1911	Recommendation by Ralph Hosmer Superintendent of Forestry to set aside 19,850 acres of Government Lands to create the Puna Forest Reserve (PFR). The PFR would later become the Puna Natural Area Reserve (PNAR) and eventually WKOP.
Jun. 29, 1911	Governor of Hawaii, Walter F. Frear, along with the Board of Commissioners of Agriculture and Forestry sign the proclamation officially designating 19,850 acres of Government Lands as the Puna Forest Reserve.
March 1927	Thomas J.K. Evans surveys the Puna Forest Reserve. Boundaries are shown on Registered Map 2753. Map shows approx. 25,738 acres.
Nov. 26, 1928	Territorial Forester C.S. Judd recommends that the boundaries of the PFR be revised to add 5,888 acres bringing the total acreage to 25,738.
1950	The physical boundaries of the reserve remain unidentified until Superintendent of Forestry, William Crosby, works to establish the physical boundaries for the PFR.
Mar. 18, 1959	Hawai‘i Admission Act Pub L 86-3, 73 Stat. 4. §5(f) provided that the State of Hawai‘i was to hold former Hawaiian Government Lands (which included the PFR) as a Ceded Public Lands Trust for five trust purposes including “...the betterment of the conditions of native Hawaiians, as defined in the Hawaiian Homes Commission Act, 1920...”
1970	State of Hawai‘i establishes the Natural Area Reserve System (NARS)- Hawai‘i Revised Statutes §195 1-12.
Dec. 12, 1975	Proposal submitted to the Board of Land and Natural Resources (BLNR) that 6,500 acres of the PFR be established as the PNAR. BLNR approves the submittal and appoints a Master for public hearings.
Oct. 21, 1976	The Natural Area Reserve System Commission nominates approximately 6,500 acres of the PFR for inclusion into the NARS.
Nov. 12, 1976	BLNR votes unanimously to approve nomination and recommends to the Governor of Hawai‘i, George Ariyoshi, that a public hearing be held on the island of Hawai‘i covering the proposed regulation and withdrawal of WKOP from the PFR (as part of the NARS designation process).
Jan. 11, 1977	Public hearing held as part of the designation process. Mr. Steven Morse, representing the Hawaiian Coalition of Native Claims, is the only person to testify. He requests an amendment to the proposed regulation that would acknowledge the aboriginal rights of Native Hawaiians of Puna to use WKOP

DATE	EVENT
	<p>for hunting and gathering purposes. Regulation redrafted after obtaining a legal opinion for the AG's office to address Morse's recommendation. Thus Morse and other individuals may be allowed by Department of Land and Natural Resources (DLNR) permit to retain traditional foliage or food gathering privileges.</p> <p>Hearing Master's report released to the BLNR.</p>
Jun. 9, 1977	The BLNR recommends that the board review the Hearing Master's report, adopt the final regulation, and recommend to the Governor that he issue an Executive Order (EO) establishing Wao Kele O Puna Natural Area Reserve (WKOPNAR) upon completion of the boundary survey. Approximately 16,719 acres were designated as a NAR.
Jul. 1977	Draft Environmental Impact Assessment (EIA) prepared by DLNR.
Jan. 1978	Negative declaration on EIA determined that the creation of the NAR would not need an Environmental Impact Statement (EIS), that there would be no significant loss of use of the area, rather a net benefit in the protection of a significant portion of a geologically active area.
Nov. 9, 1978	<p>The following information was included with the formal BLNR submittal formally nominating WKOP for inclusion into the NARS:</p> <p>Located in the Puna Forest Reserve Protective Subzone of Conservation District whose total acreage is 25,700 acres. Mamalahoa Highway is mauka of the forest reserve; the "22Mile" Road transecting the highway at Glenwood ends about 1,000' from the westernmost corner of the reserve. The entire southwest boundary of the NAR is next to James Campbell Trust Estate land, and beyond that Hawai'i Volcanoes National Park. Northwestern adjoining the lands are subdivision lands with a developed road system up to the forest reserve boundary (Eden Rock Estate, Fern Forest Vacation Estates, Kopua Farm lots). A recent geothermal survey in the rift zone section of the NAR has indicated that there are insufficient geothermal reservoirs for energy development. The ecosystem is a low to mid elevation rainforest containing a portion of the active eastern rift of Kilauea. Vegetation ranges from ferns appearing on fresh lava rocks to mature forests dominated by 'ōhi'a trees. At least 22 native plant species and four native bird species have been recorded in the area. Soil is of an organic composition (histosols) present as a thin layer of geologically young lava rock. Average rainfall is 125-150 inches per year, supporting a luxuriant growth of epiphytic ferns, among them the endangered <i>Adenophorus periens</i>. The active rift zone (with flows as recent as 1977) cause continued changes to the geological and biological systems and are of significant scientific value for the mosaic of different age flows and the natural succession they represent. There are numerous lava tubes which have both a natural (cave-dwelling arthropods) and cultural value (burial sites and other cultural remains), the area holds great cultural significance as an area to gather medicinal plants etc.</p>
May 4, 1979	Department of Accounting and General Services (DAGS) releases survey information to create the WKOPNAR.
Nov. 16, 1981	Governor George Ariyoshi signs Executive Order (EO #3103) creating the WKOPNAR, containing an area of 16,843.891 acres (6x6 miles).
Mar. 2, 1982	Campbell Estate files Conservation District Use Application (CDUA) with the State for Geothermal exploration in Kahauale'a.
Apr. 1982	EIA for the Kahauale'a Geothermal Project completed by "True/Mid-Pacific Geothermal Venture in Coordination with the Trustees of the Estate of James Campbell".
May 1982	Campbell Estate releases Draft EIS for Geothermal exploration in Kahauale'a. Review of CDUA (HA-3/2/82-1463) and Final EIS ensues.
Feb. 25, 1983	Campbell Estate CDUA requests filed in 1982 with BLNR for exploration, development, and marketing of geothermal energy at Kahauale'a 1-1-01 approved. Supplemental document submitted to BLNR.
Aug. 12, 1983	Campbell requests extension to perform conditions of decision as ordered by BLNR.

DATE	EVENT
Apr.13, 1984	BLNR authorizes to hold public hearings on the administrative rules on designation & regulations of geothermal subzones (Title 13, Sub-title 7 Chapter 184). Board recommends hearing on sub-zoning be in August of 1984.
Jul. 13, 1984	Final submittal adopting Chapter 184, Administrative Rules "Designation & Regulation of Geothermal Resources Subzones".
Nov. 16, 1984	Designation of Kapoho and Kamaile on Hawai'i Island, as well as Haleakalā on Maui for geothermal subzone. BLNR board member Mar. Tagamori explained program began with enactment of "ACT 296 SLH 1983", with an amendment to ACT 296 that became ACT 151, SLH 1984 "Proposal for Designating Geothermal Resource Subzones" issued and approved, July 13, 1984.
Dec. 28, 1984	Designation of geothermal subzone for Kīlauea upper rift zone excluding Tract 22, Island of Hawai'i (unclear at this point if this included WKOP parcels 1-2-10-2 and 1-2-10-3).
Feb. 22, 1985	DLNR enters into a contract with the Research Corporation of the University of Hawai'i (RCUH) for technical services to establish geothermal resource subzones in an amount not to exceed \$29K. (Believe this to be in relation to Olson Trust lands for UH exploratory well).
May 10, 1985	Violation within the conservation district and protective subzone in the WKOPNAR (fairly certain this is the Kahauale'a parcel 1-1-01). Illegal road bulldozed sometime in October 1984 with 14" wide blade about 7/10 th of a mile long. The purpose was to construct a radio antenna within Campbell Estate lands but dozer operator mistook United States Geological Survey (USGS) markers for property boundary markers.
Oct. 25, 1985	<p>Amends the boards 12/28/84 decision and order on the proposed upper rift zone (Kīlauea) which excluded Tract 22. Campbell Estate now asking board to include Tract 22 into the geothermal subzone. Campbell proposes exchange of upper Kahauale'a lands including Tract 22 or some 25,461.311 acres to the State. The current parcels being developed for geothermal energy on their Kahauale'a lands are now being affected by a rift eruption (which settled into the long-running Pu'u 'Ō'ō eruption) making mining of geothermal resources unattainable. Instead Campbell Estate proposes that the State swap 27,644 acres of the WKOPNAR lands to the estate. WKOPNAR is not affected by the eruption.</p> <p>Request made to authorize public hearing for proposed withdrawal of land (WKOPNAR section). In swapping these lands, Campbell wanted to retain mining rights in Kahauale'a while processing CDUA for subzone inclusion and development and mining rights within the State parcel (WKOPNAR). The BLNR had difficulty with this request since it was imperative that exchange documents had to be executed by Dec. 27, 1985 in time for legislative review and they might have trouble understanding these conditions, particularly since the State wants to place Kahauale'a into the NAR system.</p> <p>Board issues cancellation of EO #3103 effectively removing WKOP from the NAR system.</p>
Dec. 1985	The State of Hawai'i exchanged approximately 27,800 acres of public "ceded" lands, including the WKOPNAR and other Puna lands on the Island of Hawai'i, for approximately 25,800 acres of land owned by the Estate of James Campbell at Kahauale'a.
Mar. 9, 1987	Gov. John Waihe'e cancels Executive Order #3103 and removes WKOP from the NARS by way of Executive Order #3359. Executive order modifies boundaries of the Puna Forest Reserve (WKOP parcels) for exchange purposes for the exploration and development of geothermal energy and in addition for the acquisition of lands by the State of Hawai'i for natural area purposes (Kahauale'a parcel).
Apr. 13, 1987	Kahauale'a NAR established, 16,726 acres.
Mar. 25, 1990	State's largest anti-geothermal demonstration. Over 1,200 non-violent supporters of the Pele Defense Fund (PDF) and the Big Island Rainforest Action Group protest at the True/Mid-Pacific gate at WKOP opposing geothermal development and supporting Native Hawaiian gathering and access

DATE	EVENT
	rights. 141 people arrested.
Aug. 1994	Hawai'i Third Circuit Court in Hilo hears Pele Defense Fund (PDF) v. Campbell Estate (Civil No. 89-089) in which Pele Defense Fund members who are Hawaiian subsistence or cultural practitioners asserted their constitutional rights of traditional access to WKOP forest, the former State of Hawai'i Natural Area Reserve acquired by Campbell Estate in the 1985 land exchange.
Aug. 26, 2002	Final judgment issued in the case of Pele Defense Fund v. The Estate of James Campbell, Deceased; W.H. McVay and P.R. Cassidy, in their fiduciary capacity as Trustees under the Will and the Estate of James Campbell. The Findings of Fact and Conclusions of Law and Final Declaratory Judgment/Injunction were entered resolving all claims as to all parties in favor of Plaintiff, PDF and against the defendant, the Estate of James Campbell.
Aug. 26, 2005	Memorandum of Agreement (MOA) developed to assist the Office of Hawaiian Affairs (OHA) to acquire and manage 25,856 acres of land from the Estate of James Campbell at WKOP to preserve natural and cultural resources; designation of the area as a forest reserve; properly prepare the disposition of the R-5 lease and license agreement for the property; and remove the geothermal resource subzone designation for the property. Division of Forestry and Wildlife (DOFAW) administrator Paul Conry reviews the MOA with the BLNR and recommends that the Board approve in concept the general terms of the MOA to assist OHA to purchase and manage the WKOP tract, authorize the Chairperson to negotiate and sign the MOA on behalf of the Board and Department, authorize the Chairperson to negotiate and sign on behalf of the Board agreements to terminate the Geothermal Mining Lease R-5 and bifurcate the Well Monitoring License Agreement, and authorize the Chairperson to hold public hearings to designate the WKOP as a forest reserve and remove the Geothermal Resource Sub-Zone designation on the site. Board unanimously approves submittal.
Sept. 9, 2005	BLNR approves the addition of TMK parcels 1-2-010:002 & 003 owned by OHA to the Forest Reserve System.
2006	State submitted an application to the Forest Legacy Program for fee simple title acquisition of WKOP in the Federal fiscal year 2006. DLNR received the full \$3.4 million in federal funds requested for the acquisition. OHA offered the balance of \$250,000 to enable the purchase of the property and expressed an interest in adding land ownership and management to their overall mission.
June 27, 2006	MOA between the DLNR, State of Hawai'i and the OHA signed.
July 11, 2006	Campbell Estate conveyed to OHA by The Trust for Public Land (TPL) by deed and recorded as Document No. 2006-129683. OHA becomes new owner of WKOP. MOA outlines a ten-year agreement designed to allow for temporary co-management of the natural and cultural resources of WKOP by DLNR and OHA. Under the MOA, a Comprehensive Management Plan (CMP) will be developed outlining the terms to manage WKOP. A key component of the plan describes the process by which DLNR will transfer management and enforcement responsibilities to OHA exclusively. Also, the MOA requires OHA and DLNR to each designate a person to act as liaison for transition of management and enforcement responsibilities.
July 12, 2007	DLNR/DOFAW conducted a public hearing in Hilo for four proposed additions to the Forest Reserve System in Hawai'i including WKOP.
Sept. 28, 2007	BLNR accepts Hearing Officer's report on public hearing for four proposed additions to the Forest Reserve system including WKOP. BLNR approved of and voted to recommend to the Governor the issuance of subject executive order to place WKOP into the Forest Reserve system.
Dec. 12, 2007	DOFAW requests the assistance of the Land Division to finalize the transfer of WKOP into the Forest Reserve system.
Feb. 28, 2008	Governor Linda Lingle signs Executive Order (EO #4218) officially placing WKOP into the State Forest Reserve system.*
Dec. 1, 2009	Two geothermal wells in WKOP are capped. Well monitoring license agreement between Campbell Estate and DLNR terminated.*

DATE	EVENT
Apr. 7, 2010	Approximately 5,797 acres are added to the Kahauale‘a Natural Area Reserve, bringing the total acreage to 22,520.
July 11, 2011	Change of designation to remove Geothermal Resource Designation submitted to DLNR.
August 2011	Economic Resource Assessment contracted by OHA completed. *
Aug. 12, 2011	Removal of Geothermal Resource Designation approved by DLNR.*

* MOA Requirements

Summary

Wao Kele O Puna’s historical era is marked by continuous change, as residents shifted from ancient Hawaiian practices such as sandalwood and *pulu* harvesting to sugar production and eventually to modern day geothermal exploration. Based on available information, the residents of Puna recognized and relied on existing environmental resources to keep themselves involved in the economic market.

The *lua pele* (Pele’s pit) or volcano has been a major natural resource that has historically attracted and continues to attract numerous visitors to the Puna district. Native Hawaiians have always revered Pele as a powerful entity capable of creating the very foundation of our islands. As knowledge about Pele's creative forces have prospered both locally and globally, countless locals and visitors make the journey to the volcano to experience her power and awe. Most people visit Pele through well-known, acceptable, and accessible sites. However, the next phases of our island development (greening of the land and recognition of and respect for our natural ecosystems) is occurring in lesser-known and more inaccessible sites such as Wao Kele O Puna. New plant life is growing and thriving in these areas and in turn provides *kanaka* with the necessary bounty of flora and fauna that sustain life in this ever-changing land. Without these natural processes constantly at work, Hawai‘i would be in danger of becoming barren and bereft of the rich, luscious, tropical landscape our islands are renowned for.

After conducting extensive research of the project area, it became apparent that the Wao Kele O Puna area represents a culturally and historically significant and sacred area; a place so meaningful and special that people in the past chose to limit their time and activity in this region recognizing even then the importance of preserving, protecting, and safeguarding the region. It has only been within the last twenty years that a concerted and formal effort has been made to implement such economic ventures as geothermal. The rich potential of the region and the intensive search for more sustainable and renewable energy sources has thrust such areas as Wao Kele O Puna into the forefront. However, despite the constant pressure to develop and expand, it’s imperative that we remain cognizant and respectful of the unique history, cultural traditions, and spiritual aspects of this region that have allowed *kanaka* to live and thrive in harmony with the environment, landscape, and ecosystems of Wao Kele O Puna.

CULTURAL RESOURCES OF WAO KELE O PUNA

Previous Archaeological Reports

A number of archaeological studies have been undertaken within the confines of the present Wao Kele O Puna Forest Reserve (Holmes 1982 and 1985, Hommon 1982, Yent 1983, Rosendahl 1985, Haun and Rosendahl 1985, Bonk 1988, 1989a, 1989b, 1990, McEldowney and Stone 1991, Kennedy 1991, Burtchard et al. 1994, Sweeney & Burtchard 1994, Sweeney et al. 1995). Many of these studies were reconnaissance type surveys carried out in conjunction with proposed geothermal activities and only a small number of surface archaeological sites were uncovered. The following is a chronological summary of some of the more prominent archeological work conducted in the vicinity of the project area.

Table 11. Previous Archaeological Studies in WKOP

Date & Author	Location (Ahupua'a, TMK)	Project Type	Findings
1982 Tommy Holmes	Kahauale'a, Puna, Hawai'i Island. (TMK 3-1-1-01:1)	Preliminary Historical and Archaeological Study	Compiled a list of cultural sites located in Kahauale'a based on historical and ethnographic evidence. No archaeological work was conducted.
1982 Robert Hommon	Upland Kahauale'a, Puna, Hawai'i Island. (TMK 3-1-1-01:01, 3-1-2-08:01)	Archaeological Reconnaissance Survey	No archaeological sites were located during his survey in Kahauale'a.
1983 Martha Yent	Pahoa, Puna, Hawai'i Island. (TMK 3-1-5-08:1)	Archaeological survey of Lava Tubes	Surveyed the Pahoa Cave lava tube system located in the ahupua'a of Pahoa. Yent located burials, defensive structures, midden deposits, and terraces in the lava tube.
1985 Tommy Holmes	Puna Forest Reserve/Wao Kele 'o Puna Natural Area Reserve, Puna, Hawai'i Island. (TMK 3-1-1-01:1)	Preliminary Historical and Archaeological Study	Compiled a summary of the history and archaeology of the Puna Forest reserve based on previous reports. No archaeological work was conducted.
1985 Paul Rosendahl	BioPower Project Area, Kapaahu, Kaunaloa, Hulunanai, Kupahua, and Kalapana, Puna District, Hawai'i Island. (TMK 3-01-2-08:1)	Archaeological Field Inspection	No archaeological sites were located during the survey.
1985 Alan Haun & Paul Rosendahl	Proposed Geothermal Development Area: Wao Kele O Puna Natural Area Reserve, Puna District, Hawai'i Island.	Limited Archaeological Reconnaissance Survey	Conducted five transects within WKOP proposed Geothermal Development Area. Located 5-6 mounds in the southeast section of Pu'u Heiheiahulu.
1988 William Bonk	Geothermal Resource Subzone of Upper Kamaili, Kehena and Kikala, Puna, Hawai'i Island.	Archaeological Reconnaissance Survey	Surveyed the road corridor to the geothermal well site and the 3-acre well site. No archaeological sites were located during the survey.

Date & Author	Location (Ahupua‘a, TMK)	Project Type	Findings
1989a William Bonk	Geothermal Resource Subzone of Upper Kamaili, Kehena and Kikala, Puna, Hawai‘i Island.	Archaeological Reconnaissance Survey	Surveyed an alternate roadway to the geothermal well site. No archaeological sites were located during the survey, however, one <i>kī</i> and one <i>‘awa</i> plant were located.
1989b William Bonk	Geothermal Resource Subzone of Upper Kaimu, Makuu, Kaohe, Kehena, Kaapahu and Kamaili, Puna, Hawai‘i Island. (TMK 3-1-2-010:003)	Archaeological Monitoring and Additional Reconnaissance Survey	Surveyed the road between geothermal well site 1 and 2. No archaeological sites were located during the survey.
1990 William Bonk	Geothermal Resource Subzone of Upper Kaimu, Makuu, Kaohe, Kehena, Kaapahu and Kamaili, Puna, Hawai‘i Island. (TMK 3-1-2-010:003)	Archaeological Reconnaissance Survey	Surveyed the Geothermal Resource Subzone. No archaeological sites were located during the survey.
1991 Holly McEldowney & Fred Stone	Puna Forest Reserve and Adjacent State of Hawai‘i Lands, Hawai‘i Island. (TMK 3-1-2-010:003)	Archaeological Reconnaissance Survey	Surveyed three lava tube systems. Surveyed 9 miles of lava tubes and located 42 cave entrances, numerous burials, midden scatters, stone platforms, fire rings, and fortifications.
1991 Joseph Kennedy	Buffer Zone Surrounding Proposed Well Site SOH-3, Puna, Hawai‘i Island. (TMK 3-1-2-10: Por 1)	Archaeological Inventory Survey	Surveyed the buffer zone at proposed well site SOH-3 within WKOP. The only site documented was remnants of the historic railway system.
1991 Joseph Kennedy	Proposed Kilauea Middle East Rift Zone, Well Site No. 2, Puna, Hawai‘i Island. (TMK 3-1-2-010:003)	Archaeological Inventory Survey	Surveyed well site No. 2 at the proposed Kilauea Middle East Rift Zone. The only site documented was remnants of the historic railway system.
1994 Greg Burtchard et al.	Kīlauea East Rift Zone: Kapoho, Kamā‘ili, and Kīlauea Geothermal Sub-Zones, Puna District, Hawai‘i Island	Archaeology, Land-Use Model and Research Design	Compiled previous historical and archaeological information to develop a land-use model and research design for the Kīlauea East Rift Zone.
1994 Maria Sweeney & Greg Burtchard	Kilauea East Rift Zone: Kapoho, Kamā‘ili, and Kīlauea Geothermal Sub-Zones, Puna District, Hawai‘i Island.	Archaeological Sample Survey	Surveyed sample sites within the Kīlauea East Rift Zone, including areas within WKOP.

During the 1980s, three archaeological reports (Holmes 1982 & 1985, Hommon 1982, and Haun, Rosendahl, & Landrum 1985) were published concerning the Puna forest zone. The Hommon and Rosendahl et al. efforts included reconnaissance surveys in upper Kahauale‘a and the Wao Kele O Puna Natural Area Reserve respectively. The report by Holmes was a documentary literature search focusing on the Puna Forest Reserve/Wao Kele O Puna Natural Area Reserve. The 1982 Holmes historical documentary research on Kahauale‘a lands, owned by the Estate of James Campbell, provided an overview for the Kahauale‘a geothermal project; the brief

overview emphasized trails and upland planting areas and noted a *heiau* two miles below the Kalalua Crater (Holmes 1982). His report noted that in 1840, members of the Wilkes party (U.S. Exploring Expedition) followed a trail paralleling the East Rift Zone on the south from Kalalua Crater toward Kapoho (Holmes 1982:5). Aside from this reference, no specific archaeological features were noted as existing in the project area.

Holmes noted, however, that the native forest zone in Kahauale‘a was exploited for bird catching and wood gathering (Figure 69). Additionally, Holmes cited Dr. Jim Jacobi of Hawai‘i Volcanoes National Park who noted archaeological sites south of Kalalua Crater at the 1,200 to 1,400 foot elevation (Holmes 1982:10). While no historic period sites were found during the limited reconnaissance survey, the 1982 Holmes study found evidence of historical remains in the project area including not only the Wilkes party trail but also habitation/processing sites associated with logging and possible exploitation of *pulu*, woolly material from the Hawaiian tree fern used as pillow and mattress filler, a dressing for wounds, and to embalm the dead.

Many of these historical and archaeological studies were conducted as part of geothermal development in the Puna Forest Reserve and consistently described the area as an uninhabited and isolated rain forest with only sparse and periodic human activity. Holmes (1982) and Hommon (1982) summarized this description in their reviews of historical and archaeological information for the neighboring Kahauale‘a area. Hommon reported finding no historic or archaeological remains during his Kahauale‘a reconnaissance survey covering 8.75 miles of access road and a proposed 5-acre well site. Both studies noted the virtual absence of archeological sites and the low probability of finding any. Hommon found only two indications of past human activity including an abandoned jeep road and “a small (5 by 4 feet or c. 1.5 by 1.2 meters) isolated area of Kahili ginger plant” (Hommon 1982:15).

Ethnographic evidence probably represents the best evidence of prehistoric land use in the upland forest exploitation zone. Holmes reported that the zone has generally been viewed as an area unlikely to foster any kind of permanent residence or sustained work activity (Holmes 1985). However, relying on native testimony he alludes to at least two inland villages – each associated with a specialized industry. Panau was noted as a location where canoes were built, and Ola‘a (a settlement that played a later role in the Puna sugar industry) was an area known for bird catching and fabricating *tapa* and *olana*. Although no archaeological studies have reported signs of permanent or established prehistoric use of the upland forest zone, the possibility of identifying temporary dwellings exists and should not be dismissed. Holmes noted that a few inland areas were used as rest stations or somewhat permanent dwellings for native bird-catchers (Holmes 1985).

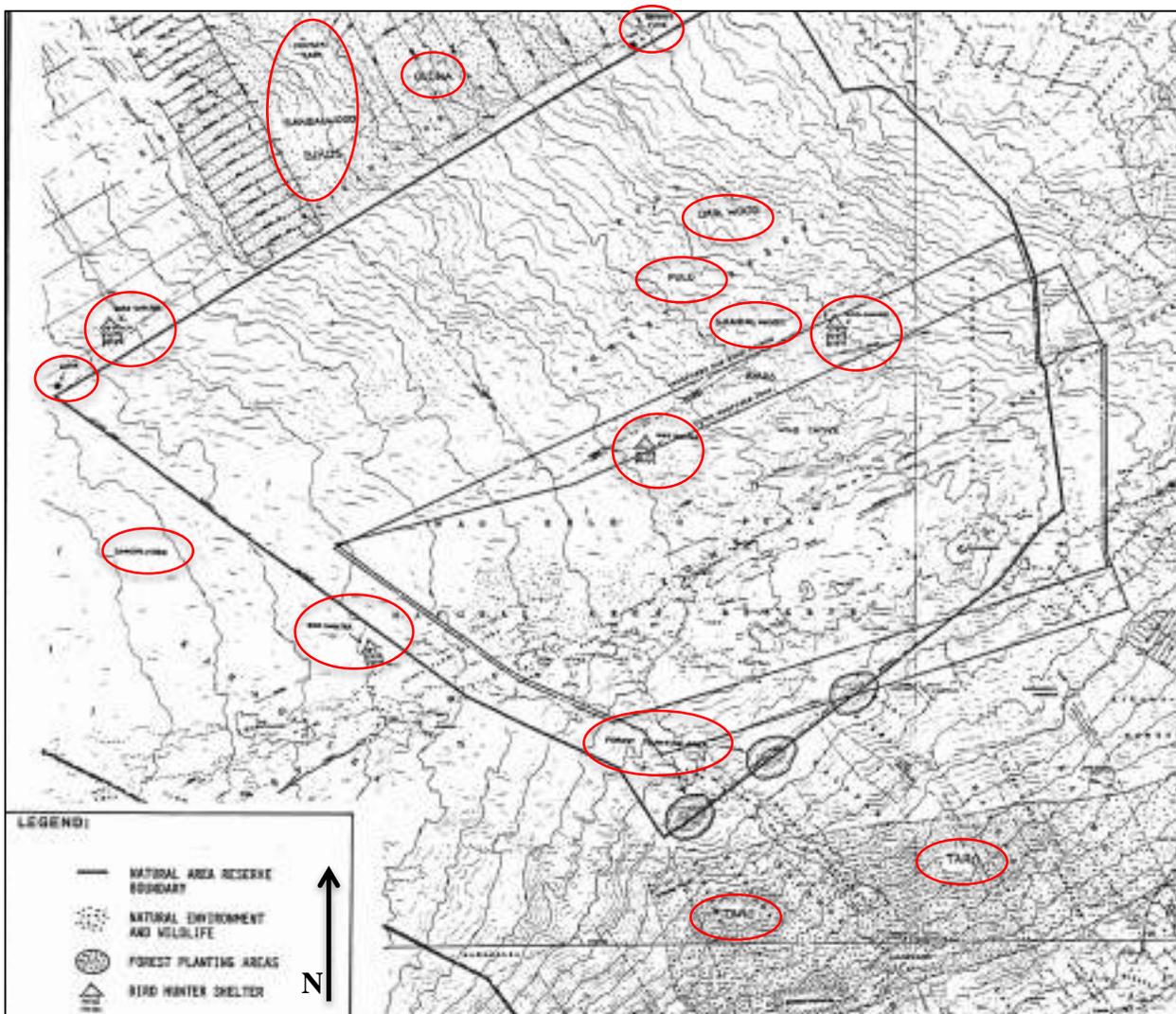


Figure 69. Map indicating probable locations of cultural sites in and around WKOP (adapted from Holmes 1985)

Also in 1985, a limited reconnaissance survey identified one site, a cluster of possible prehistoric Hawaiian burial structures, at the summit of Pu‘u Heiheiāhulu in the southeast corner of the Proposed Geothermal Development Area (Haun et al. 1985). Rosendahl’s efforts included ground and aerial (helicopter) reconnaissance. Aside from this one site, no other historic or prehistoric sites were observed. The survey noted the presence of “remnant cultigens (*kī* and *kukui*) in the southwest portion of the Geothermal Resource Subzone and the northeast corner of the Proposed Development Area indicates that these areas may potentially contain archaeological remains as well; however, their presence could also result from natural dispersing agents (e.g., pigs, rats, or birds)” (Haun et al. 1985). A previous archaeological investigation of the adjacent bioPower Project Area (Rosendahl 1985) identified a variety of archaeological remains representing habitation, agricultural, and possible religious sites (Figure 70). These findings support the possibility that similar remains may be present in the southern portions of the Proposed Development Area and the Geothermal Resource Subzone.

Evidently, the Haun, Rosendahl, Landrum survey (1985) was limited to providing information to assess the archaeological potential of the project area as a whole and to recommend necessary mitigation work at specific construction sites. Other inventory surveys were conducted at specific proposed well sites or access roads located north of the Rift Zone and west of the Ka'ohē Homesteads (Bonk 1988, 1989a, 1989b, 1989c, 1990; Kennedy 1990). The only surface remains found were five to six cairns and mounds (1 to 2 m in diameter, 80 to 1.5 m high) located near a fumarole on Pu'u Heiheiahulu and interpreted to be possible prehistoric Hawaiian burial structures (Haun et al. 1985:7).

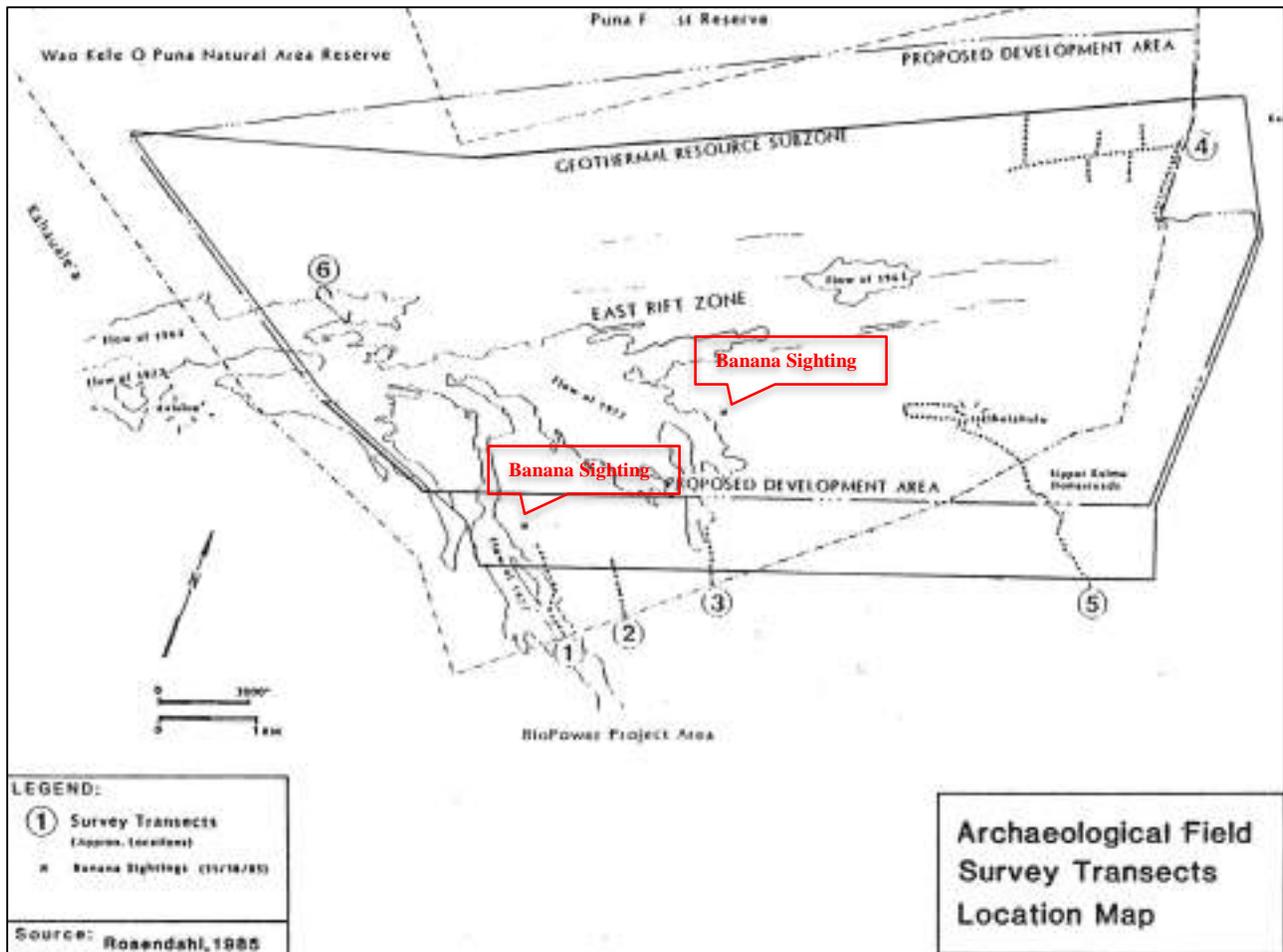


Figure 70. Rosendahl's survey transects and location of banana sightings (adapted from Rosendahl 1985)

Bonk, in his 1990 archaeological survey that included the Puna geothermal resource subzone, found no direct evidence of human use or presence in the study area. Specifically, he noted: “Caves, burials, temporary or permanent habitation sites, trails, platforms, paving, stone alignments or walls, agricultural evidence supported by terraces, ground clearings, or anything else suggesting horticultural use, or for that matter cultural indicators of any kind, were not seen during the field examination. However, this does not rule out former forest product exploitation within the area. But without some indication of human presence we can only speculate as to cultural exploitation” (Bonk 1990:15). Bonk concluded by stating “that no artifactual material

was found during our survey of well sites 2 and 3 and for the roads providing access. However, the presence of nonartifactual but cultural useful plant life may well prove helpful as we have an opportunity to gain more data on forest products” (Bonk 1990:15).

In 1991, McEldowney and Stone conducted a survey of three lava tube complexes (Southern, Middle and Northern systems) that were located within the former Puna Forest Reserve and on the adjacent State lands. Each of these tube complexes appear to be located within portions of the Aila‘au lava flow, which dates to between A.D. 1410 and 1460. While only a short section of the Southern Tube extended into the Campbell Estate property, lengthy stretches of the Middle and Northern tubes were found to be present in what is now the Wao Kele O Puna Forest Reserve. McEldowney and Stone investigated 42 tube entrances, traversed approximately 9 miles of lava tube, and mapped circa 6.6 miles. Numerous human burials were encountered during the survey (the Southern Tube section was found to contain over 100 individuals). The discovery of historic artifacts associated with some of the *iwi* suggested that several of these burials were post-Contact in age. Stone platforms were also encountered within the tubes. These were interpreted as either burials or resting platforms. There was also evidence of temporary habitation, including shell midden and artifacts. Several sections of lava tube appeared to have been modified to serve as refuge caves (McEldowney and Stone 1991). They reported the following:

One lava tube runs almost continuously for at least 7.5 miles from the Pahoa Highway, 4.2 of which are in Campbell Estate land and about 1.2 in the Geothermal Sub-Zone. Several other tube systems could only be followed as scattered segments although they were part of much longer, continuous tubes when the flows were active. Evidence of Hawaiian use within the tubes also extends onto Campbell Estate land and a high proportion of the lava tube segments found have burials, both outside and within the former Reserve. Burials can include only a few individuals or fairly large groups of individuals. The tubes visited were found to be rich in invertebrate taxa. Another 17 cave species are found in adjacent areas and probably occur within the study as well. (McEldowney 1991:2)

Given the limited time available for the survey, as well as the rigorous working conditions within the lava tubes, the tube sections were mapped by pace and compass rather than by more accurate methods. In the report the authors note that “this study and the maps produced should be preliminary and are by no means complete or exhaustive” (McEldowney and Stone 1991:5). They also remark that, “only a small portion of the Campbell Estate land could be covered in this survey” (McEldowney and Stone 1991:1). There is a high possibility that further sections of the lava tubes exist within WKOP and that more burials and cultural sites are present.

It should be noted that McEldowney and Stone produced two reports of their work. The first was confidential because of the numerous burial sites found, and the second was a public report. The public report contained only general locations and information to describe the nature of the lava tubes and relevant archaeological features, while the confidential report contained specific locations of the lava tubes, their entrances, and specific burial sites. While we were able to locate and examine the public report, we were not able to locate a copy of the private report. We contacted OHA, DLNR, SHPD, and McEldowney, but no one could locate a copy.

The next archaeological survey, conducted by Kennedy in 1991, included these general findings:

Based on the direct observation of surface conditions along the sweep framework corridors, and on the evaluation of understory and canopy type along the periphery of these corridors, we conclude the following: Mud, water, and thick accumulations of rotting vegetation prevented, in most cases, any direct contact with bare lava surfaces. The similarity between understory and canopy along the sweep corridors and that which was observed within an approximate 100' periphery leads us to conclude that surface conditions are the same in these outer areas as they are where we could see them directly. Therefore, the percentage of the study area underlain by *pahoehoe* and *a'a*, apparent differences in flow age and the distribution of these differences cannot be determined at this time. (Kennedy 1991:12)

In addition Kennedy provided specific findings for the SOH-3 buffer zone:

Aside from the segmented portions of the historic rail systems, no cultural indicators were located within the buffer area. There were no sightings of any cultigens such as banana or kukui, within the buffer zone. The two remnant segments of the historic rail system must be considered an archaeological site – as is the OR&L right of way on the island of Oahu. They are more than 50 years old and reflect a trend in history (i.e.) historic forest exploitation (logging) in this area. A Significance Evaluation Criteria for this site (T-1) is included as Appendix “A” in this report. The remnant segments are no more than 40 feet long and roughly 5 feet wide and feature rusted portions of rails and spikes. Some ohia ties are present and rotting. The overall condition of T-1 is fair to good, the function is logging transportation and the age is early 1900's (1910?), (Kennedy 1991:2)

In 1994, Burtchard et al. compiled a detailed overview of the previous archaeological work that had been conducted in the three geothermal resource subzones (Figure 71 & 72). His findings emphasized that most of the previous archaeological research had been conducted along the coast in the Kapoho region. On the other hand, inland surveys in Kama'ili and Kīlauea GRS were limited, and the only documented pre-contact sites in the Kīlauea Subzone were the mound features located on Pu'u Heiheahulu by Haun et al. in 1985 (Burtchard et al. 1994:31).

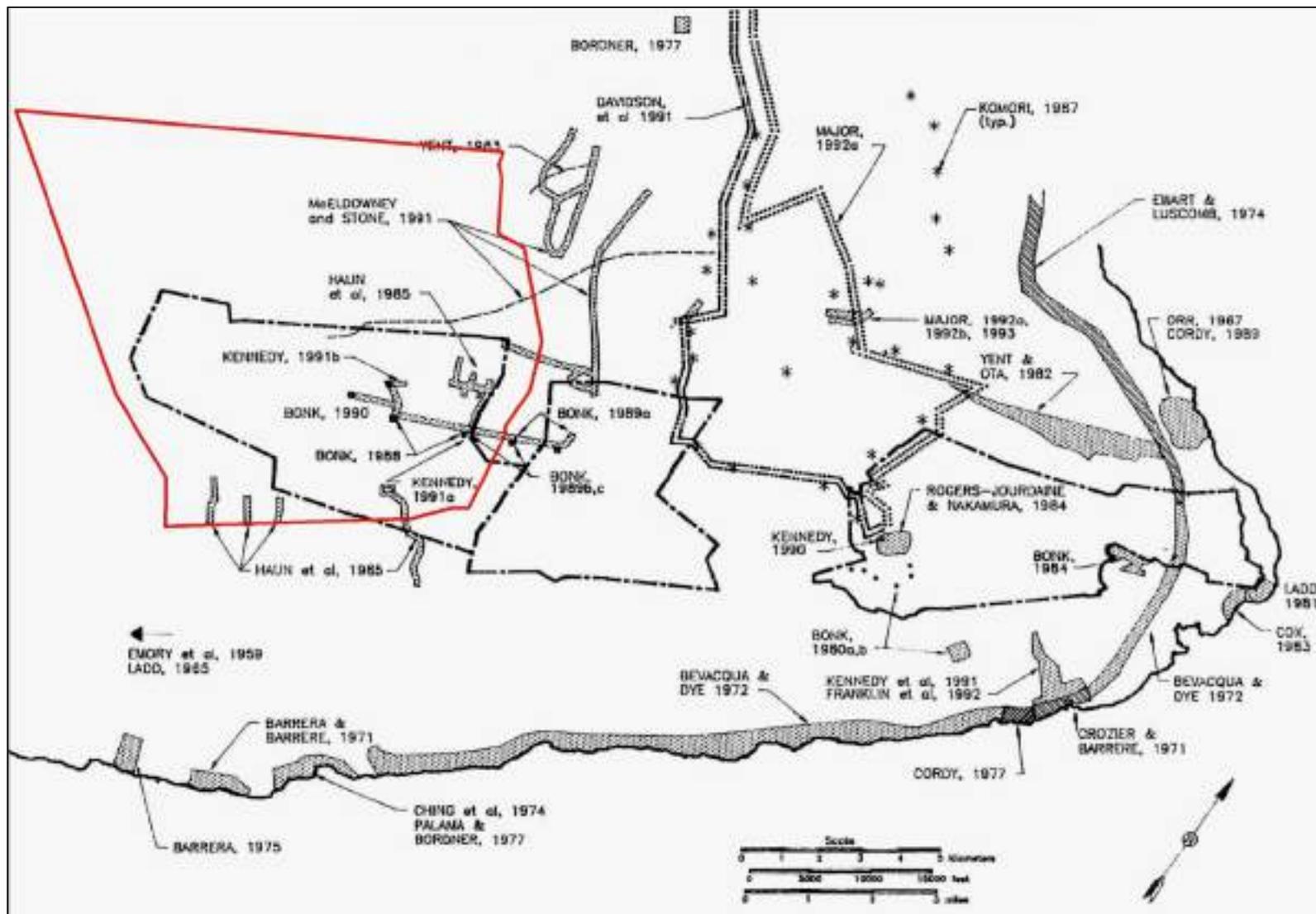


Figure 71. Previous archaeological work in around WKOP, (adapted from Butchard 1994)

Sweeney reported that the most comprehensive list of archaeological work in the project area was compiled by Burtchard in conjunction with the Kīlauea East Rift Zone land-use model and research design (Burtchard 1994:29-38) and that report should be referenced for a full chronicle of these studies. Sweeney wrote: “At the time the present survey began, 24 sites were known to fall within the Geothermal Subzones Project boundaries. Our effort added 15 new site localities to that count. Because the present study focuses solely on the three geothermal subzones, most of the new localities are situated in the inland zones. The coastal fringe was not considered in the present sample survey” (Sweeney et al. 1995:16).

Sweeney explained that the majority of known sites in the study were likely to have been in use during the pre-contact period:

These localities are situated entirely within the land-use model’s windward and leeward agricultural zones (i.e., Zones 2a, 2b and 3b). Of these inland sites, perhaps only the lava tubes provide evidence for residential use – and that is presumed to be primarily for short-term refuge. More common are resource use areas or places characterized by aggregated associations of economically useful Hawaiian plants. Many of these latter site types contain no obvious structural remains. Indeed, the absence of built features in these planting areas reinforces the notion that, given sufficiently well developed soils and sufficient rainfall, successful production need not involve construction of terraces, mounds, or other features typically affiliated with prehistoric and early historic Hawaiian agriculture. If so, the relative absence of inland architectural features, even in older *kipuka* (perhaps especially in older *kipuka*) does not necessarily indicate low intensity use in the past. (Sweeney et al. 1995:16)

Sweeney also noted that in addition to documenting architectural remains, the report also recognized the importance of identifying extant native Hawaiian planting areas in the region. She noted, “In light of ethnohistoric accounts alluding to the past importance of Puna agriculture, and the volcanic destruction that appears to have impacted that productive capacity, it is important that no information sources on past land-use practices be overlooked. While cultigen associations cannot be unambiguously linked to particular time periods, they provide useful data on the general distribution of farmed resources across the landscape” (Sweeney et al. 1995:55).

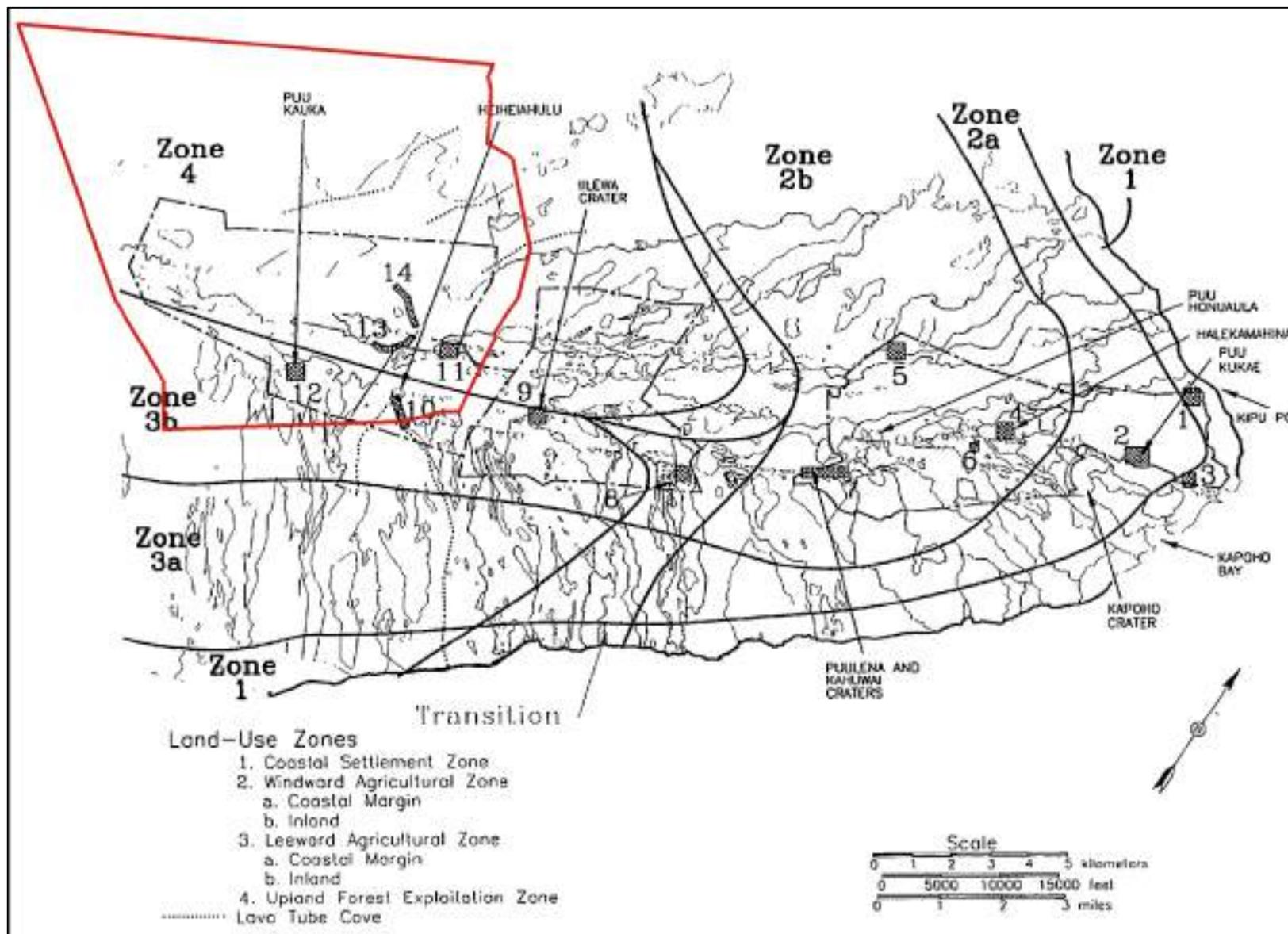


Figure 73. Map of geothermal subzones, land-use zones, and survey blocks (adapted from Sweeney et al. 1995)

Lastly, Sweeney's report provided recommendations for future work in the Geothermal Resource Subzone Project Area, including:

... a focus on intensive survey in older sediment flows, better documentation of lava tubes and known archaeological sites for the area, paleoenvironmental reconstruction and refinement of both spatial and temporal models designed to examine the distribution of archaeological remains. Ultimately, the study of human settlement in a district such as Puna, with frequent environmental perturbations and changing landscapes, can only increase our knowledge of variation in Hawai'i settlement patterns. This variation expands our understanding the past, especially the relationship between behavioral strategies, and particular environmental and historical contexts. (Sweeney et al. 1995:55)

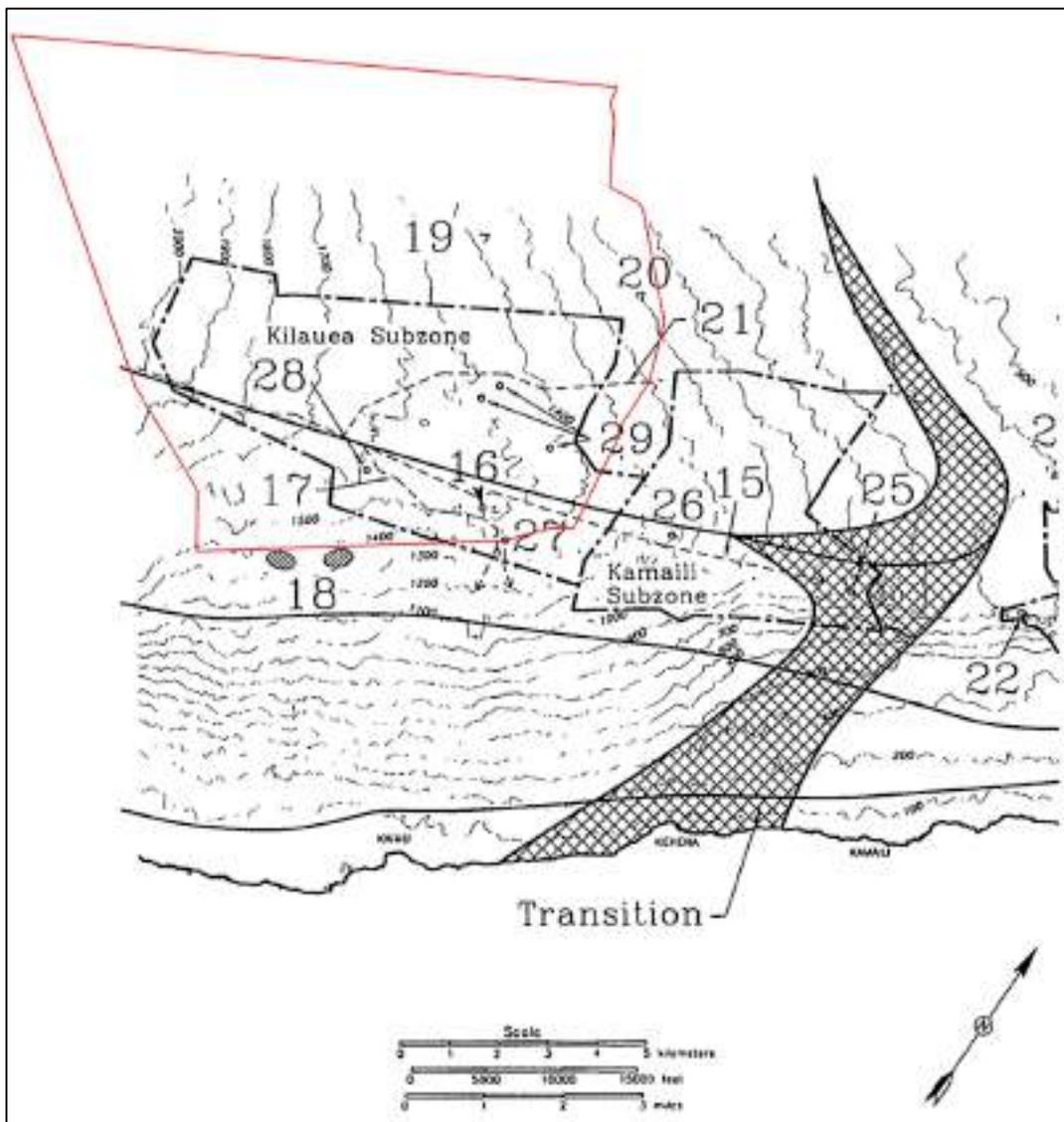


Figure 74. Known site distribution in the WKOP region (adapted from Sweeney et al. 1995)

Previously Documented Cultural Sites in WKOP

This section provides more detail about the known sites already identified and documented (through historical literature or archaeological work) in WKOP (Figure 75).

Table 12. Previously Documented Cultural Sites in WKOP

Site Name	SIHP Site #	Documented Source	Located in 2013 aerial survey	Description
Pu‘u Heiheiahulu mounds	50-10-55-19853	Haun et al. 1985, Sweeney 1995	Yes	Seven mounds and a terrace platform located on the southeast side of Pu‘u Heiheiahulu.
Wilkes’ Trail of 1840	NA	Loebenstein 1895, Holmes 1985	No	Location of trail has not been located or verified in any surveys. General area is partially covered by recent lava flows.
Northern unnamed trail	NA	Loebenstein 1895	No	Location of trail has not been located or verified in any surveys. The probable area is partially covered by 1977 lava flow.
Kaimū Trail	NA	Loebenstein 1895	No	Location of trail has not been located or verified in any surveys. The probable area is partially covered by 1977 lava flow.
Upper Kaimū Cave	NA	Sweeney 1995	Yes	Lava tube with numerous skylights and sinkholes. Located to the south of Pu‘u Heiheiahulu. Partially covered by 1977 lava flow The probable area is partially covered by 1977 lava flow.
Middle Lava Tube Cave	50-10-55-14900	McEldowney and Stone 1991	No	Multiple features and entrances, part of larger tube complex in the massive Ail‘a‘āu flow ca. 1600 A.D.
Southern Lava Tube Cave	50-10-55-14901 & 50-10-55-14902	McEldowney and Stone 1991	No	Multiple features and entrances, part of larger tube complex in the massive Ail‘a‘āu flow ca. 1600 A.D.
Pu‘u Kauka kīpuka	50-10-54-19854	Sweeney 1995	Yes	Native plant cultigen site located in and around Pu‘u Kauka crater.
Forest Planting Areas	NA	Loebenstein 1895	No	Location of these areas have not been located or verified in any surveys. The probable area is partially covered by 1977 lava flow.

Site Name	SIHP Site #	Documented Source	Located in 2013 aerial survey	Description
Bird Catching Shelters	NA	Coan 1882 & Lyman 1846	No	Grass huts that were observed during the 1840s by missionaries Coan and Lyman. Location of these areas have not been located or verified in any recent surveys.
Pāhoa Lumber Co. Railroad grade	50-10-55-19849	Kennedy 1991, Sweeney 1995	No	Railroad associated with 'ōhi'a logging in the 1900s.

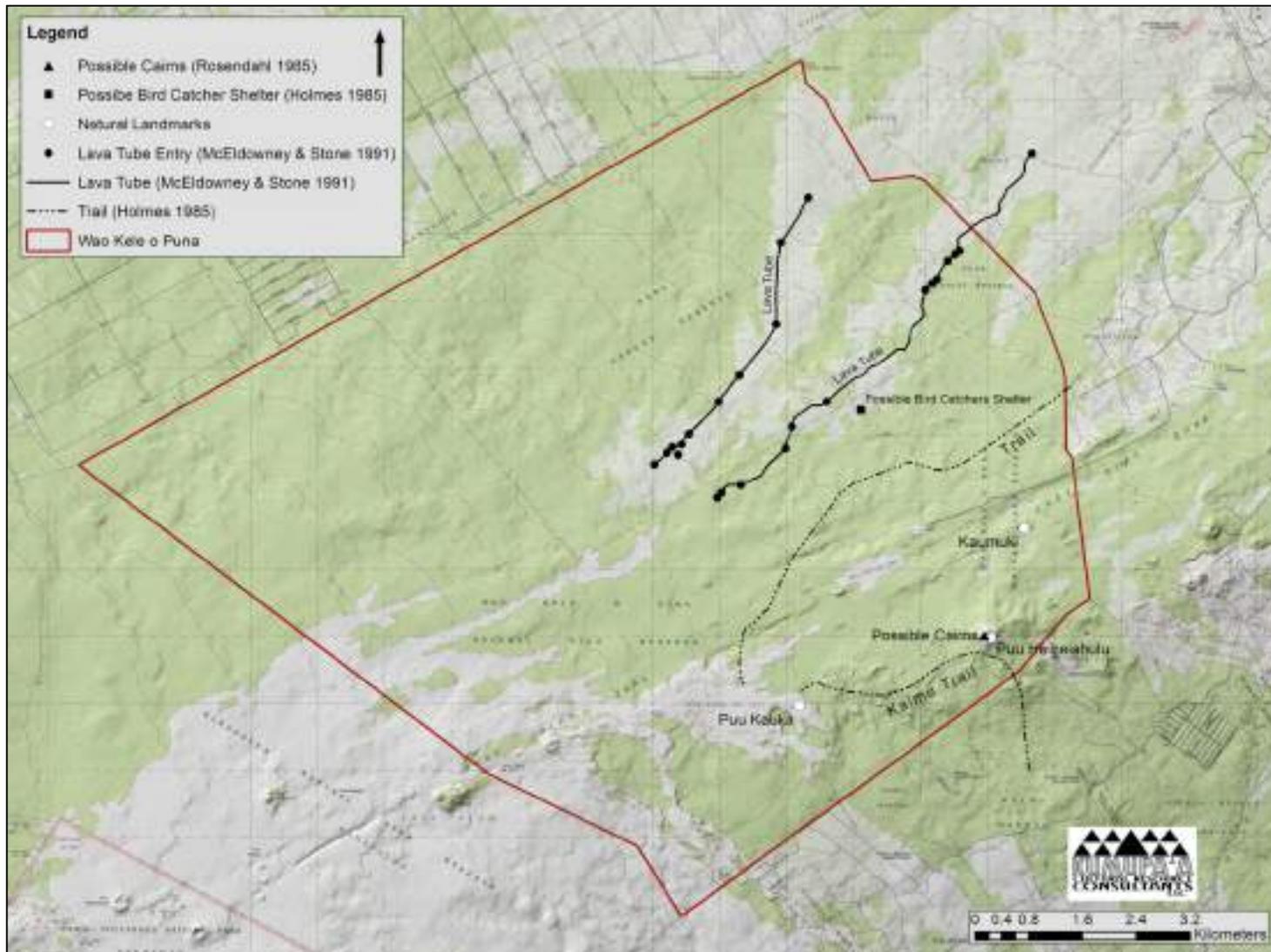


Figure 75. Some of the known cultural resources located in Wao Kele o Puna

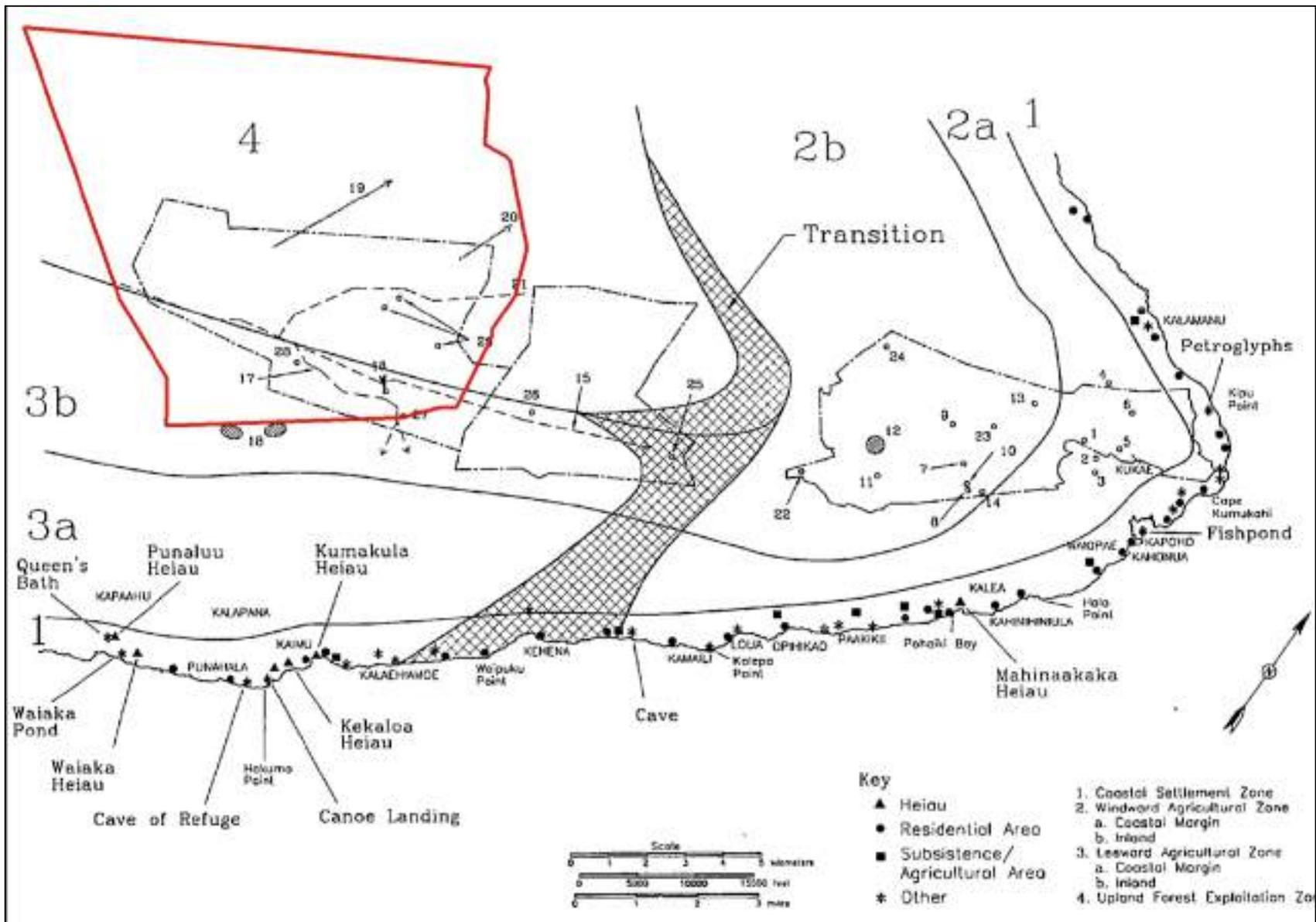


Figure 76. Known archaeological sites in WKOP (adapted from Sweeney et al. 1995)

Pu‘u Heiheiahulu, SIHP No. 50-10-55-19853

This site was first recorded by Haun et al. in 1985. They located five to six mounds on the south east side of the *pu‘u*. According to the report, “the largest mound is c. 2.0m in diameter and c. 1.5m high. The rest range from c. 1.0 to 1.5m in diameter, and average c. 80cm in height. The features are constructed of stacked and/or piled *a‘a* slabs, and at least one appears to be faced” (Haun et al. 1985:7). Haun et al. assign these features a burial function, but provide no further evidence to explain why this function was selected.

The last on-ground effort to locate and document this site was by Sweeney et al. in 1994 (Figure 77). During this survey, the field crew located seven mounds and one flat-topped platform. They further describe the area as located amongst active steam vents and built upon cracked *pāhoehoe* lava. At the time of this survey (1994), Sweeney noted that the site was in good condition and that there was no evidence of disturbance at the site due to the inaccessibility of the area. However, it was noted that the boundaries of Feature 2 (the platform terrace) had been diffused by the construction of the concrete trig station.

Specific measurements of the site features included:

- Feature 1: mound measuring 3.3m diameter, 2.0m high
- Feature 2: platform terrace measuring 3.2m long, 1.6m wide, 0.85m high
- Feature 3: mound measuring 1.15m diameter, 1.4m high
- Feature 4: mound measuring 1.5m diameter, 0.75 high
- Feature 5: mound measuring 1.5m diameter, 0.7m high
- Feature 6: mound measuring 2.7m diameter, 1.0m high
- Feature 7: mound measuring 1.6m diameter, 1.0m high
- Feature 8: mound measuring 2.4m diameter, 0.8m high

Future work at this site should include conducting a pedestrian survey of the area to relocate the seven mounds and platform terrace to assess their current condition. Further research could also help determine the age and function of the site and whether the mounds are burial sites.

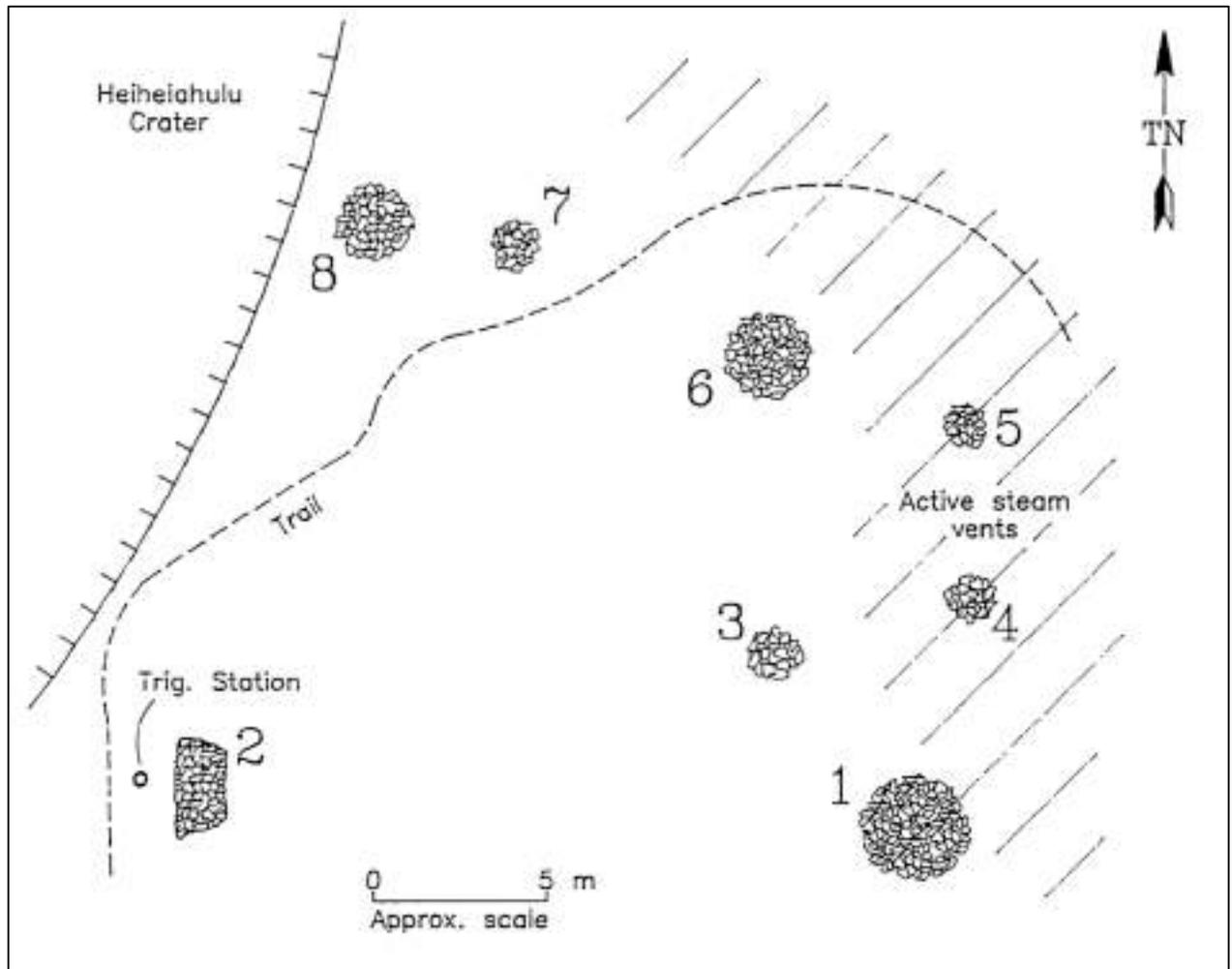


Figure 77. Map of Pu'u Heiheiāhulu mounds and platform, Sweeney 1995

Wilkes Trail (1840)

The only documentation on the Wilkes' trail has come from ethnohistorical accounts (Figure 78). Holmes provides the most detailed description of the trail and its location:

Probably the best-known trail that would have passed through the Puna Forest Reserve is the one talked about and taken by Captain Wilkes' party in 1840. This trail apparently junctured off of another old trail just to the east of Makaopuhi, traversing Kahauale'a at about 2,200-ft. elevation. It passed just north of Kalalua Crater and continued [as shown in Wilkes' 1845 map of the southeast portion of Hawaii] down the rift zone. The trail clearly passes through the Puna Forest Reserve. It was apparently the trail that Hawaiians from eastern Puna used in going to Kilauea or points beyond. In fact, Wilkes notes as he talks about food supplies getting low that "we were extremely fortunate in our kanakas, who were a body of fine young men, that had come up from Kapoho, the southeast point of the island, with provisions for sale...." He goes on to note that "this was

opportune, as they were all well acquainted with the road we were about to travel.” The trail can clearly be seen on one of the maps that Wilkes drew to accompany his “Narrative of the U.S. Exploring Expedition.

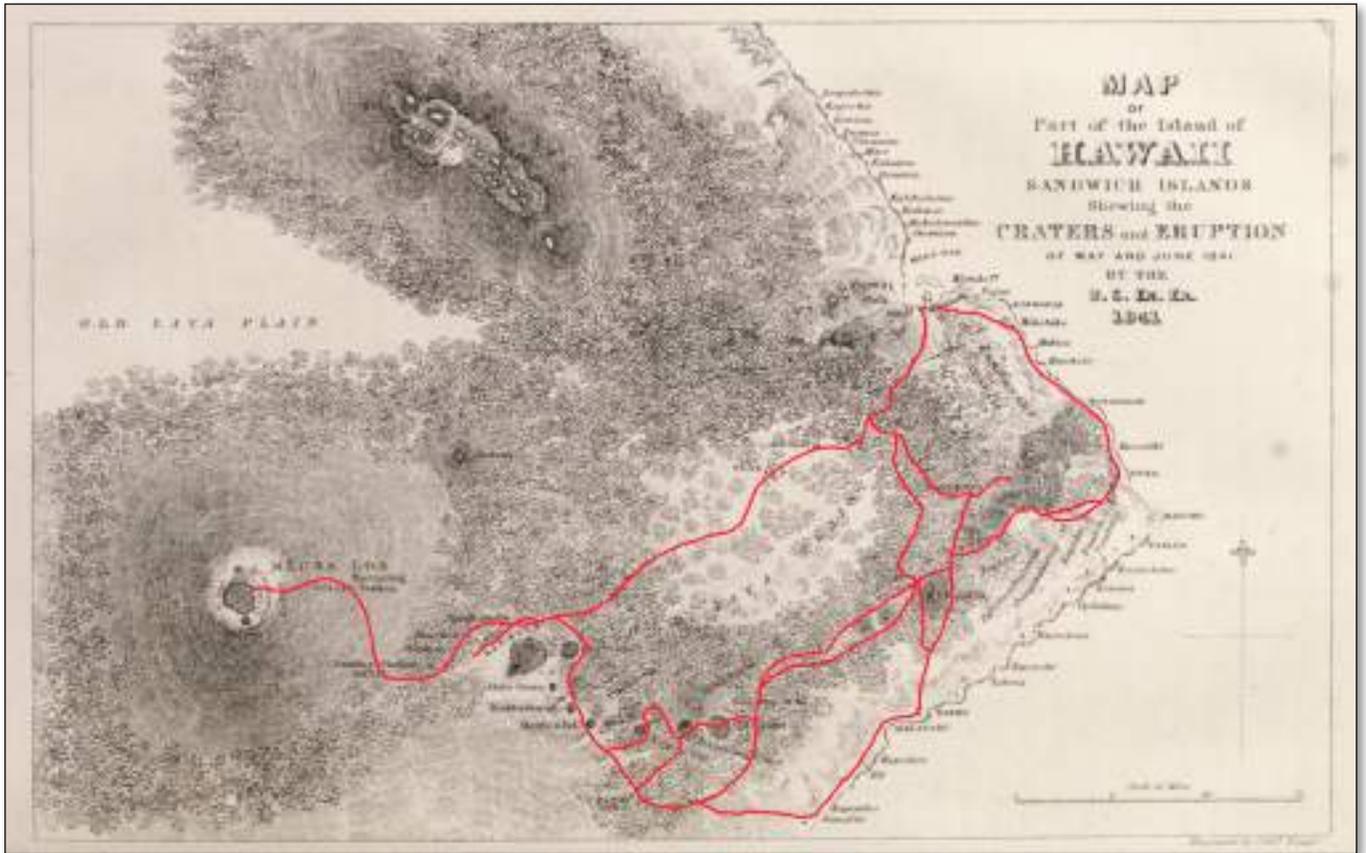


Figure 78: Map of the Puna district from Wilkes’ 1841 Expedition

Kaipo Roberts [personal communication February 1982], long-time resident, at Kahauale‘a, remembers hearing of this trail being actively used into the early 1900’s. Biologist Jim Jacobi, in a bird survey of this area in the late 1970’s, reports [personal communication March 1982] that remnants of this old trail can still be seen in the Kelalua Crater area. (Holmes 1985:19)

Future work regarding this site should include relocating the trail, assessing its condition, and recording and documenting it with GPS, photos, and field maps.

Kaimū Trail

The *mauka* portions of the Kaimū Trail have only been recorded on historic maps (Loebenstein 1895), and have not been relocated or documented in any recent surveys conducted in WKOP or surrounding areas. However, Holmes describes the trail based on a 1922 U.S. Coast and Geodetic Survey map, “another makai-mauka trail begins at the shore in Kaimū, runs due mauka to Heiheiahulu Crater, branching off to the crater’s west,

terminating, it appears, at about 1560' elevation, maybe $\frac{3}{4}$ of a mile inside the Puna Forest Reserve" (Holmes 1985:21).

Future work regarding this site should include relocating the trail, assessing its condition, and recording and documenting it with GPS, photos, and field maps.

Other Trails

Other *mauka* to *makai* trails have also been documented on maps and were likely used to access Wao Kele O Puna forest for gathering, hunting, cultivating plants and other cultural activities (Figure 79-82).

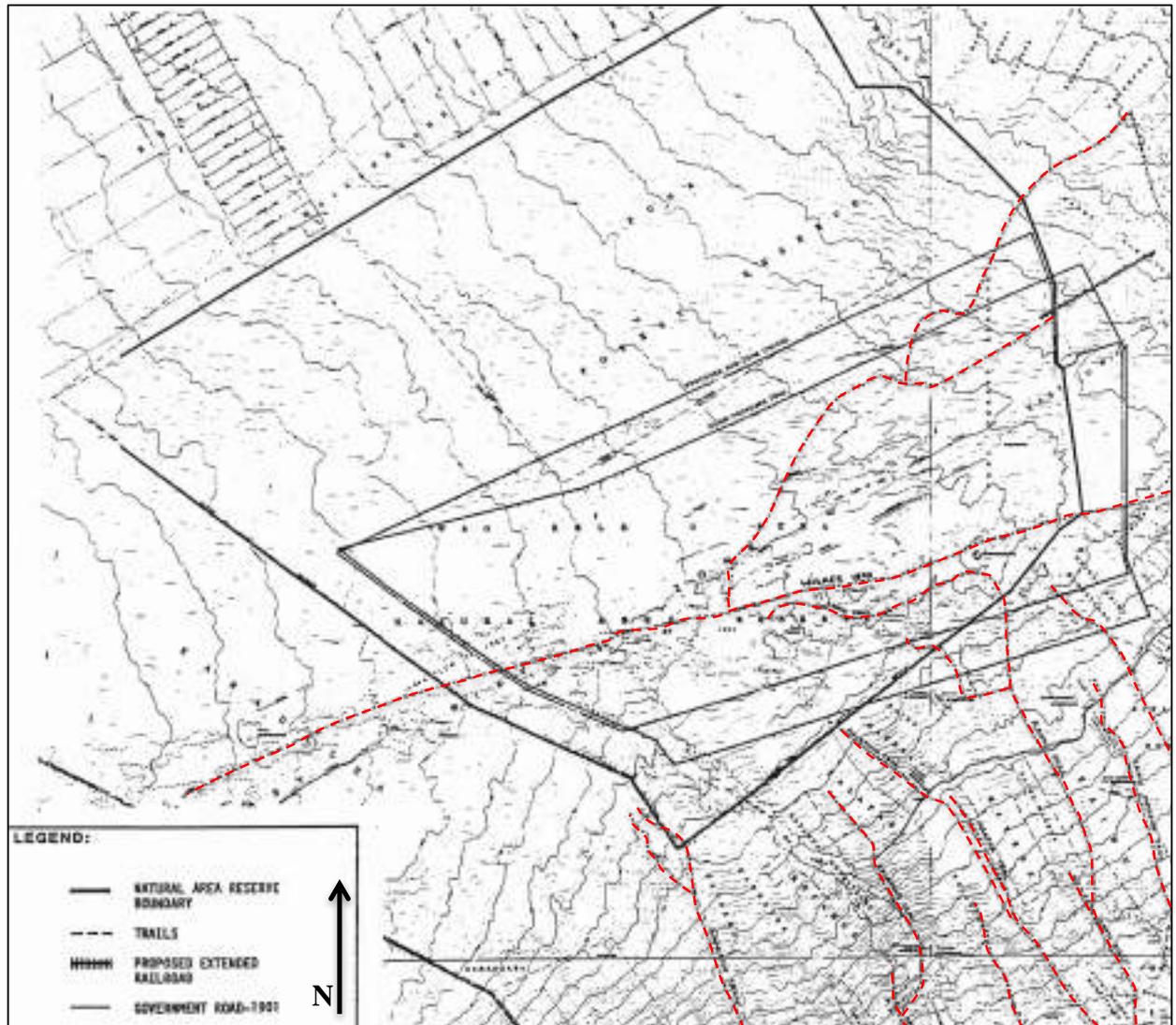


Figure 79. Map showing locations of trails within and around WKOP (adapted from Holmes 1985)

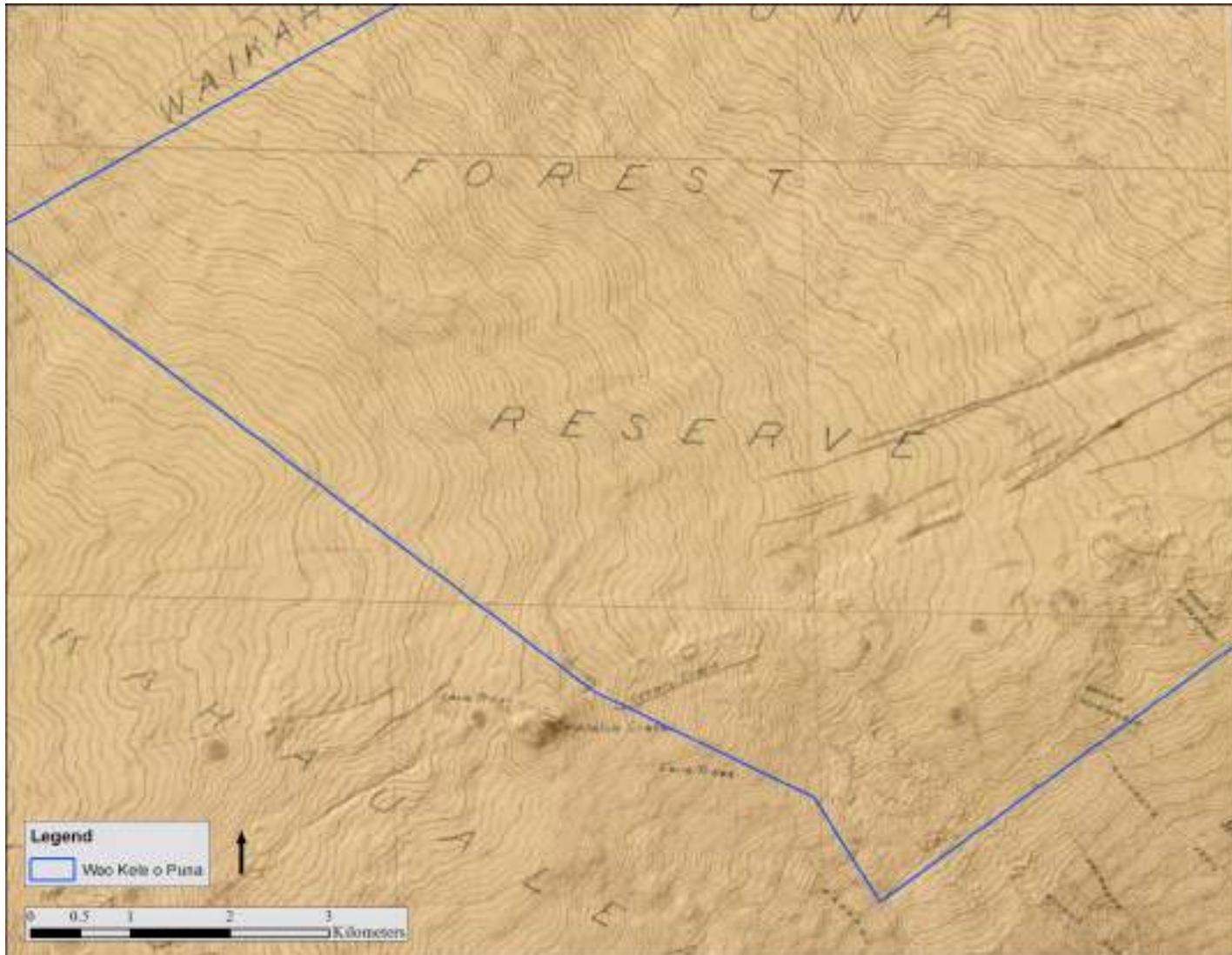


Figure 80. 1922 USGS map showing the southeast boundaries of WKOP and old trails to the south/southeast of the forest.



Figure 81. Close up of the 1922 USGS map, Puna Forest Quadrant, showing 3 trails below the Puna Forest Reserve. One unnamed trail to the furthest south, Kalapana Trail going through Kupahu Homesteads and Kalapana Trail ending up mauka below Kapaka Homesteads (HAVO archives).



Figure 82. Travelers on horseback and mule along the old Hawaiian trail in Kalapana, Puna (Lyman Museum # P74.27.6)

Recorded Lava Tubes Within WKOP

Kīlauea Volcano has created some of the longest lava tubes in the world with the highest single, topographic feature within the WKOP, Pu‘u Heiheiāhulu, lying to the south of the rift and formed as a lava shield with a crater during the 1700s (McEldowney and Stone 1991:3). There are two known major lava tubes within WKOP with a possibility of additional lava tubes that have not been located (Figure 83). The two known lava tubes are in the Kīlauea Volcano “p4” lava flows, aged between 200 and 750 years B.P. (Holcomb 1980; Wolfe and Morris 1996). Based on earlier biological (Howarth 1981, 1983, 1987; Howarth et. al. 1990) and archaeological (Yent 1983) work, a preliminary survey of the two known lava tubes was completed in 1991 (McEldowney and Stone 1991). Contrary to previous surface surveys, the 1991 preliminary survey determined this area to have abundant cultural and biological resources located beneath the surface in lava tubes (Bonk 1988 – 1990; Haun et. al. 1985; Holmes 1982 and 1985; Kennedy 1990; Lamoureaux 1990; Lamoureaux et. al. 1990; McEldowney and Stone 1991).

In 1991 McEldowney and Stone surveyed three major lava tubes or segments of them. The tubes, called “The Southern Tube System,” “The Middle Tube System” and “The Northern Tube System,” are described below.

Northern Lava Tube Complex, SIHP No. 50-10-55-14899

McEldowney and Stone located and mapped two segments in this lava tube complex and found only the lower segment containing evidence of human use. The lower segment was mapped for approximately 2,205 feet and the upper segment was mapped for 500 feet. Three burials and one collapse pile that had been structurally modified were identified in the lower segment.

Northern Tube System: is located just north of the Middle Lava Tube System. The lower end is accessed from Hawaiian Acres, about a mile into the WKOP at about 1,100 ft. elevation. It is a series of sizable tube openings that run diagonally across the northern half of WKOP. The two tube entrances we were able to enter did not lead to segments of any great lengths suggesting that the system, like that of the Southern Tube, is fragmented. The large size of the tube openings indicate that it had been the main channel of a very high volume flow but the flow probably did not run consistently or long enough to create a stable or continuous tube. The surveyed section of this tube contained Hawaiian cultural deposits and cave species.

Approximately eight to nine miles were covered in these efforts which included brief reconnaissance of a forested *kipuka* to the southeast of the tube system. It was clear from the air that *kukui* (*Aleurites moluccana*) tree and *ki* (*Cordyline terminalis*) plants, usually indicators of past Hawaiian use in an area, were prominent in portions of the *kipuka*. No structural features, such as agricultural mounds and walls or residential platforms, were seen in the *kipuka* but the evidence of *kukui* trees and *ki* plants do suggest that the area was probably cultivated, especially in the rocky depressions where soil accumulates.

Of the two tube segments visited, only the lower one (Site 50-10-55-14, 899) contained evidence of human use, which included three burials and a structurally modified collapse pile. Located at an elevation of 1,160 ft., we mapped this segment for a distance of 2,205 ft. The upper segment (1,210 ft. elevation) was a relatively narrow and low tube (3 – 10 ft. high) which we could only map down-slope for 500 ft. No sign of past use was seen in any part of this upper segment. (McEldowney and Stone 1991:7-40)

Middle Lava Tube Complex, SIHP No. 50-10-55-14900

The Middle Lava Tube runs for approximately 9 miles, and about 4.2 miles of the tube was believed to fall within what was then the Campbell Estate property. At least 15 individual burials were found at seven different locations within the section of the tube extending into the Forest Reserve, and McEldowney and Stone suggest there could be more. No grave goods were observed with any of the burials. Fortification walls, stone platforms, rock-lined fire pits, bone and marine shell midden, and scattered charcoal were also located in the tube. Signs of modern access to the tube (and possible looting) were evident as there was a relative absence of artifacts (McEldowney and Stone 1991:20).

Middle Lava Tube: Site 50-10-45-14, 900 can now be shown to run continuously for approximately 10 miles between the elevations of 470 and 1,620

ft.; extends from the lower border of WKOP at about 1,00 ft. elevation for about four miles through the area in a southwest direction. A rich diversity of endemic cave adapted invertebrate species and diverse evidence of Hawaiian use occurs at least intermittently throughout the tube up to the 1,420 ft. contour with the greatest concentration of use found at or adjacent to the tube openings or entrances. This evidence includes walls constructed to block or impede access into the tube or through it, sections of break-down piles that have been leveled to form resting or working surfaces, burials, scatters of shell and bone midden, charcoal from fire hearths or torches, decayed organic debris and variety of rock arrangements that are obviously artificial but whose functions are unclear. Between the entrance at 1,420 ft. and that at 1,620 ft. in elevation, the tube itself does not appear to have been used although the upper level of one opening does contain at least three burials. Exploration beyond the uppermost entrance stopped for lack of time but the large size of the lava tube (40 ft. wide and 30 ft. high) at this point indicates that it probably continues much farther up-slope. About 1,000 ft. beyond this entrance is the end of the 1984 lava flow. Further extension of the lava tube may be buried beneath recent lava. (McEldowney and Stone 1991:7-40)

Southern Lava Tube Complex, SIHP No. 50-10-55-14901 & 50-10-55-14902

The Southern Tube complex consists of four tube segments. Around 0.7 miles of the complex falls within the previous Campbell Estate lands, while the remaining 2.5 miles is located on State lands. The three tube segments found to contain burials were all located on State land. The two larger tube sections contained over 100 individuals between them. This tube appears to have been used exclusively as a burial chamber (McEldowney and Stone 1991:20). The single identified tube section within WKOP contained no human remains or structures. An attempt was made to locate additional entrances within WKOP but vegetation was too dense (McEldowney and Stone 1991:7).

Southern Tube System: instead of a continuous tube system, only four tube segments could be found within a corridor that approximates the hypothesized Southern Tube. Three days spent searching 3.2 miles of the hypothesized tube course from an elevation of 700 to 1,200 feet. About 0.7 miles of this area lies with the Geothermal Sub-Zone (WKOP) where dense vegetation made looking for additional entrances inland unfeasible. Of the four segments, three were primarily used as burial tubes and each was located on State Land adjacent to the sub-zone. No evidence suggests that these burial tubes served any other function and the two larger segments should be considered major burial caves as they contain total of at least 100 individuals. The third segment (Site 50-10-55-14, 903), located between the 930 and 950 ft. contours, was little more than a narrow space surrounding the base of a collapse pile that filled most of the entrance. The badly disturbed bones of a single individual were mixed with the break-down rubble, suggesting that these remains could have been disturbed after burial and that other individuals may be hidden by break-down. Rubble blocked access beyond the entrance in either direction.

The fourth segment, located within the eastern boundary of the Geothermal Sub-Zone (WKOP – NAR), was very small, difficult to access and extended less than 100 ft. before being sealed by lava on the up-slope and down-slope sides. No burials or evidence of human use was noted within it.

The Lower Segment of the Southern Tube (Site 50-10-55-14, 901) stretches for approximately 3,300 ft. between the elevations of 700 and 780 ft. and is broken by three entrances. The uppermost 1,300 ft. of the segment is about 15 – 20 ft. wide and 10 – 15 ft. high while the lower 2,000 ft. of the tube averages 20 ft. in width and 10 ft. in height....We estimate that at least 60 – 80 individuals were buried in this tube segment. Counting the number of individuals is very difficult because most of the human remains are badly decomposed and have been disturbed or mixed by natural processes and possibly some vandalism.

Most of the burials are concentrated in three sections of the tube. The first is the 175 ft. stretch at the uppermost extent of the tube which is 430 ft. from the nearest accessible entrance. The second section includes a 375 ft. stretch above and below the middle of the three entrances. The third concentration begins at the lowest entrance and extends approximately 375 ft. down-slope.

The deteriorated and disturbed condition of the remains also makes it difficult to determine how the burials took place. Numerous burials probably took place during the historic period, particularly in the central concentration in the uppermost elevated passage. No grave goods or artifacts associated with the prehistoric period was noted. The strong representation of historic burials does, however, increase the possibility that lineal descendants of the buried individuals could be traced if this tube segment is ever threatened.

The Upper Segment of the Southern Tube (Site 50-10-55-14, 902) located at an elevation of approximately 930 ft., this tube segment is entered through a small opening in the side of an elongated collapse, which resembles an open trench. It could only be followed down-slope for a distance of 250 ft. and averages 20 – 30 ft. in width and 8 – 10 ft. in height. An estimated 30 – 35 individuals were buried by being placed on the tube floor, on low shelves, within shallow holes in break-down piles. As was the case in the lower segment, estimating the number of burials was difficult because the bones are badly deteriorated or disturbed and some skeletons may have been incomplete when buried. In this segment, there are more instances of individuals being intentionally covered by rock debris, which raises the possibility that some burials remain hidden and the number of burials may be underestimated. More skulls were recognized throughout the segment suggesting that it may not have been looted or impacted as heavily as the lower segment. No historic goods or materials were seen with any of the burials indicating that use of the tube occurred predominately during the prehistoric period.

The tube segment ends in a small chamber where five individuals rest in discrete piles, indicating that they were probably bundle burials. The remains of one individual lies just outside this last chamber. (McEldowney and Stone 1991:7-40)

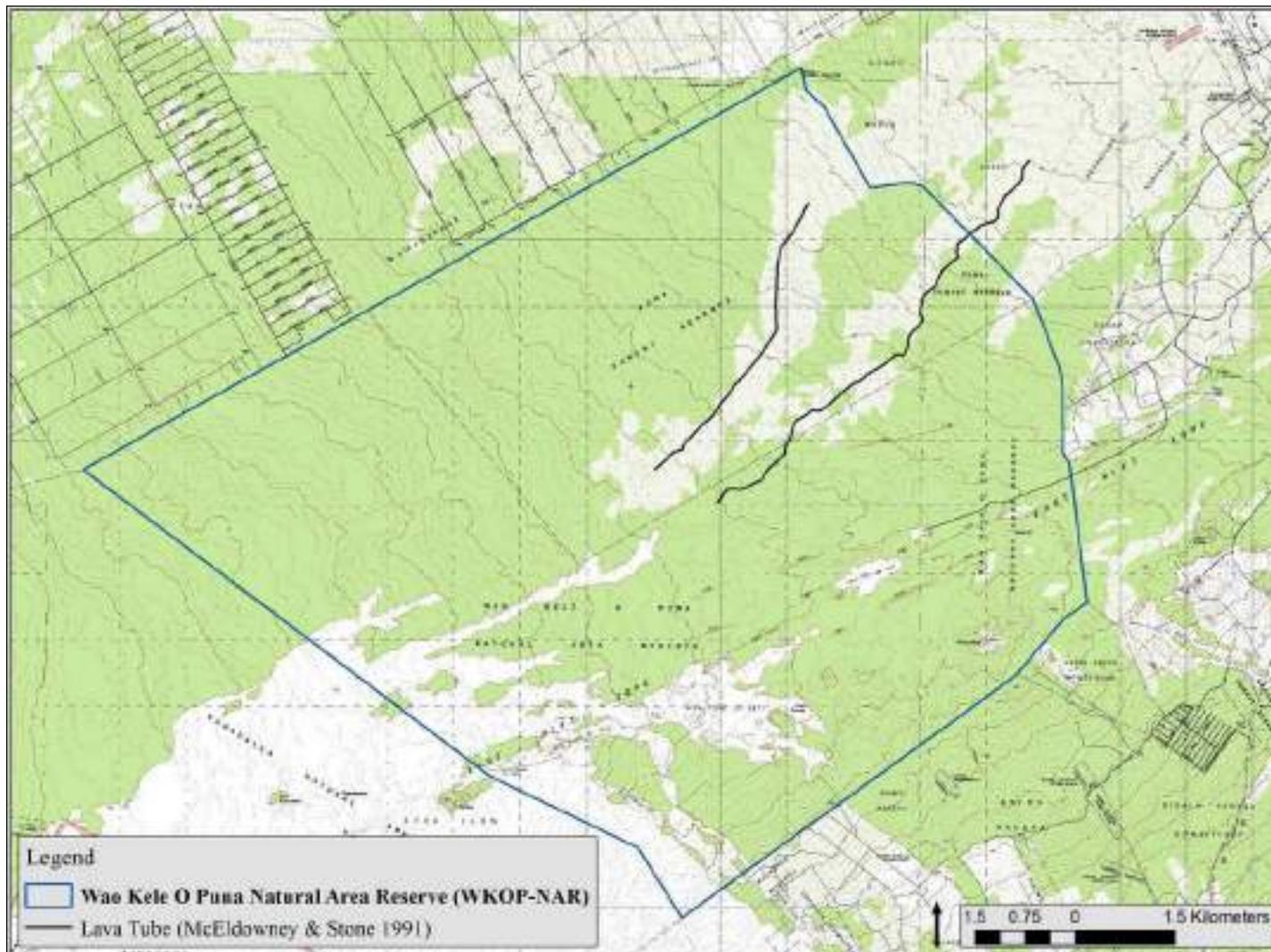


Figure 83. Portions of the Pāhoa North (1997) and Pāhoa South (1994) Quadrangles USGS 7.5-Minute Series Topographic Map, showing locations of two lava tubes within Wao Kele O Puna

Upper Kaimū Cave

The upper Kaimū cave was first recorded by Sweeney et al. in 1995 (Figure 84). During their field survey two sinkholes, which they believed linked into one lava tube, were located south of Pu‘u Heiheiāhulu. Sinkhole A measured 5m southeast to northwest and 2m northeast to southwest. Sinkhole B’s opening measures 1.5m in diameter. Sweeney’s field crew could not access the cave because the floor was 10-15m below the opening. They crew did not record any cultural sites or materials, but noted a high probability that cultural materials, burials, and funerary materials would be found in the cave (Sweeney et al. 1995:107).

Future work regarding this site should include gaining cave access to survey, locate, and document any cultural materials, burials, or funerary objects. Preservation potential for cultural materials in the cave is good, so a survey is recommended for the near future.

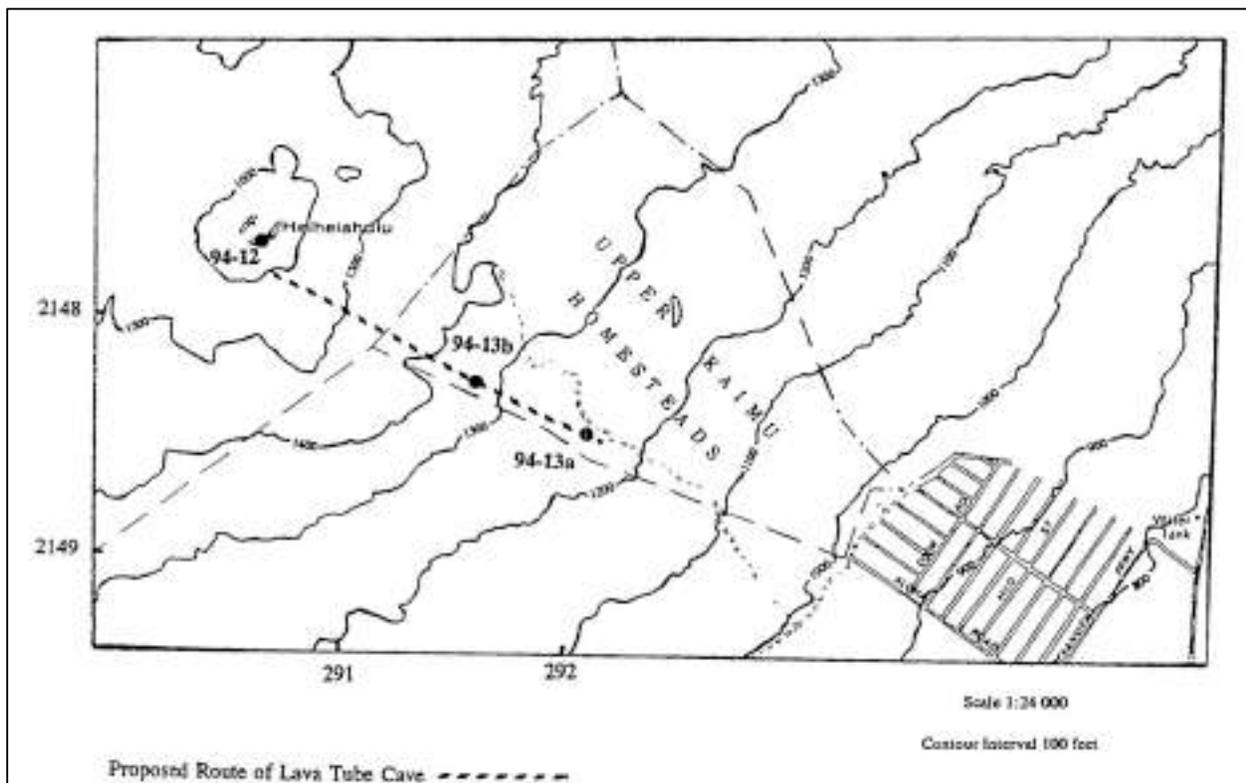


Figure 84. Proposed location of Kaimū Cave and skylights, Sweeney et al. 1995

Other Caves

The only other mention of cave sites in the previous literature is from Holmes (1985). In reviewing the boundary commission testimonies from Kea‘au (an *ahupua‘a* in northern Puna), he found references to other caves (Oliolimanienie and Olioliana) that are likely located in or relatively close to WKOP:

Probably the sites closest to the Puna Forest Reserve are those referred to in Keaau Boundary Testimony. Besides the *kauhale kahi olona*, *olona maker's houses*, *kahale manu*, *birdcatcher's houses*, cultivation areas that Uma Swain, a *kama'aina* and boundary informant for Keaau mentions as proximate to the subject area, he also speaks of several caves. One in particular, *Oliolimanienie*, seems to have been not only very close to the northern boundary, but a refuge cave where, as Swain says, "people used to hide in time of war." He mentions two other large caves as being close by. He also mentions another refuge cave, *Olioliana*, and two other nearby caves "where people used to live." These caves, judging by his coordinates, seem to be located very near the northwestern terminus of the Puna Forest Reserve. To conjecture that there were additional caves within the confines of present day Puna Forest Reserve would not be unreasonable. Their significance, if there were such would likely be minimal - there only use probably being occasional shelter or possibly but not likely burial (because of the distance from regular habitation). (Holmes 1985:18-19)

Pu'u Kauka Kīpuka, SIHP No. 50-10-54-19854

The *kīpuka* located at Pu'u Kauka was first documented by Sweeney et al. in 1995 during their archaeological inventory survey. A plant cultigen site was recorded consisting primarily of *mai'a* as well as *kukui*, *kī*, *hapu'u*, *mamaki*, *'ie'ie* and *kōpiko*. The *mai'a* were located in a ravine between two promontories and the *kukui* were located to the south. The entire dimensions of this area were approximately 2.7 ha, which covered the scattered planting locations.

In 2010, what is thought to be this same *pu'u*, was re-surveyed by OHA WKOP land manager, Cheyenne Perry, and intern Li'ula Mahi. They conducted a vegetation survey of the *kīpuka* and identified all of the plant species located within the *kīpuka*. Also found were a healthy diversity of Native Hawaiian plants, including *'Ōhi'a* (*Metrosideros polymorpha*), *Kōpiko* (*Psychotria hawaiiensis*), *Hame* (*Antidesma platyphyllum*), *Kawa'u* (*Ilex anamola*), *'Olonā* (*Touchardia latifolia*), *Hāpu'u pulu* (*Cibotium glaucum*), *Uluhe* (*Dicranopteris linearis*), *'Ie'ie* (*Freycinetia arborea*), *Pala'ā* (*Sphenomeris chinensis*), *'Ala'alawainui* (*Peperomia Hypolucca*), and *Mai'a iholena* (Figure 85 & 86). In addition, they recorded an abundance of invasive species beginning to establish themselves in this native ecosystem, *Waiāwi* (*Psidium cattleianum*), *Koster's Curse* (*Clidemia hirta*), and *Melastome* (*Melastoma candida*).

Future research at this site could include paleoenvironmental research to learn more about and better understand and appreciate the natural history of the area. Potentially, cultural evidence could also be uncovered through stratified deposits.



Figure 85. *Mai'a* growing in a *pu'u* thought to be Pu'u Kauka. (Perry and Mahi, 2010)



Figure 86. *Olonā* and *mai'a* found in a *pu'u* believed to be Pu'u Kauka (Perry and Mahi, 2010)

Other Forest Planting Areas

Historical research by Holmes (1982 & 1985) notes that traditional agricultural activities, including forest plantings of dryland *kalo* and *mai'a*, likely took place in the southern and

eastern portions of WKOP. Previous archaeological surveys have also documented the presence of cultigens such as *kī*, *‘awa*, *kukui*, and wild *mai‘a* within forested areas (Holmes 1982:10, Bonk 1988, McEldowney and Stone 1991:5). While it is very likely that forest planting sites occurred throughout WKOP, these areas would have little to no surface stone architecture or other archaeological evidence preserved today.

Bird Catching Shelters

The notion that bird catching shelters were or are located in WKOP stems solely from ethnohistorical sources. The first mention of these sites in the Puna Forest Reserve (WKOP) comes from an account by Reverend Coan who recounted: “We were returning from Puna over the highland where, for fifteen miles, there were no inhabitants - Our trail lay through forest and jungle and open fields of wild grasses and rushes. We heard that about midway between the shore and an inland village there was a small grass hut built by bird catchers, but now abandoned. We struck for that and reached it a little before sundown” (Coan 1882:144). It is highly probable that this bird-catcher’s hut was either located within or close to WKOP, given the path and landmarks Coan provided.

Chester Lyman also provided an account and observed these shelters in *mauka* Puna in 1846. He traveled on a trail located to the north of Kahauale‘a about five miles when he came across a “plantation in an unsettled region.” He continued on another five miles, “over an exceedingly rough and jagged path and through a dense miry thicket to a small grass shanty open on one side and half of the two ends and so low that it could only be occupied in a sitting posture” (Lyman 1846:19). The “grass shanty” that Lyman described was likely a bird-catcher’s shelter located in WKOP.

While bird catching shelters were likely constructed of wooden poles and thatched roofs, some of these site may contain small scatters of flaked stone, broken tools, food remains (bone, shell), and fire pits. It is unlikely to find these campsites in the open forest, however, such campsites could still be preserved in caves. Future identification and documentation of these types of sites is possible but very unlikely as these types of huts would not preserve over time due to the harsh environmental elements of the rainforest.

Summary

The majority of historical and archaeological research conducted in and around the current WKOP property describes the area as an isolated and inhospitable rain forest with only sparse human activity. The limited types of activities occurring in the area included resource gathering, plant cultivation, bird catching, transportation trails, temporary habitation, and burials. However, despite these activities occurring in WKOP, most researchers agreed that limited archaeological evidence of these activities exist today. Unlike the wealth of well-preserved cultural sites along the Puna coastline, the forest area was not accessed as frequently and the stone structures built there would be very difficult to locate due to the dense vegetation cover and the wet conditions. Additionally, the activities that did occur in the forest, such as bird catching and planting, were less likely to produce stone or structural remains.

The two types of cultural sites that are most likely to be located in WKOP today are trails and lava tube features such as burials. While most portions of the pre-contact trails would be grown over with thick vegetation, on *a'a* and *pahoehoe* lava flows, the trails could be identified as worn paths, stepping stone paths, lined paths, or cleared paths. Locating campsites along the trails is also probable but highly unlikely. Campsites would contain evidence such as stone artifacts, shell or bone food remains, or fire pits. Burials in forest areas have been identified in two forms -- burials in caves and in stone platforms on cinder cones. Both types of burial features are likely to be uncovered as additional research and surveying occurs within WKOP.

WAO KELE O PUNA AERIAL SURVEY

Wao Kele O Puna Aerial Reconnaissance Survey

Kumupa‘a staff conducted an aerial reconnaissance survey of the Wao Kele O Puna area on September 16, 2013; David Okita of Volcano Helicopters piloted the helicopter used for the survey. The primary purpose of the aerial survey was to relocate cultural sites previously identified on historical maps and/or in earlier archaeological surveys (Figures 87, 93, 94). Methodology for the aerial survey included flying at low altitudes over probable site areas to search, locate, and determine whether cultural sites were present. If no sites were identified, the helicopter moved to another location. If the aerial observation located and identified an archaeological site, staff immediately verified and documented the location of the site with handheld Garmin Rino GPS units, photographed the features, and visually assessed the current conditions of the features.

Table 13. Aerial Survey Sites Identified

Site Name	Description
Pu‘u Heiheiahulu	Pu‘u
Pu‘u Heiheiahulu mounds	Four mounds located on Pu‘u Heiheiahulu
Kaimū Cave 1	Lava tube cave opening
Kaimū Cave 2	Lava tube cave opening
Pu‘u 1	Pu‘u with mai‘a growing in the crater
Pu‘u 2	Pu‘u with mai‘a growing in the crater
Pu‘u 3	Pu‘u with a small patch of <i>lā‘ī</i>

Documented Sites

During the aerial survey, we attempted to relocate four previously documented cultural sites. The first sites we sought to locate were the lava tube sinkholes and skylights of the Middle, Southern, and Northern lava tube cave systems documented by McEldowney and Stone in 1991. We conducted low altitude sweeps of the areas thought to house the lava tube systems. Unfortunately, we were unable to sight or locate any sinkholes or skylight openings. The vegetation growth in these areas was extremely thick which made it difficult to identify any cave openings from our aerial vantage point.

The second site we attempted to relocate was Pu‘u Kauka. Unfortunately, we were not able to relocate Pu‘u Kauka, however, we did locate and identify *mai‘a* plantings in two other craters in the near vicinity (Pu‘u 1 and Pu‘u 2) (Figures 88-91). It was initially thought these *pu‘u* were Pu‘u Kauka, but after further data analysis, it was discovered that they were not located where Pu‘u Kauka was identified in 1995. *Ie‘ie* and *kukui* trees were also observed in the vicinity. The presence of these native cultigens, usually not transported by natural means, strongly suggests that there was previous agricultural use in this area.

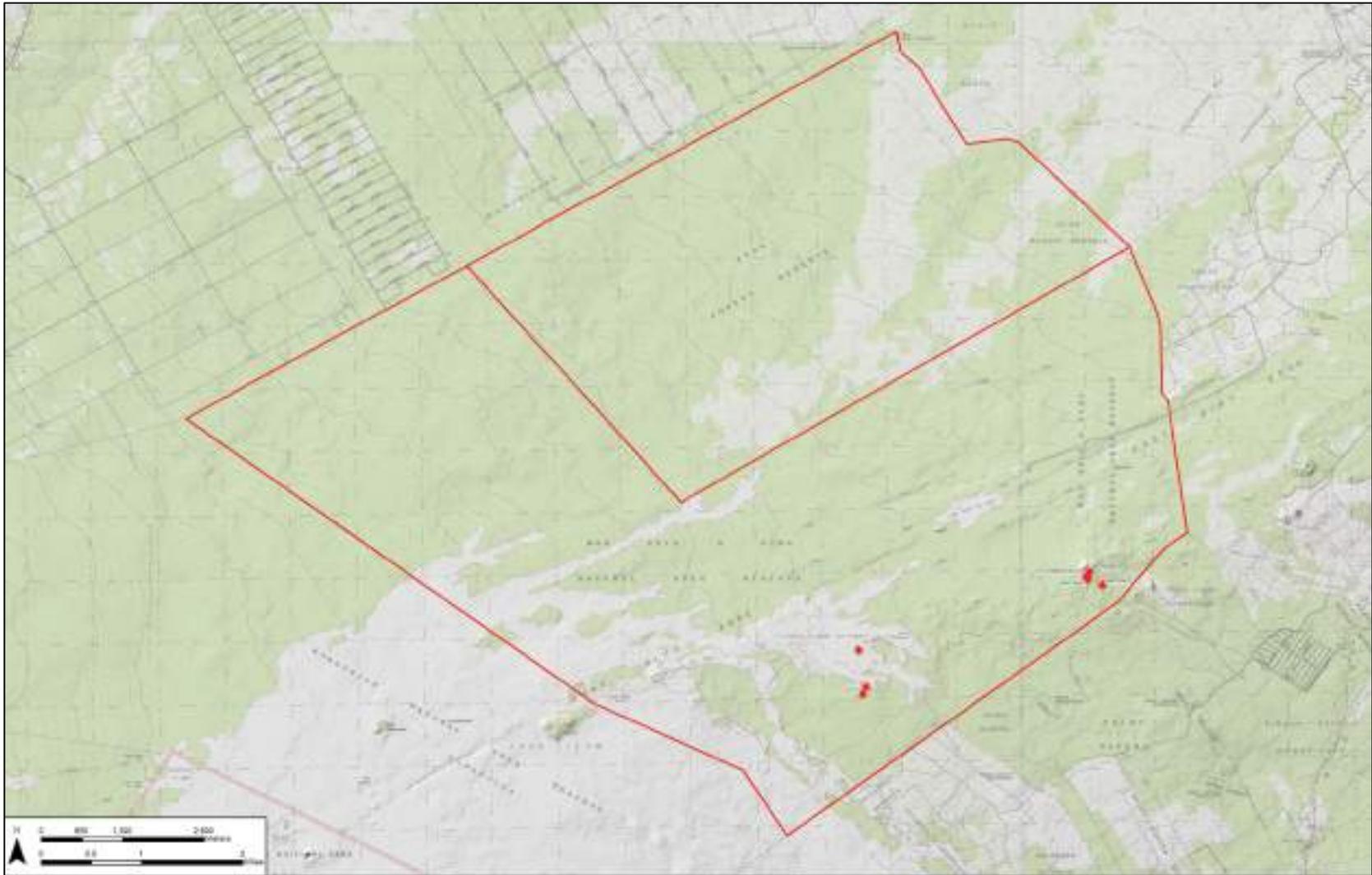


Figure 87 Location of sites within WKOP, documented during the 2013 aerial survey.



Figure 88. Pu'u 1



Figure 89. Close up of Pu'u 1 with *mai'a* growing in the crater.



Figure 90. Pu‘u 2



Figure 91. Close up of Pu‘u 2 with *mai'a* growing in the crater.

Along with identifying Pu‘u 1 and 2, we were also able to identify another *pu‘u* nearby (to the northwest of Pu‘u 1 and 2) that had *lā‘ī* growing along the side of it (Figure 92). The name of this *pu‘u* could not be identified on any historic maps or previous surveys so

it was temporarily named Pu‘u 3.



Figure 92. Pu‘u 3 located the northwest of the Pu‘u 1 and 2. *Lā‘ī* was observed growing on the *pu‘u*.

The fourth site that was located was on the southeast side of Pu‘u Heiheiahulu. Four mounds were identified close to the crater rim (Figures 95-98). The mounds were located among three to four active steam vents. While seven mounds were identified during Sweeney’s survey in 1995, only four of these mounds were visible from the air during the current survey. Thick vegetation growth in the area was likely concealing the mounds. Therefore, it is recommended that a ground survey be conducted on the *pu‘u* to relocate the seven mounds and assess the condition of these features.

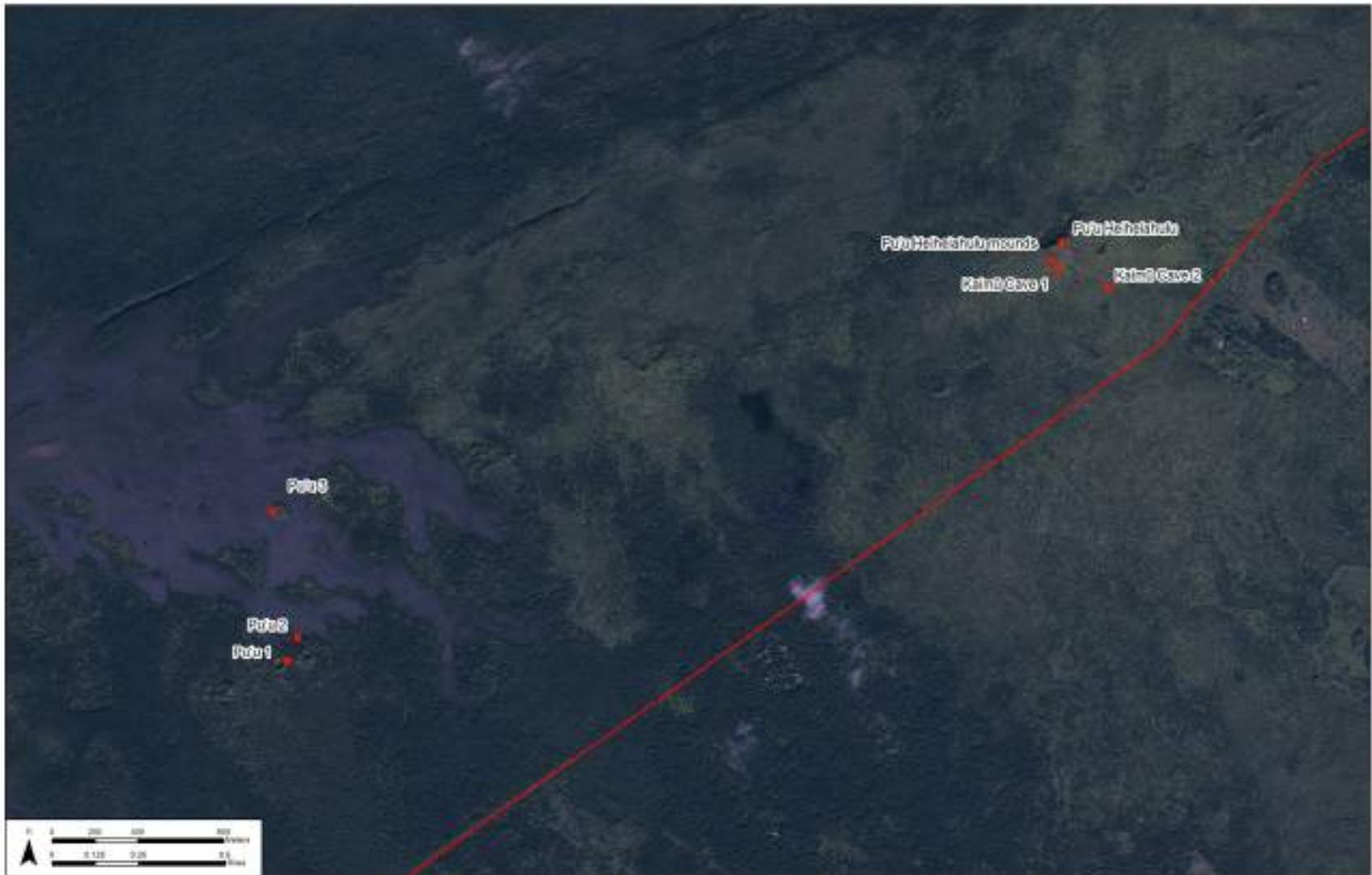


Figure 93. Close up aerial photo of the cultural sites documented during the aerial survey

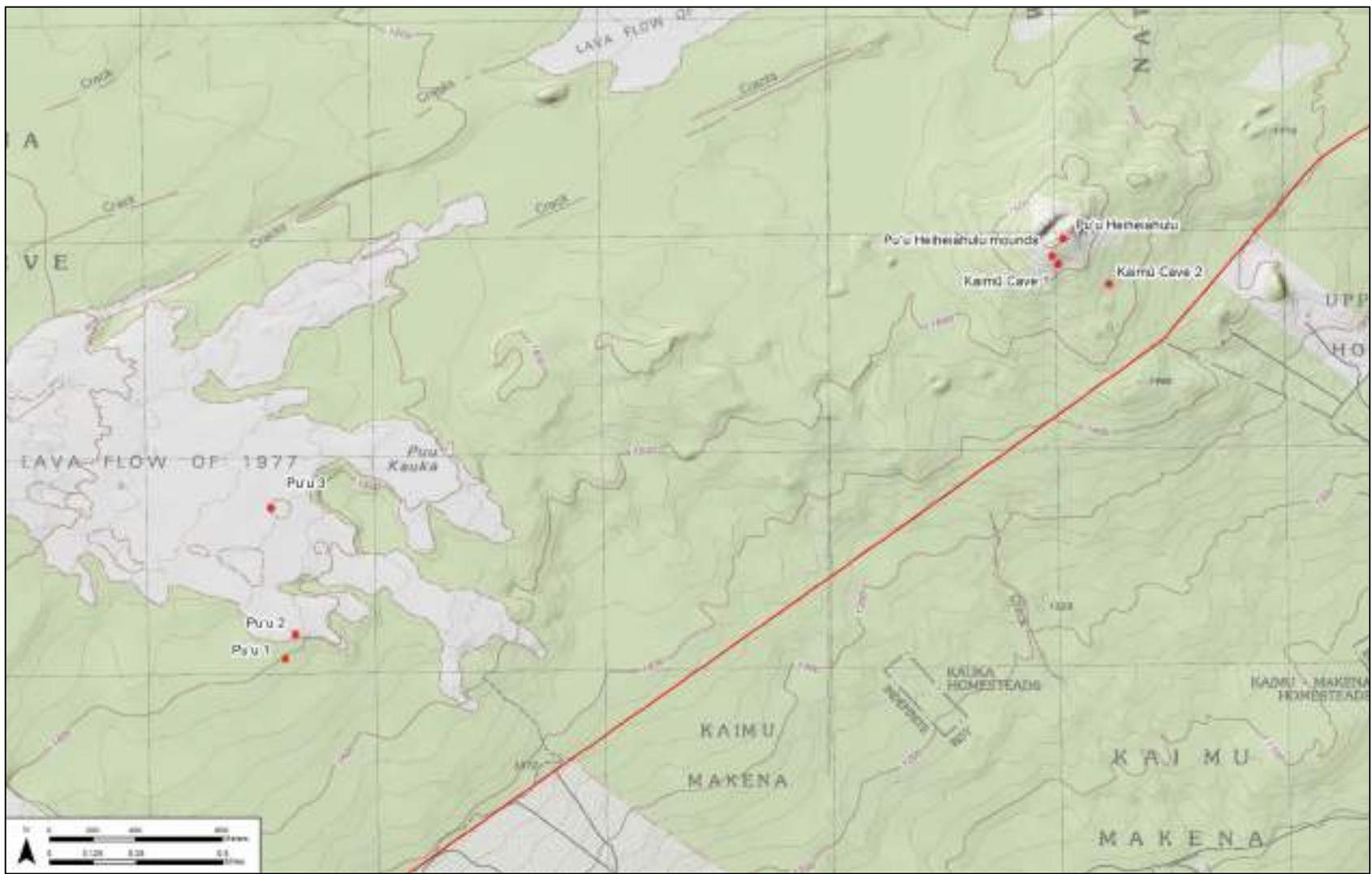


Figure 94. USGS map illustrating the location of the cultural sites documented during the aerial survey



Figure 95. Overview shot of Pu'u Heiheiahulu with 4 mounds located on the SE side of the *pu'u* (circled).



Figure 96. Four mounds located on Pu'u Heiheiahulu



Figure 97. Mounds located amongst active steam vents and overgrown with vegetation (grass and ferns).



Figure 98. One of the mounds with a wooden stick placed in the middle of it.

The final site located was the Kaimū Cave. From the helicopter, we identified four cave openings located to the south of Pu‘u Heiheiāhulu (Figures 99 & 100). We could not distinguish the presence of any cultural features within the cave, but due to the fact that other lava tubes in the area contain a large amount of preserved features, it is highly likely that this cave was used in pre-contact times and that remnants of human activity

are preserved within the cave. A thorough ground survey of this site is strongly recommended.



Figure 99. Cave opening believed to be part of the Kaimū lava tube complex



Figure 100. A skylight opening of the Kaimū Cave.

Summary

While no new sites were located during the helicopter survey, the aerial reconnaissance was still very valuable as it provided the researchers with more familiarization with size, scale, and natural landscape of the project area. This general familiarization is helpful in planning and conducting any future archaeological fieldwork in the area. The helicopter survey also illustrated the advantages of utilizing aerial surveys for this type of landscape. The aerial, birds-eye view that was offered by the helicopter survey was an especially efficient and time-saving method to conduct large scale reconnaissance surveys of the project area. While ground surveys will be required for certain portions of WKOP, the helicopter survey was a necessary first step to obtain a useful overview and an initial familiarization of the area. Finally, the absence of cultural sites identified from our aerial survey corroborates previous findings that most surface cultural sites to be found within the project area are probably sparse in density, difficult to identify, and not well preserved.



Figure 101. The WKOP forest surrounding the former geothermal drilling site.

PREVIOUS INTERVIEWS

Native Hawaiian Ethnographic Study for the Hawai‘i Geothermal Project Proposed for Puna and Southeast Maui (1996)

The study titled, “Native Hawaiian Ethnographic Study for the Hawai‘i Geothermal Project Proposed for Puna and Southeast Maui” was prepared for the U.S. Department of Energy and the Oak Ridge Operations Office in May of 1996. The co-authors of this study include Jon K. Matsuoka, Davianna Pōmaika‘i McGregor, Luciano Minerabi, The Cultural Advocacy Network for Developing Options (CANDO), Pualani Kanahale, Marion Kelley, Noenoe Barney-Cambell, L.D. Trettin, J.W. Saulsbury, The Energy Division, and ORNL Subcontract Managers. This ethnographic study was initiated during the preparation of an environmental impact statement (EIS) for the proposed development of the Hawai‘i Geothermal Project (HGP) in Puna, Hawai‘i and Southeast Maui. The U.S. Department of Energy and State of Hawai‘i decided to no longer pursue the HGP and completed this ethnographic study for the EIS project archives.

The focus of this study was to identify and thoroughly assess traditional resources, cultural properties, and significant sites of Native Hawaiians with regard to the potential effects of the HGP in the proposed project areas (Figure 102). Those who conducted this study sought to gather information about Native Hawaiian resources in relation to ecological (atmospheric/terrestrial/aquatic) impacts, subsistence impacts, cultural impacts, and spiritual/religious impacts. In turn, this study resulted in a valuable compilation of Hawaiian knowledge about the district of Puna and Southeast Maui.

The following information was gathered from 45 interviews that were conducted with Native Hawaiian informants who have ancestral ties to Puna and those who are knowledgeable about this district. Direct quotes from the original summary of these interviews are utilized below to rid the information of misinterpretation. It is important to note that although the summary is written in past tense, it does not imply that these traditions no longer exist. The main themes presented in the interview data that relate to Wao Kele O Puna include: principals of subsistence, spiritual beliefs, the goddess Pele, trails and access, forest gathering, hunting, cultivation, and Hawaiian rights. The summarized information about these topics are given below.

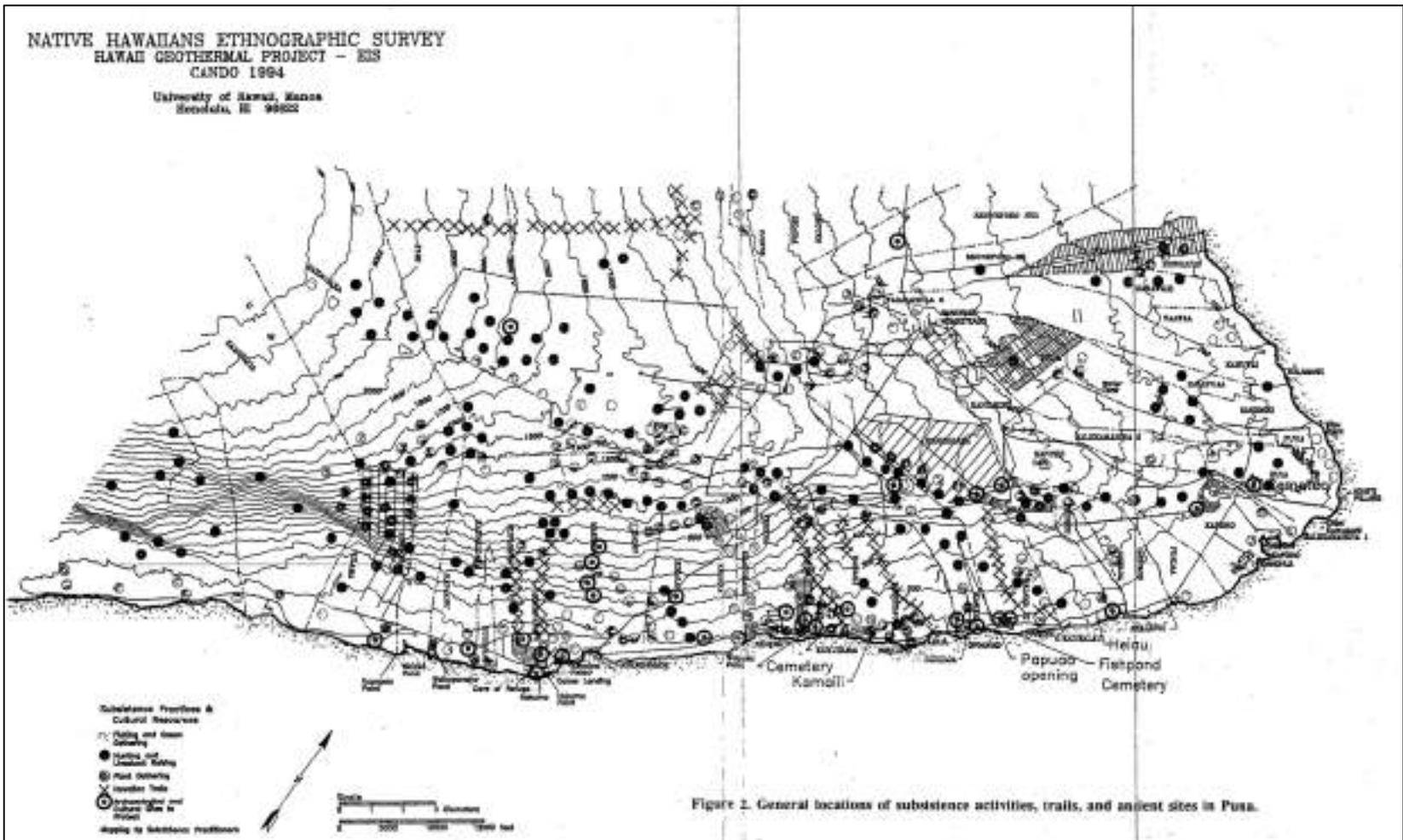


Figure 102. Map showing the general locations of subsistence activities, trails, and ancient sites in Puna from 1990 CANDO study

Principals of Subsistence

Many informants from the district of Puna describe traditional subsistence activities as an essential part of their lifestyle. These activities were guided by the knowledge of many principal beliefs that were passed down from generation to generation. In addition, this knowledge also perpetuated an effective and respectful relationship between people and the land. The summary of information regarding subsistence activities in the district of Puna is as follows:

Several principles and aspects of subsistence were discussed which served to regulate resources and reinforce family and community cohesion. A critical guiding principle was to never take more of a resource than was needed. Families engaged in subsistence when supplies (fish, meat) were running low or for special occasions (e.g., *lū'au*, graduations). The amounts taken depended upon family size. Obviously, a larger family required a larger quantity of a resource. The bulk of the food consumed by families came from some form of subsistence, although staples such as rice and other miscellaneous food items had to be purchased in Hilo or other nearby towns. The traditional diet was comprised of carbohydrates which came from the cultivation of *kalo* (taro), *'uala* (sweet potato), and *'ulu* (breadfruit), and sources of protein which came from and seafood, pigs, goats, and wild cows. Wild donkeys were also hunted at one time.

The availability of certain varieties or species of flora and fauna varied according to seasons or cycles. For example, certain species of fish (*'ū'ū*, *ahi*) were more abundant during the summer months, the pig population was cyclical according to roaming and reproductive patterns, and *maile* underwent periods of dormancy and regrowth according to the cycle of rain. Traditionally, when resources in a particular area dwindled because of overuse, that area was *kapu* or restricted to further usage or harvesting in order to allow regeneration.

The resources were always abundant and readily accessible to those who possessed the knowledge about their location and skills required to obtain them. Knowledge about subsistence was passed down intergenerationally. Subsistence areas were understood in terms of boundaries and used by *'ohana* who lived within close proximity to an area. These *'ohana* were traditional stewards who had jurisdiction and inalienable rights in that particular resource domain. Others who wished to use the area exercised good manners and respect by asking their permission. Respect for other peoples' subsistence domains appeared to be more prevalent among hunters and gatherers. Fishermen, the other hand, generally said they traveled the coastline in search of fish and other ocean resources. If one stop along the coast did not furnish a catch, they would move to the next place. Some informants, however, who lived along the ocean said that they watched for trespassers and warded off fishermen who entered their

property without permission.

Traditional knowledge regarding techniques used for obtaining resources was based on an intimate understanding of the behaviors and predilections of animals, fish, and plants. Hawaiians were taught by their elders how to read the natural conditions (e.g. clouds, moon, water, animal behavior) to determine the best times to go fishing. The life cycle of mountain plants were also correlated to particular ocean conditions (e.g. *wiliwili* in bloom determined that sharks were feeding in near shore waters).

Some informants subsisted according to traditional protocols that were tied to a “right” state of mind or spirit that placed them on a plane that was acceptable to the spirits and increased the potency of the resource. One informant stated:

When I pick flowers or medicine, I take the knowledge that my father taught me. What hand to pick with, the whole process of knowing. There’s a oneness – the whole mind and body has to be centered on the medicine and how its gonna be used. You cannot think about anything else. It opens the channel, what you give out to that source. Be focused only on one thing, even making *leis* is the same concept. The whole time, while picking flowers, I was thinking about it...that’s how my ancestors did it. That spiritualness is carried on from generation to generation.

Subsistence was an activity that bonded ‘*ohana* and communities. The activity required collective action and resulted in mutual economic gain. Subsistence served as a basis for sharing, gift giving, and trade. Informants described a process where, after a successful hunting or fishing expedition, the young men would make stops at the homes of family or friends, dropping off meat or fish along the way. By the time they reached home, they had only enough to feed their immediate family. Older people who were unable to engage in strenuous subsistence activities were especially reliant upon this process of communal sharing. In earlier years, they were the benefactors in the same process. One older respondent said that he taught his children how to hunt and fish and now they supply him with all that he needs.

Most of the informants we talked to expressed concerns about the decline in subsistence resources for reasons related to population growth in Puna, the onslaught of newcomers who violated traditional conservation practices, and the destruction of natural ecosystems caused by housing developments and clearing the forest for agriculture (e.g., papayas). The diminishment of natural ecosystems and resources confined Hawaiians to smaller areas for subsisting, increased competition and placed a higher premium on the resources, and contributed to a general attitude described as “I better take all I can because the next guy is gonna take it all.” One person explained the process:

When new people came in, some were hippies, some were regular *haoles*. They learned how to subsist because we taught them how. That's the *aloha* spirit. We gave to them because we were taught to. We respected them, but they didn't respect us. They used and abused us. The same thing happened with hunting. People came in and shot the pig and left it. It hurt us very much because that is our food.

Many of the informants discussed differences between Hawaiian and western culture. For example, one informant said that living off of the land was the Hawaiian way of life. Westerners, on the other hand, tend to destroy their natural environment and have to seek meaning in life by returning to nature. She cited the example of Outward Bound programs that used to be held at the National Park. In this program, young people had to prove themselves by surviving the elements of nature for one night. To Hawaiians, nature was not perceived as a threat but as a provider, and these programs were based a foreign understanding of how humans relate to the environment.

The commercialization of resources was cited as a primary cause for the decline in the availability of resources. Both locals from outside of Puna and newcomers were held accountable for taking too much and making a profit from sales, which came at the expense of long-time subsistence practitioners.

Many Hawaiians also described how sites or areas (e.g., steam bath, beaches) had been taken over by hippies or Rastafarians who had recently moved into the district and were generally insensitive to the cultural significance of traditional places. Some informants expressed a strong desire to keep sacred sites secret because of fears that the newcomers would misuse them and apply wrong interpretations to their meaning.

Those who engaged in subsistence never talked openly about their plans prior to going. Hawaiians believed that everything around them in nature had the ability to hear and would therefore warn the intended victims (e.g., pig, fish). To talk openly in planning a subsistence activity would bring bad luck. Even when driving along the coastline during a reconnaissance, informants said they never verbalized to others in their group when they saw a place that might be good for gathering or fishing. They would return during the night or at a good tide to try their luck. Hawaiians would use code words such as "*holoholo*" which meant they were going fishing or hunting. Other beliefs concerning behaviors that would bring bad luck included taking *mai'a* (banana) fishing, to not let the first catch go (i.e., one should return the first fish caught to the ocean guardians), taking more than was needed, and not expressing gratitude to the deities after a successful subsistence expedition. It was believed that the deities loathed those who appeared to be greedy or ungrateful and punished them by ensuring that their successive activities would end in failure.

Spiritual Beliefs

Many traditional Hawaiian beliefs persisted throughout Puna despite the introduction of other religions. Majority of informants in the survey identified with the Christian faith, but also upheld certain beliefs that were consistent with Hawaiian spirituality. It was noted that although most informants regularly attended Christian church, they also prayed to Hawaiian deities. For example, many informants prayed for success in subsistence activities, or asked permission of deities to enter and gather resources from their domain. Provided below is the summary of informant knowledge regarding Hawaiian spiritual beliefs.

With a few exceptions, all of the informants in our survey said that they believed in and respected Pele. Natural elements that were considered manifestations of the deities included: *Moana* (ocean), *Lā* (sun), *Ua* (rain), *‘Ao* (clouds), and *Honua* (land). Prayer to the deities was used to protect them from the elements and help them when they were lost or stranded. The concept of reciprocity was an important part of this general belief system. The land or *‘āina* was the provider, and the tenants who were beneficiaries of these resources were obliged to “*mālama*” or take care of the land. On some occasions, users would offer chants, “*ho‘okupu*,” or a symbolic offering to pay respect to the deities; or in other cases, they would clean an area or even encourage the growth of a wild resource (e.g., *maile*) by providing food and water to insure its continued health and regeneration.

Some informants expressed maintaining a relationship through prayer or direct interactions with their *‘aumakua* or ancestral god. These family gods were long-departed ancestors who offered protection and assistance to Hawaiian families in Puna. The *‘aumakua* took the form of animals, plants, or even inanimate objects (e.g., rocks). The *‘aumakua* that were identified by informants in our survey included the *manō* (shark), *mo‘o* (lizard), and *pueo* (owl). Family members were expected to learn their *‘aumakua*, their functions, dwellings, and “*kino lau*” or different form. An *‘aumakua* had the ability to change from an animal to a corresponding plant form. There were noted associations between plant and animal forms, which were different attributes of the same life force.

Other supernatural beliefs that were expressed by informants concerned the night marchers who were ancestral ghosts that frequented the old Hawaiian trails in Puna. Night marchers were generally encountered at night as a procession of torch bearing spirits accompanied by the sound of drums or music. Those that happened upon them had to jump off the trail and hide or bury their face in the ground to avoid being hurt or killed. If you were recognized by a night marcher who identified you as family, you were spared. One informant mentioned that when he would go night fishing in an area now within Volcano National Park, they would see a series of torchlights along the coastline, although they knew they were the

only people camping in the area.

There were other spirits described that were devious and intended to do harm to the unwary. There were spirits in the forest that called your name and tricked you into following them. If you followed them you would get lost. For this reason, Hawaiians were taught to never call each other in the forest. Other spirits or ghosts would roam around people's yards with the intention of causing them harm. Some informants said they would throw salt around their yards to ward off these evil spirits.

The Goddess Pele

Pele is renowned throughout Hawai'i as the goddess of the volcano. References to Pele were frequently made during the interview process. Informants varied in their beliefs toward the goddess. Some actively worshipped her, while others had no confidence in her at all. The following is the summary of informant knowledge concerning the goddess Pele.

Some informants believed that transgressions against Pele would lead to punishment. For many, the force and spirit of Pele was undeniable because it was so visible through the frequent volcanic eruptions in the area. There were many stories about Pele that were shared by informants who related direct or secondhand experiences. One informant shared:

When the 1977 flow came, our house is here (shows on map). There's people that drove by and when they came close to the church they saw, right by the end of the road, a lady who was dressed in red. They asked her if she needed a ride. She said no. She lives just on the mountain. At this time it was all forest. As they drove and looked back in the mirror she wasn't there. When they came to the church, they looked up and it [lava] was flowing. They saw the lady walking on the lava. They got excited - told everyone in the village.

Pele was also a deity that many gatherers and hunters acknowledged before entering the forest and thanked after a successful expedition. Some reported taking offerings of food into the forest for Pele. Her spirit was there to protect and nurture those who demonstrated respect for her, or possibly harm those who showed disrespect or acted inappropriately. Some believed that the lava flows represented her way of telling people that they were not properly caring for the land. A few informants believed that her "taking" of Queen's Bath was the result of too many people going there to use it and not giving anything back. If people did not *mālama* the *'āina*, then Pele had a way of cleansing it by restoring it to its most primal form.

Trails and Access

Informants made reference to several trails within the Puna district that extend from the mountain area to the coastline. These trails were described as access trails that allowed people to partake in subsistence activities or travel to recreational areas. The following provides the summary of information regarding the trails of Puna.

One trail was said to begin in the west end of the district and extend all the way to Hilo. In the old days, residents would ride horses back and forth to get supplies. Other trails that ran from east to west were generally hunting trails. Although numerous trails were identified by informants on the map, very few were referred to by an exact name (many were referred to by the *ahupua'a* name). One exception was the Mālama Trail. A couple of informants described it as starting by the crater in Kapoho and running to the ocean. The older people used it to go to the beach. Although some of the trails apparently crossed over privately owned lands, access to hunting and gathering areas was not identified as a problem. A common way of accessing an area was to use a four-wheel drive vehicle to get to a particular point on a road, and then hiking in the rest of the way. Many trails, however, were not large enough to accommodate vehicles.

Forest Gathering

According to informants, Puna was renowned throughout the Hawaiian Islands as a special gathering place for flora and fauna, especially for *hula hālau*. The plants in Puna were highly valued because of their colors, shapes, and fragrance, and because they grew in an environment fed by unique natural and spiritual elements. The following summary relates to gathering practices within the district of Puna.

Plant gathering occurred throughout the year, although, some species had cyclical qualities regarding dormancy and regrowth. *Maile* had periods of regrowth according to the rains; yet if one picked its leaves throughout the year it would continue to provide new growth. It was important to not pick all of leaves so as to not kill the vine. The various fruits were gathered seasonally according to when they ripened. Some respondents reported that they altered existing environmental conditions in order to create a habitat that was ideal for a particular plant to grow. For example, one respondent reported that *maile* thrived in wet places where it was not constrained by competing plants and he encouraged *maile* growth by clearing away other plants.

The gathering of plants served many important cultural purposes. Plants were consumed for food and medicine (e.g., the bark of the root of the *uhaloa* was used for sore throat), used as tools and building materials, art, and adornments. Informants generally had distinct areas or secret places where they gathered plants; others who wished to venture into these areas were obliged to ask permission.

Maile was often picked for occasions like birthday parties or graduations. One had to journey to the higher regions because it didn't commonly grow in the lower elevations and more people were picking it commercially. It was picked in numerous areas including the Kaimu forest and in Wao Kele O Puna. One informant wasn't sure how far she ventured into Wao Kele O Puna because there weren't any boundary markers, but knew she was there because of the density of the forest and changes in temperature. Some of the pickers said that they often gathered plants such as *maile* or *lama* because of requests by other Hawaiians from outside Puna who wanted to use it for decorations, festivals, temples, or "ho'okupu" (offering).

Herbs were once gathered from all along the sea coast of Puna. One informant mentioned that they were no longer as plentiful because of recent land developments, but they were still plentiful in the forest reserve area. Those who engaged in *lā'au lapa'au* (herbal medicine) were dependent upon a healthy forest where they could gather native herbs and plants. They reported that the plants gathered in Wao Kele O Puna were essential to their practice and possessed a quality and potency unlike that found anywhere else.

Large tracts of forest had vanished under recent lava flows or been plowed over in favor of subdivision development. The disappearance of forested areas or the loss of access to traditional grounds placed a higher value on remaining areas. Those displaced by the loss of plant resources, who were seeking new areas, and the intrusion of those from outside Puna placed greater strains on not only the resource but on traditional protocols regarding an understanding and respect for tenant rights. Wild animals were also blamed by some gatherers for some of the damage. Pigs were not known to eat *maile* but sometimes dug them up by the roots. Wild cows ate the *maile* when they were desperate but became ill because of the sticky residue. Many informants suggested that hunting was the most viable means to control the wild animal population and maintain a healthy rainforest.

The types of forest resources that informants reported gathering included:

<i>'A'ali'i</i>	<i>'Ie'ie</i>	<i>Niu</i>
<i>Palapalai</i>	<i>'Awa Kolo</i>	<i>Laua'e</i>
<i>Noni</i>	<i>Pink 'Ōpiko</i>	<i>Forest Flowers</i>
<i>Lauhala</i>	<i>'Ōhi'a Lehua</i>	<i>True Koli</i>
<i>Guava</i>	<i>Maile</i>	<i>Orange</i>
<i>Hāpu'u</i>	<i>Mamake</i>	<i>Pa'iniu</i>
<i>Ko'oko'olau</i>	<i>Mango</i>	<i>Pala'ā</i>

Hunting

According to informants, the hunting grounds of Puna residents expanded from Hawai'i Volcanoes National Park to the coastline of Nānāwale. The animals that were often hunted included wild pigs, wild goats, and cows. Some informants also mentioned hunting wild donkeys at one point in time. All of these animals were introduced to Hawai'i and became feral either by escaping domestication or by being purposely released. The summary of informant knowledge pertaining to hunting practices in Puna is provided below.

Hunting occurred year round and was the primary means for obtaining meat for families. Although there were reports of some hunters selling pig meat commercially, the threat of trichinosis dissuaded many from doing so.

Some informants reported going hunting as often as every day or every other day. They were responsible for and expected to provide meat for their *'ohana* or extended family. One or two young men would hunt pigs and divide the meat up between the *'ohana*. Some hunters also mentioned that they shared the meat with neighbors and other community residents who were older and unable to hunt. Sharing the meat was tied to a belief that if one were generous with their catch, the supply would always be there. Even if the catch was low, the hunters still shared with others. Greed was believed to be punishable by poor hunting or bad luck. When the hunt was successful, the hunters generally thanked the *'āina*.

The methods used in hunting varied from guns to knife and dogs. Larger animals such as wild cows, which were considered dangerous, needed to be shot and killed. Many pig hunters used a method of trained dogs who chased and pinned down a pig. The dogs were trained to catch the pig and only attack the head and rear of the animal so as not to damage the meat. The hunter would follow the dogs and stab the immobilized pig in the heart. This method was an efficient way to hunt although it took a toll on the dogs. Hunting dogs were often injured by pigs, lost in the fissures or in the dense rainforest. Some hunters said that they spent days looking for a lost dog.

Animals were cleaned and dressed in the area where they were killed. In most cases, the meat was packed up and loaded onto the hunters back who then had to hike a long distance to a four-wheel drive vehicle. Because of the heavy load, hunters were cautious to not kill large animals (wild cows) or more than they could carry a long distance unless there were several men.

The meat was prepared a variety of ways. One of the most common preparation methods was smoking the meat which was also thought to be a way to kill trichinosis. Some hunters had smoke houses in the back of

their property and they used wood gathered from the forest or lava flows to smoke their meat in a process that took several hours. Another traditional method was to use *imu* or underground ovens. The *imu* was comprised of hot rocks (heated by fire for 2-3 hours) placed in a pit and covered with crushed banana stumps; the pig was placed on top of the stumps, covered with ti and banana leaves, and cooked for several hours depending on the size of the pig.

The pigs were said to roam in packs throughout the Puna district foraging different areas and evading hunters. Hunting was at times sporadic because the pigs migrated to places outside of one's traditional hunting area. In such cases, hunters waited until the pigs moved into their hunting domain or often captured live pigs, raised them to a desired size, and slaughtered them for food. Some hunters claimed that when the *waiwī* (small, guava-like fruit) ripened, the pigs were found in areas where they grew. During the dry season, the pigs stayed near the watering holes.

Although only a few hunters ventured into the area of Wao Kele O Puna, it was considered an essential place for animals, especially pigs, because it served as a refuge and place to bear their young. Consistent with the Hawaiian concept of refuge, pigs and other organisms that were being pursued required time and safe haven to rest and rejuvenate. Because the upper Wao Kele O Puna was remote and difficult to access, pigs were offered safety from hunters. One hunter described the arduous hike through the lower part of the district as "walking over soft, brittle lava and dropping one foot with every step to get to the place where the pigs stayed." For many, hunting in the area wasn't worth the effort because pigs were available in other places. But some respondents stated that in order to ensure a future supply of pigs, this area that was seen as an essential breeding grounds for pigs needed protection from development.

Cultivation

Many informants who cultivated plants for food and material often placed these plants around their houses or on areas of land that required traveling long distances to. Some would hike to these cultivated areas, while others would use four-wheel drive vehicles. The types of plants that were grown include: *kalo* (taro), *'uala* (sweet potato), *mai'a* (banana), *'ulu* (breadfruit), *kukui* (candlenut tree), *niu* (coconut), papaya, *lauhala* (screw pine), *noni* (Indian mulberry), and ti. The following summary provides information about cultivation practices in Puna.

Some respondents used tracts of land they owned inside Kamā'ili to cultivate dry-land *kalo*. The planting, harvesting, and preparing of *kalo* was a family effort and a way to provide families with *poi*. Each family would go home with a generous supply of fresh *poi* which was becoming more expensive in the stores. Another reason for growing *kalo* was to teach younger *'ohana* members about traditional cultivation techniques of

Hawaiians.

Traditionally, the *kalo* was a staple in the Hawaiian diet and symbolic of the culture. For example, from the corm of the plant, which represented the parent, grew offshoots which represented children. The entire plant system represented the *'ohana*. The *kalo* grown today are descendants of those brought over by the progenitors of the Hawaiian race. The propagation of the plant is symbolic of how Hawaiians came to the islands and spread over the land.

The entire *kalo* plant furnished food. The root was cleaned and baked in the *imu* or boiled, peeled, and sliced; or it was made into *poi* using a *papa ku'i 'ai* (wooden trough) and pounded with a *pōhaku ku'i 'ai* (stone pestle). *Kūlolo* was a pudding made of grated raw *kalo* and the juice from grated coconut meat. The leaves of the *kalo* were wrapped around meat or fish, covered with ti leaves, tied with string, and steamed to make *laulau*.

'Ulu was eaten in much the same way. It was cooked in the *imu*, peeled and sliced, or mashed into a gruel-like paste. *'Uala* was often baked in the *imu*, peeled, mashed, and mixed with coconut milk.

Ti was a plant that had multiple uses and was of great value to Hawaiians. The leaves were used to package food for travel, to contain and buffer food during cooking, and to made into skirts for *hula*. The ti was considered sacred to the god Lono. It was a symbol of high rank or divine power and was often worn around the neck of the *kahuna* (priest). It was considered a charm against evil spirits. Because of the superstition that those partaking of cooked *'ōpelu* would otherwise suffer from a rash, some ti leaves were customarily tied around the tail of the fish. Ti was also used to wrap *ho'okupu* which was delivered as offering to various gods or deities.

The *kukui* was used in many different ways. The oil from the *kukui* was used in candles to illuminate houses and used as torches for fishing and other nighttime activity in the olden days. The nut was roasted and mixed with sea salt to make a relish. The sap had medicinal qualities when rubbed over the infected or cut areas of the mouth and other parts of the body. The shells were used as necklaces and other adornments.

Much of the good, cultivable land was used by the plantations to grow sugar. Since the decline of the plantations, land suitable for agriculture has been covered by lava flows, developed into subdivisions, became private property without access, or was used to grow papaya. The prospect of using broader parcels of land for growing traditionally used plants is weak and relates to the reason why most of these plants were mainly grown around the homes of informants.

Hawaiian Rights

This section highlights several Native Hawaiian Rights that must be taken into account when any development or change in the use of natural resources occurs. This list is included to caution Hawaiians that geothermal development may pose a risk to their rights. Presented below are descriptions of these rights as they appear in the original study.

Ahupua‘a Tenants Rights - these rights, which were expanded in 1978, affirm and protect all rights, customarily and traditionally exercised, for subsistence, cultural, and religious purposes and possessed by *ahupua‘a* tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778, subject to the right of the State to regular such rights.

Access Rights - ancient Hawaiian *ahupua‘a* tenants needed access to the mountains and sea and along shorelines in order to fish, gather, and cultivate crops and to communicate with neighboring *ahupua‘a* tenants. In general, there were two kinds of trails to meet these needs. One kind of trail ran vertically from the mountains to the sea and the other ran horizontally, mostly along the shorelines. Hawaiian *ahupua‘a* tenants can assert constitutional claims to the use of ancient Hawaiian trails under Article XII, Section 7, of the state constitution which protects Hawaiian customary practices exercised for subsistence, cultural, and religious purposes.

Fishing Rights - aside from the rights Hawaiians can claim as members of the general public to the use of fisheries, Hawaiian *ahupua‘a* tenants have a unique constitutional claim to the use of fisheries adjacent to their *ahupua‘a* under general language of this section protecting rights customarily and traditionally exercised for subsistence and cultural purposes.

Freedom of Religion - both the State and the United States constitutions have a provision which forbids the enactment of laws prohibiting the free exercise of religion. Another constitutional claim to freely exercise ancient Hawaiian religious beliefs can be asserted by Hawaiian *ahupua‘a* tenants. The American Indian Religious Freedom Act of 1978 ensures that actions taken or licensed by federal agencies do not interfere with the inherent right of individual Native Americans, including Hawaiians.

Burials – the Hawai‘i constitution provides a general guarantee protecting cultural and religious practices of Hawaiians and Hawai‘i’s historic preservation law offers a comprehensive and detailed scheme for specifically protecting ancient Hawaiian cultural and religious sites, such as burial sites and *heiau*.

Act 306, enacted in 1990, amended the existing preservation law to uphold the common law rule that a private landowner does not have the right to possession of human skeletal remains found on his private property. Instead, the landowner will be treated under the statute as holding the remains "in trust" for cultural descendants who have the right to possession for purposes of proper cultural preservation or reinternment.

Water Rights – Hawaiians who want to cultivate taro and engage in other subsistence practices requiring the use of substantial amounts of water can assert three different kinds of rights to water. All three are based on customary use and common law doctrine and all three are guaranteed under the state constitution and the state water code found in the Hawai‘i Revised Statutes. Two of these water rights are based on tradition and customary use and common law doctrines known as “appurtenant rights” and “riparian rights.” Hawaiians who qualify for Hawaiian Home Lands under the Hawaiian Homes Commission Act of 1920 have a unique third claim to water and homestead land recipients.

Ceded Lands – In 1959, Hawai‘i became a state under the Hawai‘i Admission Act. Section 5(b) of the Act provides for the return of land supposedly acquired by the United States at the time of annexation from the Republic of Hawai‘i, Approximately 1.275 million acres became the property of the State of Hawai‘i, to be administered as a public trust for the following purposes: support public schools and educational institutions, improve conditions for Native Hawaiians, develop farms and home ownership, make public improvements, and provide lands for public use. Another 200,000 acres set aside for Hawaiian Homelands in 1921 was also transferred to the State of Hawai‘i.

Pele’s Appeal Documentary (1989)

The following interviews are from the 1989 filming of Pele Appeal by Nā Maka o ka ‘Āina. This film was produced for the Pele Defense Fund as an appeal for help to stop geothermal test drilling in the Wao Kele o Puna rainforest. The following individuals were at the forefront of this movement and shared their mana‘o regarding the significance of Pele and the Hawaiian forest in the film.

Aunty Pualani Kanakaole Kanahale, a Kumu Hula, shares about the cycle of life and that Pele and her sister Hi‘iaka continue to play today:

Pele’s very important because she is very visible. And, you know, when there’s an eruption, it’s very impressive to go and see. And it makes you pay attention, and makes you stop and look and listen and pay attention.

We only look at the Pele family as being the creation of new land. But the Pele family’s also the creation of things which grow on the land. That, after Pele goes and spreads her lava all over the land, and the land looks

devastated. If you have seen — everybody has seen new eruptions — the land looks devastated and it looks like it's in pain. And it needs to be healed.

Hi'iaka is that healer. And Hi'iaka comes and she heals the land. And wherever she walks, things would start growing. So Hi'iaka then, what Hi'iaka represents in that family is new vegetation, new growth.

That's why things of the forest for the hula dancer is important because they represent Hi'iaka, who in turn give respect to her sister, to Pele. And so this interplay between the two continues. And she continues because she continues the hula that we do. This respect that she keeps giving her sister has to do with the hula that we put on, because we continue to go into the forest and gather all of these things so that we can adorn ourselves with it. And in adorning ourselves with it, we again re-live this respect of Hi'iaka to Pele, to the one that made the land.

So they're telling us that the Pele family's a holistic kind of family. They do all of these kinds of things. So we have to take care of not only the land, but we have to take care of the things that grow on the land.

And so the forest is very much alive for us. And I keep saying this word, that the forest is alive. But the forest is actually life itself, as the land is life itself. The forest is life like we are life. Like we are living, the forest is living. And in order to keep this part of our culture alive and whole, we need the forest. (Nā Maka o ka 'Āina 2005:1-2)

Aunty Davianna McGregor of the Pele Defense Fund also speaks of the importance of the forest, both environmentally, spiritually, and culturally:

Traditionally the 'aumākua here, the trees and the plants here are the kino lau of Pele's family. And we say it's a natural filter. It's like her family helped to calm her more aggressive nature. So they help to filter out the gases and then they help to re-plant the forest after she's covered it over with lava.

This is where the Hawaiians could come and gather, because in the lowland area, these kind of plants did not grow. (Nā Maka o ka 'Āina 2005:2)

Uncle Emmett Aluli of the Pele Defense Fund explains that the native species found in Wao Kele o Puna are unique to that forest and cannot be found anywhere else in the world. Wao Kele o Puna is there home:

And the importance of this forest is that it's so diverse. It's been able to withstand a lot of lava flows. And so, in the destruction or covering of

portions of the forest, they've been able to regenerate and come out with a healthier, stronger species.

Same with the birds that are able to survive at a lower area, despite the mosquitoes that bring the avian malaria. These birds are healthy. They're low-lying and they've built up an immunity to the avian malaria disease. And so wiping out this forest, they don't go to other places. This is their home. Just like the people around here; they can't go to other places. This is where they've been raised, where the generations have been raised.

This forest, the last low-land rain forest is intact and is very necessary to re-seed the lands that Pele has covered. So the important thing is that these lands need to be intact if we're going to re-grow our forests a thousand years from now.

So when we talk about the forest, we talk about the unique ecosystem that is only here, Wao Kele o Puna, only here in Hawai'i and only here compared to the rest of the United States and the world. It's only this place and there's none other. (Nā Maka o ka 'Āina 2005:2-3)

Kaolelo Ulaleo, a kama'āina from Puna, speaks of his right to continue to access Wao Kele o Puna, as he and his kupuna have done for generations:

Wao Kele o Puna is rightfully my ahupua'a. From my grandparents to my greatgrandparents and even their parents have all gone into Wao Kele. Because, even like the liko 'ōhi'a, the young shoots of the 'ōhi'a tree, it's a maroon color. I would go with my grandmother. We would pick that. She would come home and she would pound it, pound it, pound it with the poi pounder. And then she would boil it and make a tea with it. And that thing would be bitter, bitter, bitter. Everybody had to drink a jigger of it in the morning and then one piece 'ōpae on the side to, like, cut it. And that was to keep you in good health. When you get it from the mountain area, the potency of it is much better than if I was to go get from the 'ōhi'a trees here in the yard.

So even like the 'awa root, you know, you cannot find it in this area now. You have to go up there, either to Wao Kele or to Waipi'o Valley. So majority of the people from all of Kalapana I would say use Wao Kele for self subsistence, whether it's for medicinal purposes or whether it's to feed their family. (Nā Maka o ka 'Āina 2005:6)

Papa Henry Auwae, a prominent Kahuna Lā'au Lapa'au (Hawaiian herbalist), was filmed walking through Wao Kele o Puna forest and discussing the different medicinal plants and herbs that he saw growing. He was appalled by the destruction of the forest that occurred as a result of Cambell Estate's geothermal development:

Plenty la'aus out here. Kopiko. Oh boy. Oh my, the lama and the 'ōpikos are all down. You see this tree here? Oh, my goodness. This is 'ōpiko, this tree here. And the bark, all this bark here is all wasted already, you see. Poho, all this, all wasted.

And this is, we can use this for — you know, a woman when they miscarriage, all the time miscarriage. And this is the kind of bark we use for tea, make it into a tea form. But this is all waste. How many years this thing old? Oh, my goodness, cannot get anything. Poho.

You cannot get a tree like this to grow overnight. It takes years. And this kind of tree, they don't grow too fast, they grow real slow, very slow. That one here took about 300 years, 300, 400 years. This is all waste, waste, wasted forever.

And this is the kind of thing, we should stop people like this desecrating the forest. Why don't they see people like us Hawaiians and we can help them, you know, go into a place like this and then try and save our herbs, out trees, you know, our lifestyle, instead of just waste it for themselves, through greediness. They like all the money. But how much life can they save? I can save life. Can they save life?

And this tree is gone forever. We cannot get this tree back in life again. And how many more trees like this that they had damaged and wasted? Cannot tell. We have use of the forest, we have the use of all the herbs in the forest to save people, to save human life.

And every time I walk and I see in a forest like this, I feel, I feel for the 'āina. I feel what my grandmother taught me about the lā'aus, how long it takes for the lā'au to grow. And people just come over here with a bulldozer and just knock it down. They don't think, they don't have any feelings.

You see that small leaves there? 'Olu'olu. That's another medicine that we use. And it's very scarce and very rare. This root here is important. This root here I would take this for medicine now. And I'm going to take this home for medicine right now. 'Olu nui. See. For a person, I have a person coming up and he has been losing his voice; he cannot talk. So this is what we're going to use to try and bring his voice back again. In a forest like this, there are a lot of lā'au that can cure people. People all over the world you can cure. (Nā Maka o ka 'Āina 2005:7-8)

ETHNOGRAPHIC INTERVIEWS

Ethnographic work was conducted from February 2013 through January 2014. As a multi-phase study, the ethnographic process consisted of identifying appropriate and knowledgeable individuals, conducting oral history interviews, summarizing the digitally recorded interviews, analyzing the oral history data, and preparing the report. Over 50 organizations and individuals were contacted and eventually 40 participants were consulted and/or interviewed. The list below reflects all of the individuals who participated in this study.

Community Participant	Background	Notes
Almeda, Kau‘i	Kumu Hula of Te Ha‘a Lehua Hālau, involved with WKOP in early days	Met with on November 19, 2013. Her mana‘o and recommendations are included in the interview summary.
Andrain, Richard	Kama‘āina and hunter	Met with at WKOP on November 21, 2013. His mana‘o and recommendations are included in the interview summary.
Awong, Keola	Hawai‘i Volcanoes National Park	Met with on November 8, 2013. Her mana‘o and recommendations are included in the interview summary.
Ballas, Mosses	Kama‘āina and hunter	Met with at WKOP on November 21, 2013. His mana‘o and recommendations are included in the interview summary.
Ballas, Marshall	Kama‘āina and hunter	Met with at WKOP on November 21, 2013. His mana‘o and recommendations are included in the interview summary.
Blanco, Q & Mariposa	Long time residents of Ka‘ohe	Met with on November 23, 2013. Their mana‘o and recommendations are included in the interview summary.
Braun, Steven	Kama‘āina and hunter	Met with at WKOP on November 21, 2013. His mana‘o and recommendations are included in the interview summary.
Brennon, Tom	Kama‘āina and teacher at HAAS school	Provided community referrals.
Dedman, Palikapu	Founding member of Pele Defense Fund	Met with on November 5 & December 11, 2013. His mana‘o and recommendations are included in the interview summary.
Elia, Lynn	From Opihikao and collections manager at Lyman Museum	Met with on November 8, 2013. Her mana‘o and recommendations are included in the interview summary.
Fernandez, Pua	Maku‘u Farmers Association, Maku‘u Homesteader	Spoke to on the phone on November 10 & 14, 2013 and provided community referrals.
Hauanio, Aku	Kama‘āina of Kalapana. Hunter and gatherer.	Spoke to on the phone on December 5, 2013. His mana‘o and recommendations are included in the interview summary.
Jackson, Tennilyn “Oshii”	Kama‘āina of Keahialaka	Met with on December 1, 2013. Her mana‘o and recommendations are included in the interview summary.

Community Participant	Background	Notes
Jones, Luana	Hui Aloha o Puna Makai, cultural advisor for Mālama o Puna	Met with on November 19, 2013. Her mana‘o and recommendations are included in the interview summary.
Ka‘awaloa, Pi‘ilani	Kama‘āina, Kumu at Kamehameha Schools Kea‘au Campus	Spoke to on the phone on February 28, 2014. Her mana‘o and recommendations are included in the interview summary.
Kalima, Iwalani	Kumu Hula of Hālau O Kou Lima Nani ‘E	Spoke to on the phone on November 22, 2013. Her mana‘o and recommendations are included in the interview summary.
Kanaele, Kaliko	Royal Order of Kamehameha, involved with stopping geothermal at WKOP	Met with on November 21, 2013. His mana‘o and recommendations are included in the interview summary.
Kekahuna, Paula	Maku‘u Farmers Association President	Spoke to on the phone on November 27, 2013. Her mana‘o and recommendations are included in the interview summary.
Kon, Ana	Kama‘āina of Keahialaka	Met with on December 1, 2013. Her mana‘o and recommendations are included in the interview summary.
Konanui, Jerry	Kalo farmer from Puna	Met with on November 29, 2013. His mana‘o and recommendations are included in the interview summary.
Langlas, Kale	Ethnographer and UH Hilo Anthropology & Hawaiian Language professor	Provided an email response on October 26, 2013 and provided community referrals.
Leialoha, Julie	Former WKOP Land Manger for DLNR	Met with on February 11, 2013. Her mana‘o and recommendations are included in the interview summary.
Lee, Edward	Owner of Lee’s Ranch, which borders WKOP to the southeast.	Spoke to on the phone on November 11, 2013. His mana‘o and recommendations are included in the interview summary.
Manner, Leimomi	Kama‘āina of Keahialaka	Met with on December 1, 2013. Her mana‘o and recommendations are included in the interview summary.
McEldowney, Holly	State Parks archaeologist. Conducted lava tube survey of WKOP in 1991.	Met with on October 10, 2013. Her mana‘o and recommendations are included in the interview summary.
McGregor, Davianna	Member of Pele Defense Fund, conducted Cultural Impact Assessment of Campbell Estate geothermal project in 1991	Provided reference materials, photos, and community referrals.
Mello, Joey	DOFAW hunting officer in Hilo	Spoke to on the phone on November 18, 2013. His mana‘o and recommendations are included in the interview summary.
Messick, Malia	Mālama o Puna, Kahuwai project coordinator	Provided an email response on October 25, 2013. Her mana‘o and recommendations are included in the interview summary.
Naeole, Emily	Mana‘o Foundation and	Met with on November 21, 2013. Her mana‘o and

Community Participant	Background	Notes
	former Puna county council women	recommendations are included in the interview summary.
Naleimaile, Sean	State Historic Preservation Assistant Archaeologist	Provided an email response on October 24, 2013 and provided community referrals.
Napeahi, Terri	President of Pele Defense Fund	Spoke to on the phone on November 19, 2013. Her mana‘o and recommendations are included in the interview summary.
Okita, David	Owner of Volcopters with years of experience flying in and over WKOP.	Flew us over WKOP on September 16, 2013. His mana‘o and recommendations are included in the interview summary.
Orlando, Cindy	Hawai‘i Volcanoes National Park Superintendent	Provided a written response on November 13, 2013 with background on the WKOP land purchase and community referrals.
Orlando, Tom	Ka‘ohe resident and WKOP hunter	Met with at WKOP on December 6, 2013. His mana‘o and recommendations are included in the interview summary.
Pahoa Senior Center	Community center in Pahoa that provides activities & resources for kūpuna	Visited Center on November 21, 2013 and the staff provided kupuna referrals.
Perry, Cheyenne	Former Wao Kele O Puna Land Manager for OHA	Met with on February 6, 2013. His mana‘o and recommendations are included in the interview summary.
Petricci, Robert	Puna community member involved with early geothermal struggles	Met with at WKOP on November 21, 2013. His mana‘o and recommendations are included in the interview summary.
Qaatero, Alona	Kama‘āina of Keahialaka	Met with on December 1, 2013. Her mana‘o and recommendations are included in the interview summary.
Rivera, Dennis	Kama‘āina and hunter	Met with at WKOP on November 21, 2013. His mana‘o and recommendations are included in the interview summary.
Saffrie, Dutchie	Former Hawai‘i Island Burial Council Puna representative	Spoke to on the phone on October 30, 2013 and provided community referrals.
Siracusa, Rene	Mālama o Puna President, Ka‘ohe resident	Met with on November 21, 2013. Her mana‘o and recommendations are included in the interview summary.

While the above list provides the names and affiliations of the individuals who participated in this study, we chose not to include participants’ names with their *mana‘o*. This decision was made because a number of participants, for a variety of reasons, did not want their identities documented in this study. Consequently, included below are quotes and *mana‘o* from the 40 participants without directly tying the statements to specific individuals.

Ancient and Modern Cultural Practices and Resources

The following section provides a summary of both ancient and more recent cultural practices and resources associated with the Wao Kele O Puna region in Puna. Many of the old customs and traditions continue to be practiced today and have been passed on from generation to generation.

Cultural and Historical Sites

Most of the interviewed participants did not recollect observing any cultural sites in WKOP, except for historic railroad tracks and artifacts such as bottles and wooden posts. One participant spoke of the old Pahoia Lumber Mill, a cord mill that processed 'ōhi'a trees for fire wood, railroad tracks, and house posts. None of the participants recalled seeing any *heiau* or other traditional Hawaiian sites in the forest. Although forest travelers have observed the existence of caves, none have been accessed to determine if any cultural resources are present. Participants have noted that there are more *heiau* and cultural sites located in the coastal regions of Puna indicating that population centers existed primarily on the coast.

While only one of the study participants had actually observed burial sites located in WKOP lava tubes, most of the participants were aware of the forest burial sites.

Trails and Access

During traditional times, trails served to connect the various settlements throughout the *ahupua'a* of Puna. In the WKOP region, there exist a few well-known trails that were mentioned by community members and have also been documented on historic maps.

One Kalapana participant spoke of an ancient trail, still in existence today, that winds from the Kalapana coast to Ki'ula. This trail, in essence a cleared pathway, continues to provide access to the *mauka* forest. Over the years, private property owners have attempted to prevent access to these trails, but court action by local families has ensured continued open public access for these trails.

Another Puna *kama'āina* spoke of an old trail that extends *mauka* from the coastline at Kaimu. The trail is built with stepping-stones in the *makai* portion, but the *mauka* portion of the trail is just a cleared pathway. This participant shared that his father had explained that at one time the trail was a wagon trail that traversed from *makai* to *mauka*. Today, the trail remains overgrown, but is still used by hunters to access the forest.

Another community participant shared that her father spoke about an old trail that started at the Kaueleau coast and wound *mauka* all the way to WKOP. In the old days, this well-used trail served as a walking path as well as a path for horses and donkeys. Neither of the trails mentioned had specific or established names, however, local residents were familiar with these trails and many were used by generations of Puna residents.

Numerous participants noted the dangers of accessing the forest in Puna because of the hazardous lava tubes and cracks. One *kama ʻāina* shared that some of the lava tubes run so deep that when throwing a rock down the tube, one can barely hear it hit the bottom.

Cultural Protocols

The majority of *kama ʻāina* shared that they conducted cultural protocols when visiting WKOP. Individual protocols range from reciting one's *mo ʻokū ʻauhau*, to offering an *oli kāhea*, or reciting a quiet and personal *pule*. While protocols differ from person to person, everyone acknowledged the unique and sacred nature of WKOP and the importance of entering with respect, humility, and serenity.

More specifically, cultural protocols conducted by community members when entering the forest include: Noho Ana Ke Akua, E Hō Mai, Nā ʻAumākua, Ke Lei Maila, Kūnihi Ka Mauna, and an *oli kāhea* created by *kumu hula* Taleni Kalui. There are likely other protocols offered when visiting WKOP, however these were the *oli* shared by study participants. The following are the lyrics and translations of these *oli*:

Noho Ana Ke Akua

*Noho ana ke akua i ka nāhelehele
I ālai ʻia e ke kī ʻohu ʻohu
E ka ua koko
E nā kino malu i ka lani
Malu e hoe
E ho ʻoulu mai ana ʻo Laka i kona mau kahu
ʻO mākou, ʻo mākou, nō a*

The gods dwell in the forest
Hidden by the mists
By the low-lying rainbow
O beings sheltered by the heavens
Clear our paths (of all troubles, obstacles)
Laka will inspire and enrich her devotees
That is us

E Hō Mai

(Edith Kanakaole)

*E hō mai i ka ʻike mai luna mai ē
ʻO nā mea huna no ʻeau o nā mele ē
E hō mai, e hō mai, e hō mai ē*

Grant us knowledge from above
The things of knowledge hidden in the chants
Grant us these things

Nā ‘Aumakua

(Adapted from Hawaiian Antiquities, by David Malo)

*Nā ‘Aumakua mai ka lā hiki a ka lā kau
Mai ka ho‘oku‘i a ka halawai
Nā ‘Aumakua iā Kahinakua, iā Kahina‘alo
Iā ka‘ā ‘akau i ka lani
‘O kihā i ka lani
‘Owe i ka lani
Nunulu i ka lani
Kāholo i ka lani
Eia ka pulapula a ‘oukou ‘o ka po‘e Hawai‘i
E mālama ‘oukou ia makou/ia‘u
E ulu i ka lani
E ulu i ka honua
E ulu i ka pae‘āina o Hawai‘i
E hō mai i ka ‘ike
E hō mai i ka ikaika
E hō mai i ke ‘akamai
E hō mai i ka maopopo pono
E hō mai i ka ‘ike pāpālua
E hō mai i ka mana.
‘Amama ua noa.*

Grant us knowledge from above
The things of knowledge hidden in the chants
Grant us these things
Ancestors from the rising to the setting sun
From the zenith to the horizon
Ancestors who stand at our back and front
You who stand at our right hand
A breathing in the heavens
An utterance in the heavens
A clear, ringing voice in the heavens
A voice reverberating in the heavens
Here are your descendants, the Hawaiians
Safeguard us
That we may flourish in the heavens
That we may flourish on earth
That we may flourish in the Hawaiian islands
Grant us knowledge
Grant us strength
Grant us intelligence
Grant us understanding
Grant us insight
Grant us power

The prayer is lifted, it is free.

Ke Lei Maila

(Hi‘iakaikapoliopole)

*Ke lei maila ‘o Ka‘ula i ke kai ē
‘O ka mālamalama ‘o Ni‘ihau ua mālie
A mālie pā – ka Inuwai lā
Ke inu maila nā hala ‘o Naue i ke kai
No Naue ka hala, no Puna ka wahine
No ka lua no i Kīlauea*

Ka‘ula island is bewreathed in ocean
Ni‘ihau shimmers in tranquility
And gently blows the Inuwai wind
While Naue’s pandanus drinks of the sea
The hala is from Naue, the woman is from Puna
From the very pit of Kilauea

Kūnihi Ka Mauna

(Hi‘iakaikapoliopole)

*Kūnihi ka mauna i ka la‘i ē
O Wai‘ale‘ale a lā i Wailua,
Huki a‘ela i ka lani
Ka papa auwai o Kawaikini;
Alai ‘ia a‘ela e Nounou,
Nalo Kaipuha‘a,
Ka laulā mauka o Kapa‘a ē
Mai pa‘a i ka leo
He ‘ole ka hea mai ē*

Steep is the mountain in the calm
It is Wai‘ale‘ale as seen from Wailua
Pulled away into the sky is the bridge leading to Kawaikini
The path is blocked by Nounou, hidden is Kaipuha‘a
The broad plain inland of Kapa‘a.
Don’t withhold the voice
It takes little to respond.

Oli Kāhea

(Talenī Kalui)

*Hiki au mai ma‘ō loa aku mai
‘Ālana aloha o ka mea hele
Me ka leo wale no, e e e*

E komo aku ho‘i au maloko

*Ma ka wao kele o Puna
Noho na kini akua
Pi‘i kī ke‘eke‘e ka ‘Ie‘ie
Pa‘a ke kumu ‘Ōhi‘a*

I come from a far distance
A traveler offering aloha
With just the voice
Permit me to come in

To Puna’s upland forest
Where a multitude of gods reside
The ‘Ie‘ie climbs zig-zag
Adhering to the trunks of the ‘Ōhi‘a

WKOP cultural practices and activities include more than offering *oli*. The site also contains built structures such as *ahu* that serve as gathering places for individuals to offer *pule*, *mele*, *oli*, and *ho‘okupu* to the *akua*, *‘aumākua*, and *kūpuna* that dwell in the forest. The first *ahu* was built during the geothermal protest in the 1990s. PDF members explained that this *ahu* was originally built on the cleared drill site in the forest. However, because True Geothermal threatened to build a drill on the *ahu*, it was relocated just outside the main access gate. Today, the *ahu* remains at this site and PDF members, as well as others, make a special point to visit the *ahu* before venturing into the forest (Figures 103 & 104).



Figure 103. The *ahu*, built by Pele Defense Fund members and protestors in the early 1990s, sits outside the old access gate



Figure 104. *Wahine* of Kumupa'a weeding the *ahu*

Additionally, a few years ago a *kumu hula* and other community members accessed the forest hoping to reestablish traditional gathering practices. An *ahu* was built at the old

drilling site, and native plants such as *lama*, *lāʻī*, and *iliahi* were planted in hopes that they could be cultivated and eventually gathered for use in *hula* traditions (Figures 105 & 106). Although this plan was developed with high hopes and good intentions, it was never successfully implemented. There were disagreements and differences among the involved groups (including OHA), and activities were eventually abandoned. Today, the *ahu* still stands at the old well site, but the absence of necessary site maintenance and care has left the area covered with weeds and other unwanted and invasive overgrowth.



Figure 105. Most recent *ahu* built at WKOP



Figure 106. An *ahu* built in 2012 located on the cleared land of the old geothermal drilling site

Mālama ‘Āina (Plant Cultivation, Maintenance and Use)

Hawaiians utilized upland resources for a multitude of purposes. Forest resources were gathered not only for such basic needs as food and clothing, but also for tools, weapons, canoe building, house construction, dyes, adornments, *hula*, and medicinal and religious purposes. Plants gathered by community members in WKOP include:

- * *Maile* - Fragrant *maile* leaves are used to make *lei*. Puna *maile* is renowned for its sweet fragrance.
- * *Māmaki* – The *mamaki* leaves are dried out and prepared to make tea and dyes and for use as a tonic and laxative.
- * ‘*Awa* – The narcotic ‘*awa* roots are used as medicinal remedies for a variety of ailments, and the entire plant is also a common offering in ceremonies.
- * *Palapalai* – The fern, often gathered by *hula* practitioners, is used to make *lei* and other adornments.
- * *Hapu‘u* – In historic times, *pulu* was used to make pillows and mattresses. Today, *hapu‘u* is more commonly gathered for the young fronds that are cooked and eaten.
- * ‘*Ōhi‘a Lehua* – The *lehua* flowers in WKOP are gathered for *hula* adornments.
- * *Ukiuki* – This plant is gathered to make wreaths.
- * ‘*Ie‘ie* – The strong ‘*ie‘ie* vines are gathered to make fishing implements. and
- * *Waiwī* – The straight and sturdy wood is gathered to make *lomilomi* sticks, walking sticks, and *kāla‘au*.

We spoke with two *kumu hula* who access the forest to gather *hula* plants. One of the *kumu hula* was actually working with PDF and OHA at WKOP to coordinate and collaborate with other *hula hālau* to start planting, gathering, and caring for the native plants. Unfortunately, this effort was short lived because of stringent OHA expectations and requirements that made the necessary volunteer process too cumbersome and unwieldy.

Experienced *maile* pickers noted that it is getting exceedingly more difficult to find *maile* in WKOP. Concerns range from *maile* being over harvested to the destructive hazards of invasive plants introduced in WKOP that have resulted in the diminished availability of healthy *maile*. Invasive plants such as Koster's Curse and Clidemia have dominated much of the forest undergrowth and have significantly affected the natural growth of the *maile*. One *kama'āina* explained that at one time *maile* grew abundantly in WKOP, but because of over-picking and a reluctance to take proper care of the land and the *maile*, we are left with a reduced supply. He explained that outsiders and *malihini* give little thought to haphazardly ripping *maile* off the trees instead of carefully removing the branches. This destructive picking harms the *maile* and eventually ends up killing the plants. He explained that the old timers respect the forest and know how to properly pick the *maile*. Unfortunately, many individuals are unaware of proper picking techniques, and this has resulted in the reduced supply and availability of this native plant.

According to other community participants, *'awa* is another significant native plant that at one time grew abundantly in WKOP. One well-known *'awa* patch was located adjacent to the access road by the forest entrance near Ka'ohē Homestead Road. According to one *kama'āina*, Papa Henry Auwae, a respected *kahuna lā'au lapa'au* practitioner, noted that the WKOP *'awa* was especially known for its medicinal value. Although the study participants were unaware of the specific name or variety of this *'awa*, they described it as being green with black spots.

Unfortunately, *'awa* no longer appears to be growing in WKOP. On a positive note, however, two participants shared that they had gathered cuttings from original WKOP *'awa* and were able to grow the *'awa* in their yards in Ka'ohē. Hopefully, this successful transplanting will enable residents in the near future to replant this original *'awa* strain in WKOP.

While talking story with Puna community members, only a few were able to share first hand knowledge of ancient and traditional agricultural practices that occurred specifically at WKOP. One *kama'āina* personally observed old terraces and walls that were likely remnants of dry land *kalo* gardens. This individual learned about the *mauka kalo* gardens from his father who explained that the *mauka* areas boasted more soil so people were able to plant gardens there. These growing conditions were better than the *makai* areas located near the coast with less soil and significantly drier conditions. Consequently, ancient Hawaiians would travel *mauka* to the forest and establish their garden plots there. This participant also explained that the rock walls were likely built to protect the *kalo* gardens from wild pigs who were known to have frequented the Puna forests.

Another community member explained that prior to privately-own lands, *kānaka* would regularly rotate their *mala* of *kalo*, *mai‘a*, *lā‘ī*, and *‘awa* so the land could rest and ensure the soil remained balanced and healthy.

Most of the participants fondly recollected the prevalence of native trees and species in these forests, and some discussed how these plants were utilized. One participant shared that *kukui* groves were prevalent in the *mauka* forests of Puna and that the *kukui* bark was striped and used for dyes and fishing nets; the *kukui* nut sap was used for *la‘au lapa‘au* and to treat thrush and cold sores. Participants also shared that the bark and *liko* of the *‘ōhi‘a ‘ai* was shaved, mashed, boiled and then consumed to help with asthma symptoms.

One participant recollected that in the old days there used to be a citrus farm that grew and harvested oranges and tangerines near WKOP. Another participant recalled that at one time Pāhoa was known as a tangerine capital. Another *kama‘āina* noted the existence of 100-year-old mango trees in the forest. This, he explained, indicated that years ago people were accessing the area to hunt and farm and would plant these trees for food while working or traveling in the *mauka* areas.

Recently, a handful of dedicated individuals got together in WKOP to remove invasive species and establish native plants in the area. In 2008, as part of the OHA-funded project, Mālama o Puna organized volunteers and students to help clear the WKOP access road of invasive species to help protect the few native species still growing along the road. Over the course of a few months, over 40 volunteers, including students from Lanakila School, came out to clear invasive plants such as *Clidemia hirta* and *Buddleia* that were choking native trees and shrubs. In addition, the Kahuwai Project developed curriculum focusing on Puna’s natural ecosystems and cultural significance. The curriculum was eventually provided to local Puna schools as well as Kamehameha Schools, Kea‘au campus. The goal of the Kahuwai project included fostering environmental literacy among future decision makers through place-based education and raising awareness in the Puna community regarding the health and responsible management of the local watersheds.

Hunting

About 20 of the community participants we spoke with were either hunters themselves, or have a family member that hunts food for them. In rural Puna, hunting is a traditional way of life, and many community members depend on hunting for food to feed their families. For these participants, hunting is not a sport but a means of basic subsistence. Most are responsible hunters cognizant of gun safety and sensitive to taking only what they need and can use.

Puna is well known for its fertile hunting grounds, and the hunters we spoke with explained that they and their families had been hunting in Puna for decades – some, for generations. These hunters cautioned, however, that hunting in this area of the island is extremely hazardous because of the numerous lava cracks in the WKOP forest. They strongly cautioned individuals wishing to hunt in the area to become familiar with the

dangerous environment and terrain. There have been numerous incidents in which individuals and dogs have fallen into the lava cracks and suffered serious injury.

A number of participants explained, and it was also clearly evident to project staff, that hunters today play a significant role in the lifestyle of the area and the area's ecosystem. Not only do they support and feed their families, they also gather *lā'au*, monitor the forest, and educate the youth. All of the hunters we spoke with are actively engaged in teaching the younger generations how to hunt, how to traverse the forest, and the importance of respecting, safeguarding, and preserving forest resources. According to some hunters, approximately 50 hunters access WKOP from the Ka'ohē access road. Other hunters and individuals probably access the southeastern portion of WKOP through a gated road in Kahauale'a.

Some of the hunters shared that *pua'a* play a key role in the local ecosystem, explaining that the pigs help to cultivate the forest by creating compost out of plant material such as the *hāpu'u*. One *kama'āina* explained that although there are still numerous pigs in the forest, their numbers have been steadily diminishing. Previously, he would trap and catch herds of pigs, but today, because of the large number of hunters, the pig population has been held in check. He explained that hunting is different and much sophisticated today, and that some hunters use more modern equipment such as putting GPS tracking devices on their dogs. However, he shared that some old hunting traditions remain, such as hunting at night by the moonlight.

Summary

The community's *mana'o* and *'ike* regarding the cultural practices that take place at WKOP today portray the continued importance of this treasured *wahi pana* to the identity and well being of Native Hawaiians. WKOP not only helps to link present generations with the rich traditions of the past, it also cements our identity as *kānaka 'āina*, people of this land. Through the interviews, it was clearly evident that many people still value and use WKOP to perpetuate and preserve traditional cultural practices and to incorporate them seamlessly and appropriately with current traditions. The Hawaiian culture is dynamic and alive, and WKOP serves as an important place where Hawaiian cultural practices can flourish and be passed on through the generations.

LEGAL RIGHTS OF NATIVE HAWAIIANS

The following section briefly reviews the unique legal status of Native Hawaiians and examines their legal rights, particularly concerning traditional and customary rights protected under both federal and state legal systems. Additionally, this section considers the implications of Hawai‘i court opinions that have secured the right of Native Hawaiians and their *‘ohana* to access Wao Kele O Puna in particular to engage in traditional cultural activities. An exhaustive summary of statutory and case law concerning Native Hawaiian rights is beyond the scope of this work. Consequently, the following account represents a brief yet concise review of applicable and relevant Native Hawaiian legal rights particularly appropriate for this study.

Legal Status of Native Hawaiians

Unlike Native Americans and Alaska Natives, Native Hawaiians have never been officially recognized as indigenous to America by the United States government. However, a number of federal statutes contain language indicating the unique status of Native Hawaiians in the eyes of the national government. These include what is known as the Apology Resolution (P.L. 103-150), which defines *Native Hawaiians* as any individual who descends from those who “occupied and exercised sovereignty in the area that now constitutes the State of Hawai‘i” prior to 1778. Other examples of federal statutory laws that specifically apply to Native Hawaiians are those that pertain to the religious, funerary and cultural rights of indigenous peoples in the United States. Some of these establish processes by which federal agencies should consult with Native Hawaiian organizations and individuals to mitigate government infringement on their beliefs, burial customs and ceremonial activities.

Although Native Hawaiians have not been granted explicit federal recognition, the State of Hawai‘i officially recognized Native Hawaiians as “the only indigenous, aboriginal, maoli population of Hawai‘i” with the codification of Act 195 in 2011 (Act 195, Session Laws of Hawai‘i 2011).

Aside from recognizing Native Hawaiians as the sole indigenous people of the Hawaiian archipelago, the State of Hawai‘i provides certain constitutional rights specifically to Native Hawaiians. Article XII of the Hawai‘i State Constitution, which is entitled Hawaiian Affairs, adopts the Hawaiian Homes Commission Act of 1920 and the trust compact relating to the management of those lands as the law of the State (Haw. Const. Art. XII, § 1-3). It also established that ceded lands will be held by the State as a “public trust for Native Hawaiians and the general public” (Haw. Const. Art. XII, § 4). The Office of Hawaiian Affairs (OHA) is also established under this article and the powers of the OHA Board of Trustees are outlined (Haw. Const. Art. XII, § 5-6). The final section of Article XII outlines the State’s reaffirmation of traditional and customary rights of Native Hawaiians with respect to subsistence gathering and cultural practices (Haw. Const. Art. XII, § 7).

There are also legal provisions specifically afforded to Native Hawaiians within the Hawai‘i Revised Statutes (HRS). These statutes are HRS section 1-1, which establishes native usage as an exception to the common law of the State of Hawai‘i, and HRS section 7-1, which grants access and gathering rights to native tenants. These state statutes, in addition to the constitutional provisions mentioned above, indicate the distinct and exclusive legal identity Native Hawaiians are given when viewed through the lens of Hawai‘i State law. When the rights granted to Native Hawaiians by the State of Hawai‘i are combined with those guaranteed by the United States government, the exclusive legal status of Native Hawaiians can be differentiated from those of the average U.S. citizen and the non-Native Hawaiian residents of Hawai‘i.

Native Hawaiian Traditional and Customary Rights

There are a number of guarantees provided through federal and state laws clearly demonstrating why agencies of the United States government and the State of Hawai‘i have a mandated responsibility to ensure the legal rights of Native Hawaiians are not infringed upon. These protections are found in laws pertaining to religious freedoms and beliefs, traditional practices and funerary customs, and the rights of access and subsistence gathering.

Under federal law, religious rights of Native Hawaiians are not only generally protected under the First Amendment of the Bill of Rights, but more specific statutory protections of religious beliefs and cultural practices contained in the United States Code as well.¹ These statutes relate to the treatment of Native Hawaiian burial sites, the right to access areas of religious and cultural significance, and the preservation of historic properties. Many of these laws require federal agencies to discuss mitigation strategies with Native Hawaiian organizations when government land-uses or federally funded projects adversely impact the religious and cultural rights of Native Hawaiians, culturally significant sites or burials.

The American Indian Religious Freedom Act of 1978 (P.L. 95-341) (AIRFA) states that it “shall be the policy of the United States to protect the inherent right of freedom to believe, express, and exercise the traditional religions of the American Indian, Eskimo, Aleut, and Native Hawaiians, including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites.” Because of inclusion in the AIRFA provisions, Native Hawaiian rights to access their sacred places and religious sites are affirmed. If the free exercise of religion is denied due to a proposed actions by a federal agency, consultation with Native Hawaiian entities and mitigation efforts must be undertaken to ensure the least possible level of disruption to the religious site or resource (Minerbi et al. 1993).

Another federal statute, the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA), protects basic funerary rights of indigenous peoples. Section 3(c) of

¹ The First Amendment states that, “Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the Government for a redress of grievances (U.S. Const. am. 1).

NAGPRA contains a provision which calls for land-management agencies of the federal government to undergo consultation with Native Hawaiian organizations prior to the disinterring of human remains or the excavation of items of historical cultural significance (Advisory Council on Historic Preservation 2011). Additionally, requirements under Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. Section 470) (NHPA) demand that a federal agency must consider and assess the impacts their undertakings have on historic properties. NHPA also requires federal agencies to consult with Native Hawaiian organizations when their policies and actions are found to have any effect on historic properties that are culturally or religiously significant to Native Hawaiians (Advisory Council on Historic Preservation 2011).

NHPA defines a Native Hawaiian organization as “any organization which serves and represents the interests of Native Hawaiians; has as a primary and stated purpose the provision of services to Native Hawaiians; and has demonstrated expertise in aspects of historic preservation that are significant to Native Hawaiians” (Advisory Council on Historic Preservation 2011). It should be noted that OHA is specifically mentioned in the law as one example of an organization that falls under this definition, though there are others. Consultation requirements under Section 106 of NHPA can be coordinated with those required under AIRFA and NAGPRA comprehensively (Advisory Council on Historic Preservation 2011).

Unlike the federal statutes mentioned above, many of the rights afforded to Native Hawaiians by the State of Hawai‘i originated in the customs and practices of pre-contact Hawaiian society and were originally codified by the Kingdom of Hawai‘i. Some of these rights were preserved after the illegal overthrow of the Hawaiian monarchy and have been recognized by both the Territory of Hawai‘i and the State of Hawai‘i. These rights, which are grounded in pre-contact Native Hawaiian traditions and have endured in the face of numerous changes in the legal authorities of the Hawaiian Islands, are considered traditional and customary rights.

During the division of lands that occurred between the years 1845 to 1855, known as the Māhele, the institution in charge of settling claims arising from this process were required to take the rights of native tenants into consideration. The Board of Commissioners to Quiet Land Titles, established by King Kamehameha III in 1845, were to conduct their proceedings under the requirement that all lands grants were subject to the rights of the Hawaiian tenants residing in the *ahupua‘a*. In 1850, the Kuleana Act was passed and recognized the right of native tenants to access undeveloped property to gather “firewood, house timber, aho cord, thatch, or ti leaf” for private and non-commercial usages and provides “right of way” (Forman and Serrano 2012). These provisions have been preserved in contemporary Hawai‘i law, in the form of HRS section 7-1 (Haw. Rev. Stat. § 7-1).² The access rights protected under this law are relatively limited as it only provides the right to gather to those items named by the Kuleana Act.

² Haw. Rev. Stat. §7-1-Building materials, water, etc.; landlords' titles subject to tenants' use. Where the landlords have obtained, or may hereafter obtain, allodial titles to their lands, the people on each of their lands shall not be deprived of the right to take firewood, house-timber, aho cord, thatch, or ki leaf, from the land on which they live, for their own private use, but they shall not have a right to take such articles to sell for profit. The people shall also have a right to drinking water, and running water, and the right of way. The springs of water, running water, and roads shall be free to

Another law enforced by the State of Hawai‘i today, originating in the time of the Hawaiian Kingdom, further expands upon the gathering rights of *ahupua‘a* residents. HRS 1-1 designates “established Hawaiian usage” as an exception to the common law of the State of Hawai‘i (Haw. Rev. Stat. § 1-1). This law extends native gathering rights to the collection of medicinal plants and other cultural items vital to the livelihood of Native Hawaiian tenants and the perpetuation of native culture beyond those mentioned in HRS 7-1 (Garavoy 2005).

In addition to the state’s statutory safeguards of the traditional and customary rights of Native Hawaiians, the Constitution of the State of Hawai‘i also guarantees specific constitutional safeguards. One relatively broad constitutional mandate relating to the State’s charge to preserve and foster the perpetuation Native Hawaiian culture is found in Article IX, section 9 of the Hawai‘i State Constitution which grants the State the power to “preserve and develop” the cultural arts of the different ethnic groups residing in Hawai‘i (Haw. Const. Art. IX, Sect. 9). This statute indirectly includes Native Hawaiian cultural traditions and beliefs.

More explicit constitutional rights are provided to Native Hawaiians under Article XII, Section 7, in which “The State reaffirms all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by ahupua‘a tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778, subject to the right of the State to regulate such rights” (Haw. Const. Art. XII, Sect. 7). This constitutional entitlement and the above mentioned statutes have been interpreted by Hawai‘i’s state courts in a number of precedent setting decisions that have shaped the legal framework of traditional and customary rights in Hawai‘i today.

The essential role traditions and customs play in the preservation and protection of Native Hawaiian rights is demonstrated through the attention they are given in both federal legislation and within the legal framework of the State of Hawai‘i. Since the transformation from the original communal land tenure system in Hawai‘i to one based on private property, conflicts have arisen between land-owners and Native Hawaiian cultural practitioners seeking to exercise their traditional and customary rights. The Hawai‘i judiciary has addressed these contradictory understandings of land-ownership and has issued opinions in a number of cases that clarify the court’s interpretation of traditional and customary rights.

In *Kalipi v. Hawaiian Trust Co. (Kalipi)*, (66 Haw. 1, 656 P.2d 745, 1982), the Hawai‘i Supreme Court addressed the rights delineated in HRS sections 7-1 and 1-1, and Article XII, section 7 of the Hawai‘i State Constitution for the first time (Forman and Serrano 2012). The court found that lawful residents of an *ahupua‘a* may enter undeveloped lands within their *ahupua‘a* to gather the items included in HRS 7-1. Furthermore, the *Kalipi* court ruled that the continuation of other Native Hawaiian customs and traditions

all, on all lands granted in fee simple; provided that this shall not be applicable to wells and watercourses, which individuals have made for their own use.[CC 1859, §1477; RL 1925, §576; RL 1935, §1694; RL 1945, §12901; RL 1955, §14-1; HRS §7-1]

outside those itemized in HRS 7-1 is ensured under HRS 1-1, as long as those practices are not harmful (Minerbi et al. 1993). It also noted that the interests of the property owner and the native tenants must be weighed against one another on a case-by-case basis (Forman and Serrano 2012).

The *Kalipi* case ruling only guaranteed the right to access and gather within one's *ahupua'a* of residence. However, the access and gathering rights provided by Article XII, section 7 of the Hawai'i State Constitution and HRS 1-1 were subsequently found by the Hawai'i Supreme Court to extend beyond that in *Pele Defense Fund v. Paty*, (73 Haw. 578, 837 P.2d 1246, 1992). In this case, involving Wao Kele O Puna in particular, Native Hawaiian cultural practitioners seeking to exercise their traditional and customary rights for subsistence, cultural, and religious purposes claimed that these rights were based on actual practice rather than place of residence. The Supreme Court agreed with that claim and held that native tenants can exercise those rights beyond the *ahupua'a* in which they live and may enter undeveloped lands to reasonably exercise their traditional and customary practices (Forman and Serrano 2012).

Yet another reaffirmation of the legitimacy of Native Hawaiian traditional and customary rights was the landmark decision in the case of *Public Access Shoreline Hawai'i v. Hawai'i County Planning Commission* ("*PASH/Kohanaiki*"), (79 Hawaii, 903 P.2d 1246, 1995, cert. denied, 517 U.S. 1163, 1996). In this case, the Hawai'i Supreme Court emphasized that state and county agencies are bound by the same legal obligation as the court to preserve and protect Native Hawaiian rights. The court declared that government agencies do not possess the "unfettered discretion to regulate the rights of *ahupua'a* tenants out of existence" (Forman and Serrano 2012). The *PASH/Kohanaiki* court clearly asserted that native tenants can gather on lands that are less than fully developed and anywhere they have traditionally and customarily practiced cultural activities in that manner. The ruling also emphasized the need to balance the interests of cultural practitioners and property owners on a case-by-case basis (Forman and Serrano 2012).

In *PASH/Kohanaiki*, the court further asserted that there is no minimum Hawaiian ancestry blood quantum requirement for one to validly assert customary and traditional rights (Forman and Serrano 2012). The court also interpreted that HRS 1-1 codified Native Hawaiian customs into state law and even declared that western notions of exclusive property ownership are not "universally applicable" in the State of Hawai'i (Forman and Serrano 2012).

The obligation for state agencies to ensure that proposed land-uses do not infringe upon the rights of Native Hawaiians was reiterated in the case of *Ka Pa'akai O Ka 'Aina v. Land Use Commission* (*Ka Pa'akai*), (94 Hawai'i 31, 7 P.3d 1068, 2000). The state and its agencies are obligated to protect Native Hawaiian rights to the "extent feasible" and consider the adverse effects of any proposed action on those rights (Forman and Serrano 2012). This case requires state agencies to follow specific guidelines, known as the "*Ka Pa'akai* framework" when carrying out their obligation to assess the impact of a proposed land-use on the customary and traditional practices of Native Hawaiians (Forman and Serrano 2012).

The precedent put in place by the above mentioned case law exemplifies the Hawai'i judiciary's efforts to resolve the fundamental incongruity between the exercise of traditional and customary rights and the interests of private landowners. Access to culturally significant sites and areas used for subsistence gathering and religious ceremonies is vitally important for the perpetuation of traditional Native Hawaiian cultural customs.

Traditional and Customary Rights at Wao Kele O Puna

When examining the rights of Native Hawaiians to access and engage in traditional and customary practices at Wao Kele O Puna, it is appropriate to note the Pele Defense Fund's (PDF) critical role in shaping the legal history of the property. See the sections of this document entitled "Geothermal Development" and "A Brief Overview of the Acquisition of Wao Kele O Puna," for a detailed account of PDF's efforts to secure Native Hawaiian rights to access Wao Kele O Puna, as well as their collaboration with OHA and other state agencies to coordinate the purchase and management of the property.

As a result of acquiring Wao Kele O Puna, OHA has also inherited the legal responsibility to administer the stewardship of this special place in a manner consistent with statutory law and court precedent. The most binding of these legal mandates passed on to OHA results from litigation brought by PDF against the former landowners of Wao Kele O Puna, The Estate of James Campbell. Following the Hawai'i Supreme court ruling in *Pele Defense Fund v. Paty*, the case was sent back to the Third Circuit Court, this time in the form of *Pele Defense Fund v. Estate of James Campbell, Deceased, et al.* ("*PDF v. Campbell*"), (Civ. No. 89-089, 2002) (Forman and Serrano 2012).

The Final Judgment resolving the claims in this case, entered by the court in August of 2002, ruled in favor of PDF. In its ruling, the Circuit Court permanently enjoined the Estate of James Campbell and the successors in interest to Wao Kele O Puna from excluding persons who meet a specific criteria from entering the "undeveloped portions of the land and using the developed portion for reasonable access to the undeveloped portion...to perform customarily and traditionally exercised subsistence and cultural practices" (*PDF v. Campbell, 2002*). The criteria include the following:

- a) Hawaiian subsistence or cultural practitioners who descend from inhabitants of the Hawaiian Islands prior to 1778,
- b) Person or persons accompanying those practitioners, or
- c) Persons related by blood, marriage or adoption to those practitioners.

To reiterate, individuals who meet the above criteria cannot be prevented from accessing Wao Kele O Puna to reasonably engage in traditional and cultural practices. As the successor in interest to the property that constitutes Wao Kele O Puna, OHA is bound by this permanent injunction. However, OHA is not responsible for those individuals entering the land who are not considered "invitees of the owner" for all purposes of liability (*PDF v. Campbell, 2002*).

The *PDF v. Campbell* judgment briefly spoke to the management of Wao Kele O Puna. PDF was ordered to submit a monitoring plan to the property owner to recommend appropriate management of the cultural and the natural resources on the property. Although OHA is not barred from developing the undeveloped portions of the property, any such development must be done in accordance with applicable law, and PDF may lawfully oppose those efforts. Moreover, due to its designation as a state forest reserve, there are strict limitations on what constitutes allowable land-uses on the property. PDF is granted further special considerations in this judgment by requiring that the owner of Wao Kele O Puna notify them regarding “any proposed future development prior to application for any state or county permits, or the initiation of any development-related activity that does not require such permits.” (*PDF v. Campbell*, 2002). The court also retained its jurisdiction to enforce the terms of the judgment, and any party who found to be in violation of those terms may be subject to contempt of court and could be sanctioned.

The conditions set forth by *PDF v Campbell*, in addition to the numerous state and federal laws pertaining to traditional and customary rights, clearly outlines some of OHA’s responsibilities as the owner and steward of Wao Kele O Puna. OHA is not only bound by the terms of the *PDF v. Campbell* judgment, but is also required to uphold Native rights in its capacity as a state agency (*Ka Pa ‘akai*, 2000 and *PASH/Kohanaiki*, 1995). The acquisition of Wao Kele O Puna provides OHA and the State of Hawai‘i with the unique opportunity to effectively and responsibly manage public lands in a manner that positively supports the perpetuation of Native Hawaiian culture and fulfills their legal mandate to protect the traditional and customary rights of Native Hawaiians.

Pele Defense Fund

In April 1985, Native Hawaiian religious practitioners and lineal descendants of Pele formed The Pele Defense Fund (PDF) to protect her essential life force and domain as well as the traditional and customary rights of Native Hawaiians. The founding members consisted of Palikapu Dedman, a descendant of Pele from Ka‘ū and member of the Protect Kahoolawe ‘Ohana; Dr. Noa Emmett Aluli, a Native Hawaiian physician on Moloka‘i and founder of the Protect Kaho‘olawe ‘Ohana; and Lehua Lopez, a Kanaka - Ōiwi environmental activist. In addition to the founding members, other dedicated volunteers have contributed to the work of the group throughout the decades. In their efforts to resist geothermal development, PDF united with Puna and Maui residents, Native Hawaiian organizations such as the Protect Kaho‘olawe ‘Ohana and Ka ‘Ohana o Ka Lae, and national/international environmental organizations such as Rainforest Action Network, Earth First, Sierra Club, Friends of the Earth and Greenpeace International. The stated purpose of the organization is education and perpetuation of Native rights, customs and practices and protection of the natural environment.

In addition to numerous cultural and ceremonial activities, non-violent protests (see section on Geothermal) and a successful national anti-geothermal ad campaign, the numerous legal actions undertaken by PDF have had a historic impact on Hawai‘i case law, particularly in the affirmation and expansion of Native Hawaiian traditional and

customary rights. Throughout their struggle against geothermal energy, PDF filed numerous civil suits and were represented by a number of attorneys including Hawai'i attorneys from the Native Hawaiian Legal Corporation, Yuklin Aluli, lawyers from the Native American Rights Fund, and New Mexico native rights attorney, Tom Luebben.

The impact of these lawsuits was significant in many ways. The group was able to successfully stop a large-scale geothermal development project at Wao Kele O Puna. Furthermore, some of the court decisions passed down have formed the basis for case law that has expanded and reaffirmed Native Hawaiian customary and traditional rights of access and gathering for religious, cultural and subsistence purposes. Additionally, these cases educated the general public with respect to the adverse impacts geothermal development and expansion has on Hawaiian culture, the environment, public health, and rate payers.

Of the many cases brought forth by PDF, one has particular significance in the context of traditional and customary practices exercised at Wao Kele O Puna. In August 1994, the Hawai'i Third Circuit Court in Hilo heard *Pele Defense Fund v. The Estate of James Campbell (PDF v. Campbell)* (Civil No.89-089) (Hilo) (2002). This case, which was remanded by the Hawai'i Supreme Court, involved cultural practitioners and Pele Defense Fund members who asserted their constitutional rights of traditional access to Wao Kele O Puna forest, the former State of Hawai'i Natural Area Reserve acquired by Campbell Estate in a 1985 land exchange. (See Appendix E for the *Findings of Fact and Conclusions of Law* of this case).

As required by the *Final Judgment* of PDF v. Campbell (See Appendix F), PDF developed a Draft Management Plan for Wao Kele O Puna and submitted that plan to OHA and DLNR suggesting appropriate resource management strategies (See Appendix G for the complete Management Plan Powerpoint presentation). The plan is outlined as follows:

Topic I: Neighbors Surrounding

- A. Partnering with subdivision border from Wao Kele O Puna to Kalapana.
 1. Attend subdivision Association meetings.
 2. Hot line number for; Fire, Native Plants, Removals, dumping of alien, species, exotic plants, cars and rubbish, discuss rubbish removal.
 3. Meet with the Hawaiians in the Subdivision Associations that would like to become members of PDF.
 4. Prevent private tours of Wao Kele O Puna.
 5. Notify police and authorities of PDF's Partnership with OHA in Wao Kele O Puna.
 6. Notify Public of access trails and gathering rights.
 7. Proper signage; notice of ownership, keep out etc.
 8. Find out from surrounding subdivisions of past present dumping area that exist.
 9. Receive reports from subdivisions that might have findings of burials, cultural sights and endangered fauna and flora.

10. Receive possible history of all previous land owners of all subdivisions surrounding Wao Kele O Puna.
11. Working together to remove invasive species bordering Wao Kele O Puna.
12. Give subdivision advice regarding Hawaiian issues, gathering trails, and a Hawaiian style treatment.
13. Work on Fauna and Flora protection programs.
14. Pass out educational information on Hawaiian rights, Federal and State, as well as special species protection laws.

TOPIC II: Native Plants

- A. Find name or ID lā‘au in the forest and propagate them in different areas.
 1. Will find out what edible plants there are in Wao Kele O Puna
 2. What plants and trees there are for building and shelter.
 3. Will find the ceremonial plants for various religious purposes.
 4. Will update data of the forest from the county, state, federal government, and the University of Hawai‘i.
 5. Map of overlay of high percentage of Native Plants and what kind?
 6. What kind of plants can be brought in from other parts of the forest or other forests of the island?
 7. Planting of native foods, e.g. (kalo, mai‘a, ‘uala, ulu, ipu, aiu, kukui, etc.)
 8. Native plants cannot be commercialized.
 9. History of Native plants and their pollination process.

TOPIC III: Wai - Water

1. Rain Forest aquifer diagram or reading on how much the forest produces for aquifer.
2. Rain fall readings (last 20 years).
3. Water flow to ocean.
4. Species of shoreline (limu & fish) and how water flow affects their existence.
5. Look at watershed idea for County, State, Federal (Watershed Programs).
6. Look at new ideas of protection plans and enforcement support.

TOPIC IV: Fauna

1. Detailed & accurate Native bird inventory.
2. Insects, snails, spiders, caterpillars, moths.
3. Bats & mammal count.
4. Invasive pigs, cows, turkeys, and chickens.
5. Exotic birds.
6. Exotic reptile, toads, frogs, lizards.
7. Impacts of eradication plans (e.g. hunters, volunteers).

TOPIC V: Lava Tube

1. Gather material of cave systems, entering and running directly through Wao Kele O Puna for locating, use and map inventory.
2. Species from cave systems (e.g. spelunkers).

3. New and old burial maps.
4. Finds of cracks and crevices.
5. Protection plans for the above reinforcements.

TOPIC VI: Hawaiian Use

1. Gathering liko, Flowers and lā‘au.
2. Designate area of safe picking.
3. Designate area for food planting.
4. Designate area for retreat shelters (Hālau's).
5. Designate area of new plantings.
6. Kuahu.
7. Building designs by hālau builders.
8. Gates.
9. Grounds keepers.
10. Removal and invasive plants projects.
11. Students volunteer projects.
12. Building materials from the forest.
13. Roads and maintenance.
14. Teachings and workshops on forest caring and gathering.
15. Power source for utilities.
16. Hunting and possible traps for food source consumption.
17. Having cultural practitioner/experts, teachings on lā‘au and also planting of hula implements.
18. Building of hula pa.
19. Working with hālau, kumu and all practitioners sharing and teaching one another.
20. Quarantine on all plants coming into Wao Kele O Puna consisting of sterilization and prep.
21. Removal plans of all the invasive species like fauna & flora.
- * Updated Data of Wao Kele O Puna

TOPIC VII: Enforcement & Protection of the Forest

1. County police.
2. Federal (fish & game).
3. State (Department of Land and Natural Resources).
4. Private Security (Volunteers/Personnel).
5. List of Laws (Federal, State & County) Statutes and laws and fines.

Today, PDF continues to actively support the traditional and customary rights of Native Hawaiians and remains “dedicated to the preservation and the perpetuation of Native Hawaiian traditional rights, customs and practices and to the protection of our unique island environment for all of Hawai‘i to enjoy now and in the future” (peledefensefund.org). OHA is working with PDF to evaluate proper stewardship of the irreplaceable natural and cultural resources located within Wao Kele O Puna and to ensure the fundamental right of Native Hawaiians to access those resources and perform cultural activities on the property is upheld.

OHA'S CULTURAL QUESTIONS

1. Name Origin:

When was the name Wao Kele O Puna first used? Are there any other names that were used anciently for this area, prior to the use of WKOP? Given its new stewardship and vision to be the land base for the new Hawaiian Nation, would it be culturally permissible to give WKOP a new name?

* *See pages 223–225 for mana‘o on these questions*

2. Traditional Land Stewardship:

What was the likely type of land stewardship that was practiced over WKOP?

* *See pages 191–199 for mana‘o on this question*

3. Ancient Cultural Practices - Religious:

Who are the most prominent gods and or goddesses associated with WKOP and the surrounding landscape? What rituals and or ceremonies associated with these gods and or goddesses were or may have been practiced on WKOP and the surrounding landscape?

* *See pages 59–74 and 75–143 for mana‘o on these questions*

4. Ancient Cultural Practices:

What are the known and possible cultural activities that were practiced on WKOP and the surrounding landscape?

* *See pages 199–215, 306–337, 350–360, 362–365, and 369–379 for mana‘o on this question*

5. Modern Cultural Practices:

Identify cultural protocols that may be used at WKOP today.

* *See pages 351–355, 363–365, 370–376 for mana‘o on this question*

6. Cultural Knowledge:

Identify past and current cultural knowledge of WKOP including, but not limited to: Mo‘olelo about WKOP and or surrounding area; Mele about WKOP and or surrounding area; Oli about WKOP and or surrounding area; Hula about WKOP and or surrounding area.

* *See pages 59–74, 75–92, 93–143, 144–170, 171–181, 351–361, and 369–379 for mana‘o on these questions*

GAPS AND THREATS

Gaps

Although a considerable amount of work was conducted researching various repositories, multiple online databases, and numerous written literature sources (reports, archival documents, books, etc.), this study does not represent an exhaustive examination of documents and materials relating to the WKOP region. Information remains yet to be researched, organized, and analyzed including additional un-translated Hawaiian language newspapers, Māhele documents, and the untapped memories and recollections of our *kūpuna*. Consequently, this study should more appropriately be viewed as an overview of the cultural and natural landscapes of WKOP and a compilation of currently available sources for this area. OHA and others are encouraged to expand upon and further explore the resources and information compiled by this study to further broaden our *‘ike* and understanding of Puna. This study, it is hoped, will motivate other scholars, students, and lifelong learners to research, document, and continue to pass on the stories and memories of this special *wahi pana*.

Specific gaps in information noted during this study include the following:

- Determine if a “private” version of the 1991 report: “*Survey of Lava Tubes in the Former Puna Forest Reserve and on Adjacent State of Hawai‘i Lands*” by McEldowney and Stone exists. It has been mentioned by DLNR officials that two versions of this report were produced; the first was confidential because of the numerous burial sites found, and the second was a public report. The public report contained only general locations and information to describe the nature of the lava tubes and relevant archaeological features, while the confidential report contained specific locations of the lava tubes, their entrances, and specific burial sites. While we were able to locate and examine the public report, efforts were unsuccessful to locate a copy of the private report. We contacted OHA, DLNR, SHPD, McEldowney, and Stone, but were unable to determine if a confidential report exists and if it did, where it would be located. Stone noted that he did not know about a confidential version of the report which listed the exact locations of the cave entrances. However, he did share that this information was recorded in his field notes, and that he could organize this data for OHA in the future.
- Locate the large-scale maps that illustrate the lava tube locations in WKOP. Cheyenne Perry, former WKOP land manager at OHA recalled the existence of these maps while working on the job at OHA. However, when we asked OHA and DLNR staff about accessing these maps during this study, they could not be located. It would be extremely beneficial to find these maps and keep them on file for future management purposes.
- Compile and translate the Boundary Commission Testimonies from the Wao Kele O Puna region. Boundary Commission testimonies provide detailed evidence on the natural and human-made features used to delineate *ahupua‘a* boundaries as

well as traditional practices such as land use, resource gathering, trade and travel. In the late 1800s, surveyors mapped out boundaries that were often described by *kama'āina* and *kūpuna* who were intimately familiar with the natural and cultural landscapes of particular areas. While it was beyond the scope of this study to transcribe and translate the boundary commission testimonies for Ka'ōhe and Waiakahiula it is strongly recommended that these materials eventually be reviewed to help reconstruct traditional land settlement and use in the Puna district.

Threats

During the course of this study, community members, agency personnel, and resource managers voiced concerns regarding a variety of preservation problems, management issues, as well as various threats and challenges facing WKOP. In this section, we identify, assess, and discuss some of those concerns. In the following section, we present recommendations and possible solutions to those problems and make other recommendations (based on community input) to improve, strengthen, and better preserve this *wahi pana*.

Health of the Forest

A primary concern, of both agency personnel and the affected community, involves ensuring, maintaining, and sustaining the long-term physical condition, wellbeing, and health of the forest. For example, the threat of and damage from various invasive species remains a priority concern for local residents. The most threatening invasive species include: uluhe, tripachina, purple bush, guava, strawberry guava, Koster's Curse, albizia, and fire ants. Numerous community members shared their concerns about these threats as indicated by the following remarks:

- * *Now there are huge pools of invasive species (trees, molds, viruses, seeds, bugs, etc.) and the trade winds (blowing from the north/northeast) blow all those invasive species into the forest.*
- * *Sugar cane farming was a major cause of invasive species, and now they're spreading further and further into the forest.*
- * *Most of the invasive species are below the 2,000 feet level, lower down where it's more rain forest/tropical. The fear is that the higher elevations are not as heavily affected yet. However, there is a gradual warming trend where the higher elevations will get warmer and the invasive species are going to creep up into that elevation. So if we cannot save the lower forest, at least, we need to contain it from spreading. It's like a cancer, you might not be able to cure it but you can contain it/stop it from spreading rapidly.*
- * *The 3.5 mile road that cuts straight into the forest had a major impact on the forest; roadsides are perfect places for new introductions of alien species to begin before spreading outward into the surrounding forest.*

The angle of the road cut created a wind corridor that blows wind-dispersed seeds into the area. Material that was used to make the road level was brought in from outside of WKOP, and the cinder included a lot of harmful seeds.

According to some of the community participants, albizia trees (*Falcataria moluccana*), are one of the more serious threats to the forest. One *kama'āina*, whose property abuts the forest, shared: “When we first moved to our property in Ka’ohe, it was all sugar cane -- there wasn’t a single tree out there, not one albizia. But now, the albizia trees are huge along with other invasive species and they inhibit ‘ōhi‘a and other native species from growing in this area.” Another participant expressed concern that the forest we see today may be the last generation of native trees; and “in another 50 years, it’ll be an albizia and guava forest or a lava flow will come through and it will all start again which is probably the best thing to happen.” However, one community member was somewhat more optimistic regarding the albizia epidemic and noted that the work of Flynt Hughes and his group to research and kill the albizia trees in WKOP is making an impact.

Specific native forest plants impacted by the increase of invasive species include *maile*, *palapalai* and other ferns, ‘ōhi‘a, and ‘awa. Additionally, a few *kama'āina* shared that there used to be more happy face and jumping spiders in WKOP, but they are no longer seen because of decreased light and habitat. In terms of the loss of *maile* in the forest, one *kama'āina* shared: “We used to have a lot of *maile* here, but there’s no *maile* anymore -- the pigs have killed it by rooting, the guava has killed it, and bulldozing has killed it; the largest *maile* patch that was the seed for this area was totally bulldozed (between the individual’s home and Leilani Estates) and it’s now all albizia trees; we used to have a lot of *maile* for all our kids’ graduations and parties; we used to have *maile* growing along here (indicating their property) because our neighbor, who was from Tahiti, took care of it and the pigs came, no *maile*; we haven’t seen *maile* in years.”

Another concern involves the proper maintenance, preservation, and management of the ‘ōhi‘a tree population in WKOP. The ‘ōhi‘a tree is one of the most abundant native trees in Hawai‘i and represents the majority of trees in the Puna rainforest. Native Hawaiians consider the tree and its forests as sacred to Pele, the volcano goddess, and to Laka, the goddess of *hula*. Unfortunately, what was once an abundant and flourishing native tree, ‘ōhi‘a has become significantly threatened because of the dangers posed by various invasive species, diseases, and humans. In Hawaiian wet forests, these alien species include the strawberry guava, albizia, and “purple plague” (*Miconia calvescens*). Community members shared that guava makes the ground acidic for the ‘ōhi‘a and blocks the growth of *keiki* ‘ōhi‘a. One *kama'āina* living adjacent to WKOP in Ka’ohe noticed over the years that 20 to 30 percent of the ‘ōhi‘a trees are dying from disease. Additionally, a few community members knew about people who cut down ‘ōhi‘a trees for firewood.

Another problem identified by a handful of community members concerns the feral pig population. According to some *kama'āina*, feral pigs represent a destructive invasive species. Their activities diminish native plant species, enhance growth conditions for

invasive non-indigenous plants, and threaten native forest bird species. Pig foraging and traveling patterns affect the fragile ecosystem by increasing soil erosion resulting in watershed degradation, and pig rooting and wallowing help create harmful mosquito breeding areas. Controlling Hawai'i's feral pig population is critical for preserving our ecosystem and protecting our native rain forests. Community member comments follow:

- * *Pigs are just as bad; they make waddles that kill the hāpu'u -- the guava takes over and then nothing grows; the forest becomes so toxic. The waddles also make prime mosquito breeding places. Pigs also transfer seeds throughout the forest on their fur and in their waste.*
- * *The pigs are hungry, and they used to eat a lot of the sugar cane; when the sugar cane fields were abandoned, there was a 10-year period where there was still a lot of sugar cane everywhere and not as many people fencing and such; the pigs are starving and they're going to eat anything that they can get hold of; the pigs dig up the hāpu'u -- they're digging up the forest making it very muddy.*
- * *With pigs in the forest there is an imbalance, they up-root the forest.*
- * *Pigs eat the fruit of many invasive species and create a bare ground allowing invasives to germinate. Pigs now have easier access to the internal regions of WKOP; previously, the land in its natural state served as a barrier, and the pigs were forced to maneuver around massive gaps in the land and tangled masses of uluhe fern.*

Management Concerns

In addition to sharing thoughts and concerns regarding the long-term physical condition and wellbeing or health of the WKOP forest, community members commented on what they felt were appropriate and responsible management or stewardship practices for WKOP. Land management and responsible stewardship are critical for preserving our natural environment and safeguarding our quality of life and that of future generations. Public and private partnerships need to be encouraged and sustained to restore and protect Hawai'i's native forests – essential for our native habitat, precious water resources, Hawaiian culture, and overall quality of life.

In terms of managing the introduction and spread of invasive species in WKOP, community members feel that DLNR and OHA are doing an inadequate job of protecting the forest from these threats. Specific *mana'o* from community members include the following:

- * *You can't wait when you're dealing with invasive species, you need to act right away.*

- * *OHA can't wait for the management plan to be pau before taking care of the forest -- they need to act now.*
- * *OHA should have already been weeding and taking out invasive species since they acquired WKOP.*
- * *OHA and DLNR both have to take the blame for the current condition of the forest -- for all the dead 'ōhi'a and for not protecting them.*
- * *OHA and DLNR have been neglecting their mandate to manage the forest.*

Additionally, numerous community members believe that OHA has been paying only minimal attention to current issues and problems at WKOP; micro-managing their projects; misusing funds; initiating too many and unnecessary changes within the organization; and neglecting to visit WKOP on a regular basis to properly monitor and oversee activities at the site. Whether all of these concerns are actually occurring or not, it is clear that the community's perception of OHAs involvement and management of WKOP is primarily negative. Consequently, the agency may wish to consider initiating steps to acknowledge, discuss, and address these concerns; encourage an on-going free and open dialogue with the community, and improve, strengthen, and renew OHAs commitment to work cooperatively and in a meaningful fashion with the community. These efforts might go a long way towards improving OHAs image and standing within the Puna community. Along these lines, community members expressed disappointment that OHA has yet to establish a community advisory team. A community member shared: *"This is extremely frustrating as community participation is vital to Wao Kele O Puna's success."*

Community concerns have also been raised regarding restricted forest access. Currently, there is only limited access to the forest, and individuals must request a key from the DOFAW office in Hilo prior to accessing the forest. Some Puna *kama'āina* believe that it is inconvenient and cumbersome to call DOFAW, reserve the key, and then take a round-trip from Puna to Hilo before accessing the nearby forest. Community residents feel this makes little sense. The only other forest access is located in the southeast part of the forest. That access, however, requires going through private property and only a limited number of locals are allowed access through Lee's Ranch. Restricted access also caused difficulties for local hunters. According to the hunters, in 2012, a DOCARE officer informed them they could no longer hunt in WKOP. Since then, these hunters have been reluctant to hunt because of fears that they might get arrested and/or fined. This has hampered efforts by the hunters to provide food for their family, relatives, and friends; many hunters must now access the forest much further away from their homes – this makes their hunting significantly more inconvenient, time consuming, and difficult.

RECOMMENDATIONS

One of the primary objectives of this study was for Kumupa‘a to complete its review, analysis, fieldwork, and interviewing and based on this effort, develop and offer recommendations for OHA regarding the appropriate and responsible management of Wao Kele O Puna. Prior to determining any course of action, OHA specifically requested that the study include the *mana‘o* of the community regarding the proper care and protection for this *wahi pana*. Consequently, the recommendations that follow are based on all of the various aspects of our study - research, literature and document reviews, data analysis, fieldwork, the personal *mana‘o* of the study team, and the information, concerns, and suggestions gleaned from numerous interviews conducted with the involved and affected Native Hawaiian community members.

We hope our study recommendations, including documenting, discussing, and assessing the identified issues, threats, and concerns, will provide OHA and the larger community with a more comprehensive understanding of and appreciation for the compelling need to ensure the proper and long-term preservation and protection of this very unique and special *wahi pana*. The community, from a deeply personal and local perspective, has provided invaluable information and feedback regarding the ideal management of this sacred area. We hope their thoughts, concerns, and *mana‘o* have been properly conveyed through this study and that a meaningful, beneficial, and constructive response ensues.

Natural Resources

Wao Kele O Puna is the largest intact lowland rainforest in the State, and the health of this forest remains a primary concern not only for the residents of Puna, but for all those we spoke with. For community participants, the single most paramount recommendation was the proper preservation and safekeeping of the forest to ensure it can be enjoyed and appreciated by future generations. To preserve the unique aspects and qualities of this forest, the community offered a number of diverse recommendations.

A primary recommendation from the community involved OHAs efforts to eradicate the invasive species negatively impacting the forest. According to many of the participants, this responsibility and duty should be first and foremost on OHAs list. One *kama‘āina* clearly stated, “*WKOP can’t be an outdoor classroom or a truly Hawaiian gathering place with all the invasive weeds growing there.*”

Some participants suggested that when some of the invasive species are removed, they could be used “positively” by OHA to improve the forest and to benefit the community. For instance, if the *waiwi* is removed, the straight, hard wood can be used to make *kala‘au*, *lomilomi*, and walking sticks. Albizia wood can be used for mulch and lumber. One *kama‘āina* explained, “*Albizia trees could be chipped, used for bio-charcoal and mulch. There is a big chipping machine on O‘ahu (the only one in the islands) that was used to clear Waimea Valley of albizia trees. A D-9 with a huge grinder, which grinds up*

these large albizia trees and make mulch. This will stop the seeds/disease from spreading further into the forest.”

It was also recommended that OHA look beyond the 26,000 acres it owns in WKOP to the larger surrounding forest. A few *kama‘āina* familiar with the ownership of lands surrounding WKOP suggested that OHA consider purchasing the 900 acres of land owned by the Catholic Church. One participant stated, “*OHA should purchase and take care of the 900 acres that the Catholic Church owns just northeast of Wao Kele O Puna and use it for re-forestation and agriculture. Instead of being a big invasive pool, it could be productive farming and agro-forestry. Lease the land to farmers and get rid of the invasive trees and grass. OHA should talk with the Pope as he is progressive. Their land is right next to a sacred forest so they should be good land stewards who use organic and non-GMO farming practices.*” Another *kama‘āina* recommended that, “*OHA should speak to the Pope, and the Catholic Church should be made accountable for having their 900 acres go fallow and not being good land stewards. OHA could try and get them to donate the land to the community so we can use sections of the land to grow food on.*”

Native Plant Restoration and Gathering

Native plant restoration and use is intricately connected to the overall health of the Puna forest. Many of the participants noted that WKOP is a place that was traditionally accessed to gather *lā‘au* for a variety of uses and that these practices must continue to be exercised today. However, many of the native plants that were gathered by practitioners are rapidly dying off so action must be taken to reestablish these significant forest plants.

Many community participants acknowledged that WKOP must be open and accessible to *hula hālau* for gathering native plants. One *hālau* member shared that they want to use WKOP as a place to plant and grow native plants used for *hula* practices, such as *palapalai* and *maile*. This participant has also been in contact with other *hālau* that are interested in planting, gathering, working, and teaching at WKOP.

Other *mana‘o* shared by the community included the following:

- * *If people start to replant ‘awa and maile then people will start to use the forest again.*
- * *OHA needs to figure out what can grow in this forest, with the local conditions. This will help them understand what plants should be restored here. They should also figure out why the maile is dying. This plant is so special to the forest and it needs to be protected so future generations have access to it.*
- * *Need to replant native plants, especially plants that you can make crafts out of and sell such as ‘ōhi‘a to make ‘ōhi‘a posts.*
- * *Have lā‘au lapa‘au and gathering workshops for practitioners.*

- * *Use the forest to help support local food security and sustainability.*
- * *Implement culture, cultural resources, practices, and restoration to make use of this place. Use the natural resources to strengthen one's connection with the place, and to their Hawaiian culture, which is a part of the practice to gather. But the process must be complete. So its not okay just pick, you have to have some kind of way to reciprocate it, such as gathering and replanting some place else or gathering to feed the trees or gathering to take out invasive plants/bugs. Gather and give back to the place for the next generations. Being a practitioner doesn't only come with gathering but it comes with taking care and kuleana. This part of the process is still missing. If the resources are being used, practitioners need to have some kind of responsibility to give back to the place.*
- * *The Wao Kele O Puna Forest Reserve contains resources that are vital for maintaining Hawaiian culture and practices. Hawaiians consider native plants and animals as family and have a strong spiritual connection to the mountain landscape and the forest itself. Gathering plants such as ferns, maile, flowers, fruits, and other materials cannot be perpetuated into the future unless the forest remains relatively pristine.*

Cultural, Historical, and Archaeological Resources

Recommendations regarding specific cultural sites in WKOP are listed in the Cultural Resources of WKOP section. However, based on our background research of the project area, most researchers concluded that limited archaeological evidence of past activities exist in the forest today. Unlike the wealth of well-preserved cultural sites along the Puna coastline, the forest area was not accessed as frequently, and the stone structures built there are very difficult to locate due to the dense vegetation cover and the wet conditions. Additionally, the activities that did occur in the forest, such as bird catching and planting, were less likely to produce stone or structural remains.

While locating any new archaeological sites in WKOP will likely be challenging, Kumupa'a recommends that OHA conduct additional archaeological investigations of the three previously identified lava tubes located within Wao Kele O Puna (the Northern, Middle, and Southern Lava Tubes) to obtain a more complete understanding of the nature, scale and resources of these cultural sites. In the 1991 reconnaissance survey of these three lava tubes conducted by McEldowney and Stone, the authors did not explore and document the entire length of the tubes. Consequently, a more detailed and thorough investigation of these cave systems will likely reveal additional burials, archaeological sites, and artifacts that should be documented and protected. Additionally, because these three lava tube complexes are known to contain numerous *iwi kūpuna*, proper protocols and respect must be maintained when handling any human remains. Documentation should be non-intrusive and *iwi* should not be photographed, handled, or disturbed.

After more detailed archaeological documentation is completed, Kumupa‘a recommends that OHA prepare a Burial Treatment Plan for the *iwi kūpuna* located within the lava tubes. This plan will help to protect and preserve known burial sites and *moepū* (associated funerary object) within these lava tube complexes. This plan should follow the guidelines under Hawai‘i Administrative Rules, Title 13, Subtitle 13, Chapter 300, detailing the proposed treatment of all identified burial sites and recommending protocols for dealing with any future discoveries of previously unidentified *iwi kūpuna* within WKOP. The plan should be prepared in consultation with OHA and any lineal and/or cultural descendants that are connected to the Wao Kele O Puna area.

While there are no immediate development plans for WKOP, Kumupa‘a recommends that if any future land-altering activities occur (i.e. fence or road construction and maintenance, building of a hale, etc.), archaeological monitoring should be implemented. Archeological monitoring will potentially prevent accidental damage to unknown cultural features. In addition, on-site monitors will be able to point out archaeological features in areas of increased visibility due to vegetation clearance during land-altering activities. Land-altering activities could uncover cultural resources on the surface or underground and if any historic, cultural, burial sites or artifacts are identified during any ground disturbance, all work should immediately cease and the appropriate agencies should be notified pursuant to applicable law.

Kumupa‘a also recommends that OHA consider developing a plan to identify and avoid historic and cultural sites, including burials that may be located in surface or subsurface contexts, prior to finalizing any potential land-altering plans. Specific decisions should be made in consultation with appropriate government agencies and Native Hawaiian organizations and individuals.

Pu‘uhonua & Kipuka

Throughout the study, probably the single most frequent community recommendation was to establish a cultural gathering place at WKOP. According to the community, a gathering place could serve multiple functions such as a retreat for practitioners, a gathering place for community members, an outdoor classroom for students, and a cultural center for visitors. Community participants discussed their ideas about the education, teachings, and cultural practices that could occur at a gathering place, cultural learning center, and/or a *pu‘uhonua* located at WKOP:

- * *This space would not only be a place to physically gather or a place to gather plants, but to gather thoughts, feelings, and energies.*
- * *There’s no real gathering place in Puna to hold celebrations. The Pahoia Community Center is always booked. Use WKOP as a gathering place.*
- * *A place to host visitors that come to Puna*

- * *A place to build a hale for hālau to come and relax, have a retreat to practice, and give back to the land by out planting.*
- * *Grow food gardens to feed our community.*
- * *Encourage Hawaiians to use the forest. The forest should stay as a place for hālau to gather and hunters to hunt. It should remain an area for us Hawaiians to gather & hunt...that's what we wanted all along and we will continue to fight for that!*
- * *WKOP could be an appropriate place to mālama the 'iwi kūpuna that are forced to be removed from their original resting places. If 'iwi kūpuna in Puna have to be moved and they can't find any 'ohana to rebury them in another place, WKOP could be an option for 'ohana to choose to reintern 'iwi there. Safe, protected place managed by Hawaiian agency.*

Most community participants recommended that the gathering place and related activities be situated at the existing clearing site within the forest. This site is already open and cleared; many people felt that it should be used so no other clearing of the forest would have to be established. Regarding the actual building of structures at this gathering place, it was suggested that an open *hale* should be built using the resources of the forest such as *ohi'a* wood for the post and *loulu* palms for the roofing. Participants also suggested building a *hula pā* and an *ahu* as appropriate cultural structures.

Additionally, the Pele Defense Fund has already developed a plan for a cultural gathering place within WKOP (see Appendix G). Members of PDF have carefully thought out the specifics of a cultural center and have worked with architects and other specialists to create their plan.

Community Collaboration

Almost all the participants we spoke with offered valuable suggestions, ideas, and/or personal assistance in ways to help protect the wellbeing of WKOP. They all recognized that to properly *mālama* such a large forest, a cooperative and open team effort must be undertaken. Additionally, some participants suggested that they would like to see OHA and DLNR have more of a presence in WKOP to help ensure that both agencies develop an appropriate familiarity with and understanding of the lands. Additionally, such a presence would enable both agencies to better appreciate and work in conjunction with the local community.

Some of the community groups willing to work with OHA and interested in providing relevant expertise and support to that agency include the Pele Defense Fund, Maku'u Farmers Association, Mālama o Puna, Hui Aloha Puna Makai, Kalaunone o Puna, Mana'o Foundation, Hula Halau, and other *'ohana* such as the Ka'awaloa's, Keli'iho'omalu's and Kan's. These organizations, *hui*, and *'ohana* could help manage the

forest, help coordinate community volunteers, and help engage Puna students in WKOP projects.

A number of participants explained that Puna *kama'āina* are in essence the best stewards of the land because they are historically connected to and care deeply for their *'āina*. Consequently, it was suggested that OHA should work with individuals from the Puna community and encourage them to participate in the WKOP management team. In turn, this would enable OHA to obtain valuable feedback and input from local community members and to work more intimately and effectively with the Puna community.

Other *mana'o* that was shared by the community regarding collaboration includes the following:

- * *A Hawaiian group or groups need to take the lead with stewardship efforts at WKOP. And then others in the community would jump on board and help out.*
- * *There needs to be collaborations between different organizations, families, and individuals in Puna to all come together to manage the forest.*
- * *Get together local people with different skill sets and specialties - crafters, artists, builders, cooks, and kumu hula.*
- * *OHA should partner with the Puna schools. This would empower the keiki on being good land stewards; and they will be stoked about taking care of their own backyard. For example, at HAAS School each student has to do a mandatory 32 hours of community service per quarter. The school provides a lot of areas where the students are able to volunteer.*
- * *The community should be responsible for their environment.*
- * *OHA should empower the community.*

There were a handful of individuals and groups who briefly volunteered their services at WKOP; unfortunately, for a variety of reasons this volunteer involvement was short lived. Encouragingly, however, many of the participants we spoke with voiced strong interest in doing volunteer forest work in the future. Local volunteers represent a valuable resource and asset for forest management and one *kama'āina* explained, “*Local volunteers are knowledgeable about the area, and they can bring in groups to help clear invasives; at the same time, they can teach others about the native plants in the forest and their uses.*” Ideally, and possibly it would be more efficient and cost-effective, if OHA could fund a local non-profit or a group of community members to organize and oversee volunteers to, among other things, help clear invasive species from the forest and plant more natives.

It was strongly recommended by the community that volunteer programs be established and supported at WKOP. OHA could benefit on a number of levels from these volunteer resources, and such a program would provide an opportunity for local citizens to give back to the land and their community. OHA should work with local groups and organizations interested in volunteering their time, expertise, and service. Additionally, this process should be an open, simple, and flexible one to encourage rather than deter or restrict individuals from volunteering.

Konohiki and Kia‘i (Local Managers and Guardians of the Forest)

Many elements of the ancient Hawaiian *ahupua‘a* system have relevance for us today. Our *kūpuna* practiced *mālama ‘āina* and recognized the importance of collaboration and working as a community with shared interests to protect the land, water and all the natural and cultural resources in Hawai‘i. It was recommended that OHA should look at culturally appropriate management practices for WKOP. A handful of participants suggested having *konohiki*-like managers who are intimately in-tuned with the forest and its resources. These individuals should have a resource management background coupled with a strong cultural foundation. One specific example of this type of management system is the Protect Kaho‘olawe ‘Ohana (PKO) who train *kua* to be the *kahu‘āina* for Kaho‘olawe. It was recommended that OHA should have *kua* for WKOP and to replicate the PKO model.

Another suggestion was to have the *konohiki* actually live in the forest so they learn about and become sensitive to the environmental rhythms and cycles of the land and specific resource needs. One *kama‘āina* shared, *“If you are in-tuned with nature, the resources will tell you what to do and how to use them, not the humans telling the resource how to be. This is a good management practice, but a totally different perspective and concept than what we’re used to.”* Another participant commented, *“We need native people to live in the forest to revive the forest... this is not an academic exercise. You need serious people making a living somehow in the forest which isn’t a Western concept anymore. Parks and museums don’t work.”* Another *kama‘āina* expressed, *“Have a person live there full-time, like a konohiki, to over-see no trespassing, keep the area pono, no make any kine, make sure people don’t dump their rubbish.”*

It was also recommended that OHA establish a form of the ancient *kapu* system in managing WKOP, and that *konohiki* managers enforce *kapu* restrictions in certain areas to allow resources to rest and rejuvenate.

The idea of *kia‘i*, or caretakers and guardians, was brought up by a few of the community participants. This idea puts the management *kuleana* in the hands of the local community and gives them the authority to make important decisions about the well being of the forest. More specifically, one participant discussed the idea of OHA working with the subdivisions that neighbor WKOP and have them serve as *kia‘i* to help manage the forest. The community member explained that, *“Different sections of the neighboring suburbs/community’s could manage different areas of the forest and access to those areas. They would act as watchdogs for the areas that border the forest. A hot line could*

be set up to call in if there's any illegal activities or dumping trash. This would be good so not just one group manages the forest, but it's more of a collective effort. Give every Hawaiian some kuleana in their community and give them a sense of pride."

Some community members discussed using hunters to serve as *kia'i*. It was explained that many hunters already serve multiple roles including feeding their *'ohana*, picking *lā'au* for their *kūpuna*, eradicating invasive species, and educating younger generations. Consequently, some members believed that it made good sense to have local hunters take on a management role in caring for the forest and its resources.

'Aha Kūkā, Advisory Council

While meeting with the community, Kumupa'a staff shared OHAs idea of establishing an 'Aha Kūkā Advisory Council to help manage WKOP including developing the 'Āina Hānau Stewardship Plan.

While most community participants expressed interest in becoming involved with the planning and management of WKOP, specific participants voiced interest in being part of the 'Aha Kūkā. These individuals and organizations include:

- * *Paula Kekahuna – Maku'u Farmers Association*
- * *Palikapu Dedman – Pele Defense Fund*
- * *Emily Naeole – Mana'o Foundation*
- * *Tom Orlando – Hunters hui*
- * *Luana Jones – Hui Aloha Puna Makai*
- * *Kalaunone o Puna*
- * *Rene Serecusa – Mālama o Puna*
- * *Ana Kon*
- * *Pi'ilani Ka'awaloa*

Additional *mana'o* that was shared regarding the 'Aha Kūkā Advisory Council follows:

- * *OHA needs to consult and work with PDF every step of the way. OHA wouldn't have the forest today if it wasn't for PDF.*
- * *PDF has to be a part of the management efforts, but we should not be the only or main hui in charge. We can help coordinate efforts, but it's everyone's forest. And Puna people should step up to take on kuleana of WKOP.*
- * *There should be two advisory councils. One advisory council with only community members and another advisory council with stakeholders and agencies. For example, the Kaho'olawe Island Reserve Commission and the Protect Kaho'olawe 'Ohana. For the stakeholders/agency council, it's not a part of their livelihood, it's just a job for them; so there's a whole different perspective on why they*

are on the council. There are two different kinds of people coming to the table to discuss these issues: the community discusses their livelihood and how they thrive/live on this land.

- * There should be no foreign people on the advisory board. Meaning no one that lives outside of Puna, or doesn't access the forest.*
- * The advisory council idea should be scrapped and it should be the local residents that should be in charge.*
- * The community meeting OHA had a few years ago was good, the community gave good input. OHA should have another meeting like this to listen to the community's mana'o and to see who wants to serve on the advisory council.*

Other outside members could also be brought in to the 'Aha Kūkā to provide a well-rounded perspective with many different areas of expertise. *Hula hālau* are still practitioners using WKOP, so a *kumu hula* with knowledge and interest in the area could be a member. Also, a member that has historic preservation background might be useful. A member that is an academic professor from Hawaiian Studies programs or related programs knowledgeable about WKOP could provide additional insight. Adding such members to a Board would help ensure that OHA has a link to the broader Native Hawaiian community in WKOP planning and development activities.

Overall, support seems to exist for establishing an 'Aha Kūkā to assist in managing WKOP – to address short-term and long-term planning and to address ongoing development and educational activities. Assuming OHA would be the ultimate manager of WKOP, the 'Aha Kūkā would offer the community a voice in all planning and decision making activities.

Education

Several of the participants discussed the importance of responsible stewardship for both the cultural and natural resources of the forest and the benefits of maintaining a healthy forest through outreach and educational efforts. It was recommended that more programs should be established to educate the children of Puna about the Hawaiian culture and the significance of the natural, cultural, and marine resources located in Puna. A few of the participants suggested establishing a youth program where local *keiki* can experience and learn about the WKOP flora and fauna.

Members of the different non-profit organizations in Puna also expressed an interest in stewarding the forest and educating people to properly *mālama* WKOP. Additionally, some *kūpuna* and *kama'āina* also offered to participate in outreach educational efforts in the forest. One *kama'āina* shared that he supports teaching the younger generation about local traditions and customs so that one day they can step up and take the lead in caring for the forest.

Many community members acknowledge that WKOP is the perfect place to teach the youth how to hunt, gather, and *mālama* the forest. It is an ideal outdoor classroom to teach the youth first hand about their forest and their communities. Specific ideas expressed included OHA working with the local DOE schools and allowing the students to access the forest on a consistent basis so they become truly connected to WKOP; establishing internships for forestry students at Hawai‘i Community College; and creating a resource management field school to train youth to *mālama* the natural and cultural resources of WKOP from both a Hawaiian and scientific perspective.

As one *kama‘āina* stated, “*The time is ideal to support and strengthen efforts to engage, educate, and collaborate with Puna kama‘āina. Have the community and children participate in a meaningful way. Teach them to become good stewards in their own back yard. Our future is the little ones. Get them excited about the rain forest.*”

Dissemination of Information and Knowledge

In many cases, researchers and other professionals come into communities to conduct various research and field studies, and all too often, the results of these efforts do not get disseminated. Information and data is often time sensitive and short lived – it’s something that is vibrant and needs to be shared with interested audiences be they researchers, professionals, organizations, or the involved community. Thus, Kumupa‘a recommends that portions of this Ethnohistorical Study should be provided to the Pahoia and Kea‘au public libraries as well as the local schools. Possibly, an informal gathering and presentation can be arranged so this information can be shared with the community. This kind of “openness” communicates to the community that its cooperation, collaboration, and involvement are appreciated and respected.

Kumupa‘a believes that the research and data compiled through this study could also be developed and incorporated into a school, place-based curriculum (especially for schools situated in Puna). This will enable students who reside and attend schools in the area to develop a deeper understanding of and greater respect and appreciation for their unique and special place. By learning about and understanding where one comes from, youth can develop a sense of confidence and pride in their *‘āina*, history and traditions. It is essential that the *keiki* of Puna understand and appreciate the unique history, traditions, and stories of their community. The history of Puna is steeped in rich *mo‘olelo* that goes back generations connect *kama‘āina* to many powerful and respected *akua* and *ali‘i*. These stories need to be kept alive and continually retold to ensure they are never forgotten.

In the future, research conducted in the WKOP area should be used to help educate and expand the knowledge base of the involved communities. A number of mechanisms can be utilized to share compiled research information and knowledge – place-based educational programs, programs to host school groups and fieldtrips, and organized tours for visitors (as well as interested locals). Information and data can also be disseminated through presentations, publications, videos, handouts, and brochures.

Management Efforts

As noted in the previous section on management threats, the community has numerous concerns regarding how the forest has been managed and continues to be managed today. Almost every participant noted the lack of DLNR and OHA presence in the forest, and an absence of meaningful cooperation and collaboration between the two agencies. Community members provided the following management recommendations:

- * *Everyone needs to be on the same page – OHA, DLNR, and the community.*
- * *The choices OHA makes for this place need to be well thought out so it's not depleting our resources. This process is important in how the land is going to be used and managed.*
- * *Administrative rules need to be developed. Current forest reserve statutes may limit OHA from potential options, however, OHA is still required to adhere to conservation standards set by the State and Forest Legacy rules. DLNR has offered to assist in this process so OHA should utilize this option while they can.*
- * *Look at Native American rules and management processes.*
- * *Legislation needs to be established mandating that WKOP should go to the new Hawaiian independent nation after OHA is dissolved.*
- * *To better meet its management objectives, OHA should work with the invasive species program, U.S. Forest Service, Carnegie Airborne Institute, community associations, and the Three Mountain Alliance. Do not re-invent the wheel -- work with the organizations and people who have decades of expertise in natural resource management.*
- * *OHA should look at the Kamehameha Schools natural and cultural resources program within the Land Assets Division. They have a well-integrated cultural and natural resources management program that can be replicated at OHA.*

Management Staff

Management staffing was another problem area that was frequently brought up by a number of community participants. Individuals familiar with the WKOP management staff recommended that personnel experienced in forestry, Hawaiian biology, resource management, and/or cultural expertise should manage the forest reserve.

Another valuable community member recommendation was that OHA establish its own fish and wildlife division as well as its own historical preservation officers, similar to the

Tribal Historic Preservation Offices in the Native American communities. This would allow OHA to develop its own appropriate rules and regulations to manage the forest.

One *kama‘āina* was adamant that the former DLNR WKOP Forest Reserve Coordinator, should be back on the project because of their competence, reputation, warm rapport, and the trusting relationship they established with the community. It was noted that this individual has ample forest experience, the necessary background and training, and is from the Puna community; consequently, they would be an ideal WKOP land manager. Moreover, this participant cautiously warned that it would be difficult for the management of WKOP to move forward without this individual back on the team.

Other recommendations regarding the WKOP management staff included the following direct quotes:

- * *OHA has a perfect opportunity to hire young native Hawaiians to perform operational field duties. Contractors are fine in the beginning, but OHA should give thought to creating its own operational structure to conduct all type of management actions. This increases employment opportunities on the Big Island, and provides a stable work force for the program.*
- * *It is highly recommended that OHA hire a professional natural resource manager/administrator with full authority to make decisions.*
- * *OHA should consider separating their natural resources program from the land asset division.*

Management Plan

Kumupa‘a recommends that long-range management plans for WKOP need to be developed in conjunction and coordination with the larger Puna community. All of the concerned and involved parties should be included in the planning process because all have an interest in and connections and *kuleana* to WKOP. This will help ensure that a broader community base is continuously involved in planning, and a collective community voice will be incorporated into the long-term stewardship of WKOP. Specific management recommendations from community participants included the following *mana‘o*:

- * *Currently there is no guiding vision of what OHA wants to do with Wao Kele O Puna. This cannot be done by any outside entity, it must come directly from OHA, and it is absolutely imperative that the Board of Trustees and OHA’s administrative branch work jointly on this. Clear goals and objectives need to be identified.*

On the other side of the spectrum, one *kama‘āina* stated, “OHA can’t wait for the management plan to be developed to start taking care of WKOP. We have been waiting

long enough for things to be done at WKOP and we can't wait two to three more years for a report to be written before we can mālama our forest."

Access

There is currently limited public access to WKOP, and the only legal public access route is located above the town of Pahoia town and goes through Ka'ohē Homestead. Leialoha further explains the restricted access conditions into the reserve:

The access road traverses through neighborhood communities along a county roadway and through a private parcel owned by Olsson Trust, of which OHA owns road easement rights through Olsson Trust properties and into the reserve. Though other limited access points are available, they require permission from private land owners or written negotiations with community associations for access usually for a limited period of time, prior to entering the reserve through these access points. Most access roads, particularly those in the upper Puna sub-divisions leading to the reserve, are privately held by community associations and its members. This has been a source of contention from owners who are being trespassed upon by private individuals, who use these access points without the permission of the land owner or community association. Though the reserve itself is considered public-lands, the majority of the reserve is surrounded by privately held parcels that buttress the reserve. In essence, with exception being the legal access road in lower Puna, the reserve itself is basically land-locked. There are two other public easements possible, but one would require a day-long hike through the Hawaii Volcanoes National park to get to the boundaries of Wao Kele O Puna, and the other route through the Kahau'ale'a Natural Area Reserve, which is currently closed by the State and County of Hawaii due to the continuous eruption of Pu'u 'O'o. Though individuals have historically entered the reserve this way, they too often exit and trespass onto privately owned parcels, which has been a continuous source of disputation." (Leialoha 2013:3-4)

A few *kama'āina* familiar with the access road issues suggested that OHA should either try and acquire the land from Olsson (access road would be owned by OHA) or OHA should negotiate with Olsson to donate the access road to OHA enabling Olsson to obtain a tax write off for the transaction. This would be ideal for OHA – the organization would then own the entire access road ensuring that access to the forest would remain intact.

It was also suggested by three participants that OHA should provide improved maintenance for the access road. This should include killing the invasive weeds growing along the road and planting native species that would keep the invasive species from spreading into the forest. Another recommendation involved implementing measures to limit the amount of invasive species brought into WKOP. The recommendation included designating an individual to survey and monitor access to the forest to ensure visitors do

not bring alien plants into the forest either in or on their vehicles or on their clothes or shoes.

At least one staff position responsible for maintenance and access should be established at WKOP. This individual would be responsible for monitoring access into the forest. Additionally, it was suggested by community members that the staff person would help ensure that individuals accessing the forest do not purposely or inadvertently introduce any invasive species. Additionally, a separate staff person should be hired to oversee all security matters at WKOP (being present during the day to monitor and/or report illegal activities to the proper authorities). This staff person could be hired from the Puna area (familiar with individuals and resources from the area) to encourage and support linkages with the local community.

Numerous community members complained that currently many of these special areas in Puna are fenced, gated, and closed. Some of the participants were frustrated that places they once hunted, fished, and gathered resources have been blocked and access has been denied. Consequently, providing reasonable community access to these sites (including WKOP) makes good sense on a number of levels. Such action can only serve to foster and strengthen community good will and responsibility and will encourage further opportunities for shared cooperation and collaboration. Interested and responsible volunteer community members can be used to help maintain, safeguard, and preserve these sites. As previously mentioned, local students and community groups can utilize place-based educational programs on these lands to learn first-hand about local, Puna history, customs, and traditions.

Protective and Interpretive Signage

A few community participants recommended that signs are needed at the WKOP to both educate visitors about the significance of the site and to deter visitors from inappropriate behavior. Some of the community's comments are included below:

- * *The signs should state that access to WKOP is for traditional Hawaiian practices only and that there should be no gathering for commercial purposes, only for traditional practices.*
- * *Signs could designate plant gathering areas and lists of plants that are acceptable to gather. This would allow certain areas of the forest to rest and rejuvenate from time to time.*

Kumupa'a recommends that interpretive signs should be created by OHA with input from the community and be erected as soon as possible at WKOP. These signs could provide historical, cultural, and environmental information for visitors to educate them about the significance of the forest. In addition, there needs to be signage along the access road informing visitors to respect the *wahi pana* and to avoid inappropriate behavior such as littering, bringing in invasive plant species, harvesting natural resources, entering lava tube caves, etc.

Financial Generation

Community participants we spoke with expressed mixed feelings regarding OHA potentially starting commercial ventures in the forest. While some community members were adamant there should be absolutely no commercial activities at WKOP, others felt that culturally appropriate, small-scale commercial activities could provide financial support to the community and help the forest become self-sustainable. It was shared that unemployment is a difficult problem in Puna and that jobs could be created at WKOP to help get more locals back to work. One *kama'āina* suggested that OHA, “*Hire local youth, train them, and provide work experiences to help build their confidence.*” Another shared, “*Unemployment could be helped by us growing more of our own food, and encouraging our youth to be farmers.*” Other community members shared the following suggestions:

- * *WKOP could be a place to host fundraising events to make money for the community and youth scholarships.*
- * *Propagate maile. Maile isn't a fast growing plant so it takes patience and money to grow. And you have to clean the undergrowth from weeds so it can grow properly.*
- * *We could utilize and sell forest products, such as wood, as long as it is culturally compatible.*
- * *OHA should check into carbon credits for WKOP to care and preserve the native species that grow in the forest. You get carbon credits for not cutting trees down, and then you can buy and sell carbon credits to anyone in the world.*
- * *We could have an authentic lū'au at WKOP where there is an imu and a cultural show with hula. Charge visitors and tourists money to come to this event and then the money can go back to the local community.*
- * *Cultural center could be built to do arts and crafts, lei making, singing, and chanting. Then we could sell locally made crafts there.*
- * *The community should strategize on what they don't want OHA to do to Wao Kele O Puna. For example, I don't want OHA to economically sustain Wao Kele O Puna if it's going to deplete/sacrifice our resources, if it's going to sacrifice our water and if it's going to sacrifice our air. There should be criteria on what they shouldn't do because there is many ways to make money.*

Future Research

A primary purpose of this study was to compile a comprehensive resource to better understand the larger cultural landscape of Puna including its environment, *mo'olelo*, cultural resource, pre-contact and post-contact history, land tenure, contemporary significance, and future management. This study should be viewed as a resource to be utilized by any interested party to learn about and better understand and appreciate the cultural value and richness of WKOP. While this study might be considered one of the most comprehensive compilations of information on WKOP, this endeavor marks only a beginning effort to research and truly understand the importance and very unique nature and special significance of these places. Kumupa'a believes it is imperative that OHA, along with other organizations, scholars, professionals, and *kama'āina* be encouraged and supported to undertake needed follow-up research and study.

Oral Histories of Puna Kūpuna and Kama'āina

In Hawai'i, each passing year witnesses the loss of many of our cherished *kūpuna* – in some ways, perhaps our most valued resources. While we were able to “talk story” with a few *kūpuna* during the course of this project, there remain many more *kūpuna* in Puna that we were unable to interview. Consequently, Kumupa'a recommends that additional oral history and ethnography projects be undertaken to more fully capture and document these in-person, first-hand experience and accounts that comprise an invaluable part of our tradition, culture, and history.

The voices of our *kūpuna* must be documented, preserved, and shared to ensure that their legacy can be passed on to future generations. Possibly, video documentation and innovative media and technology can be utilized. Perhaps a cooperative venture could be initiated to establish a Puna historical and cultural museum to house these oral histories and other valuable artifacts, photos, and materials. Especially valuable, however, are the personal experiences of our *kūpuna*. By properly documenting the stories of the landscape through the direct words of our *kūpuna*, the life of the land will be remembered and better appreciated for generations to come.

Native Hawaiian Researchers and Resource Managers

OHA should be commended for its willingness to encourage, support, and work with Native Hawaiian archaeologists, resource managers, researchers, and related professionals. This project is just one example of how OHA has taken the initiative to hire and collaborate with Native Hawaiian researchers. By doing so, OHA continues to support efforts to empower Native Hawaiians to better respect, understand, and share their history, tradition, and culture and to relate their own personal *mana'o* about the past, present, and future.

Increased involvement of Native Hawaiians in this field can effectively reshape how cultural resource management (CRM) is conducted and perceived in Hawai'i. CRM work carried out by and for the benefit of the Hawaiian community serves to help ensure the appropriate protection and preservation of traditional Hawaiian cultural sites and

practices. As more Native Hawaiians become involved in CRM, this field can become a tool for the continued perpetuation of the Hawaiian culture.

Participation of Native Hawaiians in CRM also helps to shift the perceptions communities have of the profession and helps them to better understand that CRM can be used as an effective mechanism to benefit and truly assist Native Hawaiian initiatives. Native Hawaiian cultural resource practitioners can bridge traditional knowledge with scientific insights to help forge a culturally appropriate and scientifically grounded process to effectively *mālama* Hawai‘i’s cultural sites.

Kumupa‘a hopes that this study is the first of many subsequent OHA initiatives to provide greater opportunities for Native Hawaiians to develop and further refine the necessary tools, knowledge, competence, and resources to properly conduct research and to correctly, appropriately, and respectfully document, present, and preserve the history and stories of Hawai‘i’s *kūpuna* and *‘āina*.

CONCLUSION

Based on community interviews and historical documents concerning the cultural history of Puna, it appears that the *mauka* forest regions of Puna were noted and often utilized for specialized resource procurement activities. These activities occurred in areas containing important resources for collecting medicinal plants, birds catching, harvesting hardwoods, and spiritual practices. Pre-Contact visitation to the upland forest of WKOP is evidenced through ancient and historic trails and lava tube complexes. Wao Kele O Puna's post-Contact history includes activities such as gathering of *pulu* and sandalwood, ranching, sugar plantations, and logging. Today, remnants of these activities such as old railroad tracks and artifacts like historic glass bottles can still be found in WKOP. Currently, cultural traditions continue to be practiced and perpetuated within Wao Kele O Puna as illustrated in our ethnographic interview section. Notably, Wao Kele O Puna is still used to gather plants for medicinal and cultural purposes; to hunt pigs for food; and most importantly, to conduct cultural protocols to connect with *nā akua*, *'aumākua*, and *kūpuna*.

Essentially, this study confirmed what many have already recognized – namely, that Wao Kele O Puna is a *wahi pana* rich with precious natural and cultural resources and a unique spiritual and sacred site for *kānaka 'ōiwi* today. *Ike*, or knowledge, that has been preserved in *mo'olelo*, *'ōlelo no'eau*, *mele*, and *inoa 'āina* helps account for the region's strong sense of place and has contributed to preserving the history and traditions of Wao Kele O Puna's unique cultural landscape. A sense of place is an important foundation for Hawaiians as it provides historical, spiritual and cultural identity. Sustaining a *pono* connection to the *'āina* is considered essential for the balance of all life and for the well being of our *lā hui*. Consequently, maintaining traditional and customary practices today at places like WKOP connects *kānaka 'ōiwi* to the *'āina* and *kūpuna* and provides a *pa'a* foundation to journey into the future.

The mission of the Office of Hawaiian Affairs is “*To mālama (protect) Hawai'i's people and environmental resources and OHA's assets, toward ensuring the perpetuation of the culture, the enhancement of lifestyle and the protection of entitlements of Native Hawaiians, while enabling the building of a strong and healthy Hawaiian people and nation, recognized nationally and internationally.*” We believe this Ethnohistorical Study has truly helped to achieve this mission by identifying, capturing, and documenting the natural, cultural, historical, and contemporary significance of WKOP. Ultimately, we hope this study will assist OHA and the community to better understand and appreciate the importance of WKOP by providing a holistic compilation of various materials and data. Hopefully, this work will help establish a course of action to appropriately honor, steward, and manage this *wahi pana* in perpetuity. The community, from a personal and Hawaiian perspective, has provided valuable information on what it considers to be ideal management of this sacred place. We hope that we have been able to properly convey their concerns and recommendations and that thoughtful and appropriate actions can be undertaken to implement their *mana'o*. Wao Kele O Puna is a place that many Native Hawaiians have fought to protect, safeguard, and preserve. Consequently, we must continue to honor and respect this special history by maintaining our vigilant efforts to *mālama* this special forest.

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APPENDIX A – COMMUNITY PARTICIPATION LETTER

Welina mai,

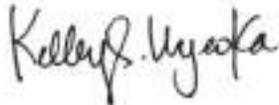
Kumupa‘a LLC, a Native Hawaiian owned and operated cultural resource management company passionate about documenting and perpetuating our cultural sites, practices, and stories, is working with the Office of Hawaiian Affairs to conduct a Cultural Resource Assessment of Wao Kele O Puna Forest Reserve. The purpose of this study is to document the traditional and contemporary significance of Wao Kele O Puna so it can be better understood and appropriately managed.

We are eager to collaborate with individuals and ‘ohana who have knowledge of Wao Kele O Puna and the surrounding areas. In particular we hope to gather information that relates to:

- * **‘Ohana and individual connections and relationships to the area**
- * **Mo‘olelo, place names, mele, oli, hula**
- * **Past and present cultural practices and protocols**
- * **Knowledge of natural and cultural resources**
- * **Traditional and historic land use and ownership**
- * **Traditional and historic events and persons**
- * **Concerns and suggestions regarding future stewardship of WKOP**
- * **Referrals of kūpuna and kama‘āina who might be willing to share their cultural knowledge of the area**

If you have any questions or mana‘o to share please contact me at kuyeoka@hawaii.edu, 808-265-3284, or Momi Wheeler at oopu5@yahoo.com, 808-430-2557. We look forward to collaborating with you on this endeavor to document the unique cultural significance of Wao Kele O Puna.

Me ka ha‘aha‘a,



Kelley L. Uyeoka
Kumupa‘a LLC

APPENDIX B – WAO KELE O PUNA INTERVIEW THEMES

Background Information:

- Name:
- When and where were you born:
- Where did you grow up:
- Mother & Father:
- Grandma & Grandpa:
- Occupation /Affiliation:
- Area of current residence:
- How long have you lived here:
- Personal/Family connection to the area:

Mo‘olelo, Place Names, Mele, Oli:

- Legends & mo‘olelo:
- Akua & ‘Aumakua:
- Mele & Oli:
- Place Names
 - Origin of Wao Kele O Puna name:

Cultural and historic sites:

- Cultural sites:
 - Heiau
 - Trails
 - Burials/Lava tubes
- Historical sites (railways, plantation, missionary):

Historical Information:

- Past or present land ownership and use?
 - Kuleana lands
- Historic uses of the area:
 - Sandalwood, pulu, timber, sugar, railway, ranching
- Historic events
- Historic Persons

Natural Resources:

- Native plants and trees
 - Significance of these resources:
 - Uses of these resources:

- Water resources, springs, streams:
- Winds and rains:
- Mountains, pu‘u, caves:
- Native birds:

Cultural Practices (protocols, gathering, hunting, hula, la‘au lapa‘au, ho‘okupu):

- Past cultural practices:
- Current cultural practices:
 - How did you learn the activities and how long have you been doing them:
- Past or present cultural protocols observed:

Knowledge Sources:

- Where does your knowledge come from:
 - Your own direct knowledge
 - Knowledge reported to you by ‘ohana
 - Knowledge reported to you by others
 - Knowledge from sources such as written sources, archival sources, digital

Preservation Concerns and Recommendations:

- What changes in the landscape, practices and uses of natural and cultural resources have you observed in your lifetime:
- Do you have any, or know of any concerns the community might have related to cultural practices in the vicinity:
- Do you have any recommendations regarding site management or protection, and development in the area:
- How do you feel about this study being conducted? Do you feel it will benefit the ‘āina and the community:
- Should all the cultural information you are sharing with us be included in the study? Is there any information that you do not want to be public?

References:

- Can you refer us to any other individuals or organizations we should talk to?

APPENDIX C – INFORMED CONSENT FORM

Kumupa‘a appreciates the generosity of individuals who are willing to share their knowledge of the wahi pana of Wao Kele O Puna (WKOP). This mana‘o will be used in a Cultural Resource Assessment for the Office of Hawaiian Affairs (OHA). The primary purpose of this study is to help fulfill OHAs desire to document and learn about the history, communities, and cultural resources of their lands in WKOP to encourage responsible land stewardship and management.

Kumupa‘a understands our responsibility in respecting the wishes and concerns of the community members participating in this study. We promise to observe the following procedures:

1. The interview will not be recorded without your knowledge and explicit permission.
2. You will have the opportunity to review the written transcript and summary of your interview. At that time you may make any additions, deletions or corrections you wish.
3. You will be given a copy of the interview transcript and summary for your records.
4. You will be given a copy of this release form for your records.
5. You will be given a copy of any photographs taken of you during the interview.

For your protection, we need your written confirmation that:

1. You consent to the use of the complete transcript and/or interview quotes for the purposes of this study. Yes No
2. If a photograph is taken during the interview, you consent to the photograph being included in this study. Yes No

I, _____, agree to the procedures outlined above and, by my
(Please print your name here)
signature, give my consent and release of this interview and/or photograph to be used as specified.

(Signature)

(Date)

APPENDIX D – PLANTS FOUND IN WAO KELE O PUNA

Table 14. Plant Species Found in WKOP (Burtchard and Moblo 1994; Char and Lamoureux 1985a)

Botanical Name		Hawaiian Name	Common Name	Biographic Status	Traditional Hawaiian Uses
First Group: Pteridophyta	Adiantaceae: <i>Adiantum hispidulum</i>		Maiden-hair fern	X	
	<i>Adiantum raddianum</i>		Maiden-hair fern	X	
	Aspidiaceae: <i>Dryopteris wallichiana</i>	Laukahi		I	
	Aspleniaceae: <i>Asplenium contiguum</i>		Spleenwort	E	
	<i>Asplenium lobulatum</i>	Pi'ipi'ilaumanamana, Anali'i	Spleenwort	I	
	<i>Asplenium nidus</i>	'Ēkaha	Birds Nest Fern	I	The black midrib is used like the ama'u fern for decorating panadanus hats (Pukui and Elbert 1986:39)
	<i>Asplenium polyodon</i>	Pūnanamanu	Sickle Spleenwort	I	
	<i>Asplenium unilaterale</i>	Pāmoho		I	
	Athyriaceae: <i>Athyriopsis japonica</i>			X	
	<i>Athyrium microphyllum</i>	'Ākōlea		E	
	<i>Diplazium sandwichianum</i>	Hō'i'o		E	Young fronds are eaten raw, much like with raw freshwater shrimp or salted salmon; only Orientals cook this fern (Pukui and Elbert 1986:75)
	Blechnaceae: <i>Blechnum occidentale</i>		Blechnum fern	X	
	<i>Sadleria cyatheoides</i>	'Ama'u, Ma'u, Ma'uma'u, Pua'a'ehu'ehu, 'Ama'uma'u		E	Used to thatch houses, bunches of fronds cut from the 'ama'u tree fern or sheaths from the niu inflorescence were tied on with 'ie'ie or 'aha cordage (Abbott 1992:70)
	<i>Sadleria pallida</i>	'Ama'u, Ma'u, Ma'uma'u, Pua'a'ehu'ehu, 'Ama'uma'u, 'Ama'u'i'i, 'I'i, 'I'i'i		E	
	Dennstaedtiaceae: <i>Microlepia strigosa</i>	Palai, Palapalai		I	Signified Hi'iaka, patron of hula dancers (Abbott 1992:118). Used in Makahiki ceremonies and associated with Lono
	Dicksoniaceae: <i>Cibotium chamissoi</i> (changed to <i>C. menziessii</i>)	Hāpu'u'i'i		E	
	<i>Cibotium glaucum</i>	Hāpu'u		E	Young stems were formerly used to make hats; the pulu fibers were used as a dressing and to embalm the dead and later as stuffing for pillows and mattresses. The starchy core has been used for cooking and laundry, the outer fibrous part to line or form baskets for plants (Pukui and Elbert 1986:59)
	<i>Cibotium hawaiiense</i> (changed to <i>C. chamissoi</i>)	Meu	Hawaiian Tree Fern	E	
	Elaphoglossaceae: <i>Elaphoglossum</i>	'Ēkaha'ula, HoesaMāui	Tongue Fern	E	

Botanical Name	Hawaiian Name	Common Name	Biographic Status	Traditional Hawaiian Uses
<i>alatum</i>				
<i>Elaphoglossum crassifolium</i>	‘Ēkaha‘ula, HoesaMāui	Stag’s Tongue Fern	E	
<i>Elaphoglossum hirtum</i>	‘Ēkaha‘ula, HoesaMāui	Hairy Stag’s Tongue Fern	E	
<i>Elaphoglossum pellucidum</i>	‘Ēkaha‘ula, HoesaMāui		E	
<i>Elaphoglossum wawrae</i>	‘Ēkaha‘ula, HoesaMāui, Laukahi	Stag’s Tongue Fern	E	
Gleicheniaceae: <i>Dicranopteris emarginata</i>	Uluhe, Unuhe	False Staghorn	E	
<i>Dicranopteris linearis</i>	Uluhe		I	
Grammitaceae: <i>Adenophorus hymenophylloides</i>	Pai, palaihuna		E	
<i>Adenophorus periens</i>	Palailā‘au		E	
<i>Adenophorus pinnatifidus</i>			E	
<i>Adenophorus tamarscinus</i>	Wahine noho mauna		E	
<i>Adenophorus tripinnatifidus</i>			E	
<i>Grammitis hookeri</i>	Maku‘elauli‘i		E	
<i>Grammitis tenella</i>	Mahina lua		E	
<i>Xiphoteris saffordii</i>	Kihi		E	
Hemionitidaceae: <i>Pityrogramma calomelanos</i>		Gold fern, silver fern	X	
Hymenophyllaceae: <i>Callistopteris baldwinii</i>			E	
<i>Gonocornus minutus</i>			I	
<i>Mecodium recurvum</i>	‘Ōhi‘akū		E	
<i>Sphaerocionium lanceolatum</i>	Palaihinahina		E	
<i>Sphaerocionium obtusum</i>			E	
<i>Vandenboschia cyrtotheca</i>			E	
Lindsaeaceae: <i>Lindsaea ensifolia</i>			I	
<i>Sphenomeris chinensis</i>	Pala‘ā, Palapala‘ā, Pā‘ūopala‘e	Lace fern	I	Formerly a brown dye was extracted from the fronds (Pukui and Elbert 1986:307). Used in traditional lei pua (Abbott 1992:127). Old leaves yield a brownish red color for dyes; fronds were used for temporary or perishable lei’s (Krauss 1993:67, 77 – 78)
Lycopodiaceae: <i>Lycopodium cernuum</i>	Wawae‘iole, Huluhulua‘iole, Hulu‘iole	Christmas Tree Club Moss	I	
<i>Lycopodium phyllanthum</i>	Wawae‘iole	Club Moss	E	Used in lei’s (Krauss 1993:77)
<i>Lycopodium polytrichoides</i>	Wawae‘iole		E	
<i>Lycopodium venustulum</i>	Wawae‘iole		I	
Marattiaceae: <i>Marattia douglasii</i>	Pala, Kapua‘ilio	Mules Foot Fern	E	Frond stems baked for famine food; the mucilaginous water resulting

Botanical Name	Hawaiian Name	Common Name	Biographic Status	Traditional Hawaiian Uses
				from slicing and soaking the raw stems in water was used medicinally; stems were mixed with <i>maile</i> to enhance its fragrance; the fern was also used in ceremonies (Pukui and Elbert 1986:307). Fronds were used for temporary or perishable lei's (Krauss 1993:77)
Nephrolepidaceae: <i>Nephrolepis biserrata</i>		Fishtail sword fern	X	
<i>Nephrolepis cordifolia</i>	Kupukupu, 'Ōkupukupu	Swordfern	I	
<i>Nephrolepis exaltata</i>	Kupukupu, Ni'ani'au, 'Ōkupukupu, Pāmoho	Swordfern	I	It was sometimes added to the hula alter to Laka for knowledge to kupu (sprout) (Pukui and Elbert 1986:186)
<i>Nephrolepis multiflora</i>		Hairy sword fern	X	
Ophioglossaceae: <i>Ophioglossum pendulum</i>	Puapua moe, Laukahi	Adder's Tongue	E / I	
Polypodiaceae: <i>Phelbodium aureum</i>	Laua'ehaole		X	
<i>Phymatosorus scolopendria</i>	Laua'e, Lauwa'e		X	When crushed, its fragrance suggests that of maile; pieces were strung in pandanus leis between the keys (Pukui and Elbert 1986:194)
<i>Pleopeltis thunbergiana</i>	'Ēkaha'ākōlea, Pākahakaha		I	
Psilotaceae: <i>Psilotum complanatum</i>	Moa, Pipi, Moanahele	Flat Stemmed Whiskfern	I	Hawaiians used them medicinally (the spore powder as a purge) and their children played a game with them (Pukui and Elbert 1986:248)
<i>Psilotum nudum</i>	Moa, Pipi, Moanahele, 'O'omoa	Upright Whiskfern	I	Hawaiians used them medicinally (the spore powder as a purge) and their children played a game with them (Pukui and Elbert 1986:248)
<i>Psilotum complanatum x nudum</i>		Hybrid moa	I	
Pteridaceae: <i>Pteris vittata</i>			X	
Selaginellaceae: <i>Selaginella arbuscula</i>	Lepelepeamoā		E	Used for lei's, braided with rosebuds (Pukui and Elbert 1986:204)
Thelypteridaceae: <i>Amauropelta globulifera</i>	Palapalaikamapua'a		E	
<i>Christella cyatheoides</i>	Kikawaiō, Pakikawaiō		E	Roots and young fronds were eaten raw; a mixture of roasted and crushed kukui nut kernels, roasted young taro leaves and the very young fronds of the kikawaiō fern was eaten as a tonic by a patient recovering from a recent serious illness (Krauss 1993:15 and 103)
<i>Christella dentate</i>		Downy woodfern	X	
<i>Christella parasitica</i>		Woodfern, oakfern	X	
<i>Macrothelypteris torresiana</i>			X	
<i>Pneumatopteris hudsoniana</i>	Laukahi		E	Used externally to ripen and heal boils, internally for diabetes and other ailments (Pukui and Elbert 1986:195)
<i>Pneumatopteris sandwicensis</i>			E	
<i>Pseudophegopteris keraudreniana</i>	Waimakanui		E	
Vittariaceae: <i>Vittaria elongate</i>	Oheohe		I	

Botanical Name		Hawaiian Name	Common Name	Biographic Status	Traditional Hawaiian Uses
Second Group: Monocotyledonae	<u>Araceae:</u> <i>Anthurium</i> <i>hybrids</i>		Anthurium	X	
<i>Philodendron sp.</i>			Philodendron	X	
<u>Commelinaceae:</u> <i>Commelina diffusa</i>		Honohono		X	
<u>Cyperaceae:</u> <i>Carex wahuensis</i>				E	
<i>Cyperus javanicus</i>		‘Ahu‘awa, ‘Ehu‘awa		I	The dried fibers served to stir niu cream or strain ‘awa; otherwise, the fibers were twisted into two or three ply cordage; in addition to its major recorded function as a lashing in house construction, it had some minor uses, including the role in applying “cord-rubbing” design on kapa (Abbott 1992:62)
<i>Cyperus sp.</i>				X	
<i>Fimbristylis dichotoma</i>			Tall fringe rush	I	
<i>Kyllinga brevifolia</i>		Kili‘o‘opu	Kyllinga	X	
<i>Machaerina angustifolia</i>		‘Uki		I	
<i>Machaerina mariscoides</i>		‘Uki, ‘Ahaniu		E / I	The mahiole-style crest of the ipu seems to consist of inflorescences of the sedge ‘uki or possibly the pala fern (<i>Marattia douglasii</i>) which was used in the Makahiki ceremonies and thus associated with Lono (Abbott 1992:116)
<i>Pycnus polystachyos</i>				I	
<i>Rhynchospora sclerioides</i>		Kuolohia, Pu‘uko‘a	Beakbrush	E / I	
<i>Rhynchospora sp.</i>				X	
<i>Uncinia uncinata</i>				I	
<u>Dioscoreaceae:</u> <i>Dioscorea pentaphylla</i>		Pi‘ia, pi‘a	Wild Yam	P	Usually used only as famine food (Krauss 1993:12)
<u>Gramineae:</u> <i>Andropogon glomeratus</i>			Bush beard grass	X	
<i>Andropogon virinicus</i>			Broomsedge	X	
<i>Axonopus affinis</i>			Narrow leafed carpet grass	X	
<i>Axonopus compressus</i>			Broad leafed carpet grass	X	
<i>Cynodon dactylon</i>		Mānienie	Bermuda grass	X	
<i>Digitaria fuscescens</i>			Creeping kukaepua‘a	X	
<i>Digitaria radicata</i>				X	
<i>Isachne distichophylla</i>		‘Ohe		E	Hula instruments: pū‘ili, ‘ohe kā‘eke‘eke, ‘ohe hano ihu and ‘ohe kani;

Botanical Name	Hawaiian Name	Common Name	Biographic Status	Traditional Hawaiian Uses
				used as kapa stamps; kinolau or body form of the god Kāne; used in lama lamps, lengths of 'ohe filled with kukui kernals (Abbott 1992: 15, 54, 77 and 120 – 122)
<i>Melinis minutiflora</i>		Molasses grass	X	
<i>Oplismenus hirtellus</i>	Honohonokukui	Basket grass	X	
<i>Paspalum conjugatum</i>	Mau'uhilo	Hilo grass	X	
<i>Paspalum orbiculare</i>	Mau'ulaiki	Rice grass	X	
<i>Paspalum urvillei</i>		Vasey grass	X	
<i>Rhynchelytrum repens</i>		Natal redtop grass	X	
<i>Sacciolepis indica</i>		Glenwood grass	X	
<i>Schizostachyum glaucifolium</i>	'Ohe	Hawaiian bamboo	P	Hula instruments: pū'ili, 'ohe kā'eke'eke, 'ohe hano ihu and 'ohe kani; used as kapa stamps; kinolau or body form of the god Kāne; used in lama lamps, lengths of 'ohe filled with kukui kernals (Abbott 1992: 15, 54, 77 and 120 – 122)
<i>Setaria geniculata</i>		Perennial foxtail grass	X	
<i>Setaria palmaefolia</i>		Palm grass	X	
<i>Sporobolus africanus</i>		African dropseed	X	
<u>Iridaceae: Tritonia crocosmaeflora</u>		Montbretia	X	
<u>Joinvilleaceae: Joinvillea ascendens</u>	'Ohe		E	Hula instruments: pū'ili, 'ohe kā'eke'eke, 'ohe hano ihu and 'ohe kani; used as kapa stamps; kinolau or body form of the god Kāne; used in lama lamps, lengths of 'ohe filled with kukui kernals (Abbott 1992: 15, 54, 77 and 120 – 122)
<u>Juncaceae: Juncus effuses</u>		Bog rush	X	
<i>Juncus planifolius, J. tenuis</i>			X	
<u>Liliaceae: Astelia menziesiana</u>	Kaluaha, Pua'akuhinia		E	Leaves used either alone or with one or more flowers in lei's (Krauss 1993:77)
<i>Cordyline terminalis</i>	Kī	Tī	P	The leaves were put to many uses by the Hawaiians, as for house thatch, food wrappers, hula skirts, sandals; the thick, sweet roots were baked for food or distilled fro brandy, known as 'okolehao (Pukui and Elbert 1986:145). Tī leaf functioned as a plate; used in hukilau nets to alarm the fish; tī leaves were used not for medicines themselves but rather were part of the healing apparatus: wrapped around warm stones to serve as hot packs, used in poultices and applied to fevered brows; used in ceremonial proceedings (Abbott 1992: 84, 95, 101, 116).
<i>Smilax melastomifolia</i>	Hoi kuahiwi, 'Aka'awa, Pi'oi, Uhi, Ulehihi	Catbrier, Greenbrier	E	
<u>Musaceae: Musa spp.</u>	Mai'a	Banana	P	Some kinds are eaten raw, others cooked; traditionally, banana's were taboo to women except certain ones with yellow flesh; it was considered

Botanical Name	Hawaiian Name	Common Name	Biographic Status	Traditional Hawaiian Uses
				bad luck to dream of banana's, to meet a man carrying banana's or to take them in fishing canoes (Pukui and Elbert 1986:220). Kinolau or body form of the god Kanaloa; used as sacrificial offerings; used in kapa production; dried leaf sheaths of mai'a was used for thatching houses; hula skirts were made from strips of mai'a fiber, hau bark or ti leaf (Abbott 1992:15, 17, 51, 69 and 122)
Orchidaceae: <i>Arundina bambusaefolia</i>		Bamboo orchid	X	
<i>Phaius tankervilleae</i>			X	
<i>Spathoglottis plicata</i>		Philippine ground orchid	X	
Palmae: <i>Pritchardia beccariana</i>	Loulu		E	Used for making battle spears (Abbott 1992:111). Hats are plaited of its leaves bleached white (Pukui and Elbert 1986:212)
Pandanaceae: <i>Freycinetia arborea</i>	'Ie'ie		E	One of five plants used on the hula alter; also used for basketry (Pukui and Elbert 1986:94). Used as cordage, fish traps and featherwork; a branch was placed on the hula alter, kinolau of the demi-goddess Lauka'ie'ie (Abbott 1992:63, 84, 105, 107 – 109 and 117 – 118)
<i>Panadanus odoratissimus</i>	Hala	Panadanus	I	Many uses: leaves (lau hala) for mats, baskets, hats; the yellow to red fruit sections for lei's, brushes; male flowers to scent kappa, their leaflike bracts to plait mats; the aerial root tips is a good source of vitamin B and cooked in ti leaves was used medicinally, although unpleasant tasting (Pukui and Elbert 1986:50 – 51). Famine food; kapa decoration; served occasionally as cordage; leaves used to thatch houses; blossoms were taken as a mild laxative; juice of the young, pendent root tips was an ingredient in compounds recommended as purges, for chest pains and as a tonic; good source of vitamin C (Abbott 1992:43, 54, 63, 69 and 101)
Xyridaceae: <i>Xyris complanata</i>			X	
Zingiberaceae: <i>Hedychium flavescens</i>	'Awapuhimelemele	Yellow ginger	X	
<i>Zingiber zerumbet</i>	'Awapuhi, 'Awapuhikuahiwi		P	The root was used to scent and dye kapa (Pukui and Elbert 1986:34)
Third Group: Dicotyledonae	Acanthaceae: <i>Thunbergia fragrans</i>	White thunbergia	X	
Anacardiaceae: <i>Mangifera indica</i>		Mango	X	
<i>Schinus terbinthifolius</i>		Christmas berry	X	
Apocynaceae: <i>Alyxia olivaeformis</i>	Maile		E	Decoration and lei's; one of five plants used on the hula alter; bird catching (Pukui and Elbert 1986:223). Used to scent kapa; representing the four Maile sisters, legendary sponsors of hula (Abbott 1992:58 and 117)

Botanical Name	Hawaiian Name	Common Name	Biographic Status	Traditional Hawaiian Uses
<i>Aquifoliaceae: Ilex anomala</i>	Kāwa'u, 'Aiea		E / I	Used somewhat for canoes and other things (Andrews 1974). A wooden anvil (kua kuku) for kapa making was shaped of endemic woods such as kāwa'u or nānū (Abbott 1992:52)
<i>Araliaceae: Cheirodendron trigynum</i>	'Ōlapa		E	Māmaki kappa was scented with the 'ōlapa bark; bird catching (Abbott 1992:58 and 106)
<i>Tetraplasandra hawaiiensis</i>	'Ohe		E	Hula instruments: pū'ili, 'ohe kā'eke'eke, 'ohe hano ihu and 'ohe kani; used as kapa stamps; kinolau or body form of the god Kāne; used in lama lamps, lengths of 'ohe filled with kukui kernals (Abbott 1992: 15, 54, 77 and 120 – 122)
<i>Tetraplasandra sp.</i>	'Ohe		E	Hula instruments: pū'ili, 'ohe kā'eke'eke, 'ohe hano ihu and 'ohe kani; used as kapa stamps; kinolau or body form of the god Kāne; used in lama lamps, lengths of 'ohe filled with kukui kernals (Abbott 1992: 15, 54, 77 and 120 – 122)
<i>Asclepiadaceae: Gomphocarpus physocarpus</i>		Balloon Plant	X	
<i>Begoniaceae: Begonia sp.</i>		Begonia	X	
<i>Caprigoliaceae: Lonicera japonica</i>		Honeysuckle	X	
<i>Caricaceae: Carica papaya</i>	Mikana	Papaya	X	
<i>Caryophyllaceae: Drymaria cordata</i>	Pipili	Drymaria	X	
<i>Celastraceae: Perrottetia sandwicensis</i>	Olomea, Pua'aolomea, Waimea		E	The wood is hard and formerly was used with soft hau wood to produce fire by rubbing; one of the plant forms of the demi-god Kamapua'a (Pukui and Elbert 1986:286)
<i>Compositae: Adenostemma lavenia</i>	Kāmanamana		I	
<i>Ageratum conyzoides</i>	Mailehohono	Ageratum	X	
<i>Ageratum houstonianum</i>		Ageratum	X	
<i>Crassocephalum crepidioides</i>			X	
<i>Dubautia plantaginea</i>	Kūpaoa, Na'ena'e, Hanupaoa, Hina'aikamalama, Ne'ine'i		E	Used to scent kapa (Pukui and Elbert 1986:185).
<i>Emilia fosbergii</i>		Red pualele	X	
<i>Erechtites hieracifolia, E. valerianaefolia</i>		Fireweed	X	
<i>Erigeron bonariensis</i>	Ilioaha	Hairy horseweed	X	
<i>Erigeron Canadensis</i>		Canada fleabane	X	
<i>Eupatorium riparium</i>	Hāmākuapāmakani		X	
<i>Gnaphalium purpureum</i>		Purple cudweed	X	
<i>Lapsana communis</i>		Nipplewort	X	
<i>Pluchea odorata</i>		Pluchea, Shrubby fleabane	X	

Botanical Name	Hawaiian Name	Common Name	Biographic Status	Traditional Hawaiian Uses
<i>Veronia cinerea</i>		Ironweed	X	
<i>Youngia japonica</i>		Oriental hawksbeard	X	
<u>Ebenaceae</u> : <i>Diospyros ferrea</i>	Lama, Ēlama		E	Lama wood was used in medicine and placed in hula alters because its name suggested enlightenment; huts were built of lama wood in a single day and the sick were placed inside them for curing (Pukui and Elbert 1986:192). Used in house building i.e. rafters; lama lamps; wood was used on the alter of the hālau hula to represent the goddess Laka (Abbott 1992:68, 77 and 118)
<u>Epacridaceae</u> : <i>Styphelia tameiameia</i>	Pūkiawe		I	The small round red and black seeds are used for lei's, rosaries and costume jewelry; though seeds are edible when cooked, when raw and broken they are poisonous; the leaves are used medicinally for colds or headaches (Pukui and Elbert 1986: 351 – 352)
<u>Ericaceae</u> : <i>Vaccinium calycinum</i>	‘Ōhelokaulā’au		E	
<i>Vaccinium reticulatum</i>	‘Ōhelo		E	Formerly sacred to Pele; wind-dried leaves are still used for tea (Pukui and Elbert 1986:277)
<u>Euphorbiaceae</u> : <i>Aleurites moluccana</i>	Kukui	Candlenut tree	P	Oily kernels formerly used for lights; hence the tree is a symbol of enlightenment; the nuts are still cooked for a relish (‘inamona); the soft wood was used for canoes and gum from the bark for painting tapa; black dye was obtained from nut coats and from roots; polished nuts are strung in lei's; the silvery leaves and small white flowers are strung in lei's as representative of Moloka'i; the official emblem for the State of Hawai'i in 1959; plant forms of the demi-god Kamapua'a (Pukui and Elbert 1986:177 – 178). Kapa dye which is black and permanent (coal from kukui nut shells and kukui nut oil), beige color dye from immature kukui fruit; kukui lamps; the best paint for building canoes was made by blending juices from the inner bark of kukui roots with charcoal from the base of lauhala or from wiliwili branches, with a high concentration of kukui juice, this paint was resistant to abrasion and water; used as fishbait; kukui firesticks; most commonly used as a laxative or in higher doses as a cathartic or purge;; the fresh leaves served as poultices for swellings, deep bruises, or other injuries helped by local heat and sweating; mashed, roasted kukui nuts were the base for a salve to cure external ulcers and sores; charcoal from the shell was used for sore throat; tattooing pigment (Abbott 1992:54, 77, 81, 85, 93, 100 and 128)
<i>Antidesma pulvinatum</i>	Hame, Ha'ā, Ha'āmaile, Hamehame, Mehame		E	Used in house building (Abbott 1992:68). Formerly the wood was used for anvils for preparing olonā fiber, the fruit to color tapa red (Pukui and Elbert 1986:54)
<u>Flacourtiaceae</u> : <i>Xylosma hawaiiense</i>	Maua, A'e		E	
<u>Gesneriaceae</u> : <i>Cyrtandra lysiosepala</i>			E	

Botanical Name	Hawaiian Name	Common Name	Biographic Status	Traditional Hawaiian Uses
<i>Cyrtandra paludosa</i>	Moa, Hahala	E		
<i>Cyrtandra platyphylla</i>	'Ilihia	E		
Goodeniaceae: <i>Scaevola gaudichaudii</i>	Naupakakuahiwi	Mountain naupaka	E	Fruit used as a dye yielding a purplish black color (Krauss 1993:66)
Guttiferae: <i>Hypericum degeneri</i>			X	
<i>Hypericum mutilum</i>		St. Johnswort	X	
Labiatae: <i>Hyptis pectinata</i>		Comb hyptis	X	
<i>Phyllostegia glabra</i>	Ulihi		E	
<i>Stenogyne calaminthoides</i>			E	
Lauraceae: <i>Cassytha filiformis</i>	Kauno'oapehu, Kauna'oamalolo, Kauna'oauka, Kaunoa, Malolo, Pololo		I	
<i>Persea Americana</i>		Avocado	X	
Leguminosae: <i>Cassia lechenaultiana</i> var.	Lauki	Partridge pea	X	
<i>Desmodium triflorum</i>		Three flowered beggarweed	X	
<i>Desmodium uncinatum</i>		Spanish clover	X	
Lobeliaceae: <i>Clermontia hawaiiensis</i>	'Ōhākēpau		E	The gum was used to catch birds which yielded feathers for feather work (Pukui and Elbert 1986:276)
<i>Clermontia parviflora</i>	'Ōhā, 'Ōhāwai, Hāhā		E	
<i>Cyanea tritomantha</i>	'Akū'akū, 'Akū		E; threatened or endangered	The leaves were cooked like cabbage or taro topos or sweet potato leaves, with pork or salted beef (Pukui and Elbert 1986:15)
<i>Cyanea</i> sp.			E	
Loganiaceae: <i>Buddleja asiatica</i>	Huelo'ilio	Butterflybush	X	
<i>Labordia hedyosmifolia</i>	Kamakahala		E	
Lythraceae: <i>Cuphea carthagensis</i>	Puakamoli	Cuphea	X	
Melastomataceae: <i>Clidemia hirtha</i>		Koster's curse	X	
<i>Heterocentron subtriplinervium</i>		Pearl flower	X	
<i>Melastoma malabathricum</i>		Malabar melastome	X	
<i>Tetrazygia bicolor</i>			X	
<i>Tibouchina urvilleana</i>		Lasiandra, Glorybush	X	
Menispermaceae: <i>Cocculus orbiculatus</i>	Huehue, Hue'ie		E / I	
Moraceae: <i>Artocarpus heterophyllus</i>		Jackfruit	X	

Botanical Name	Hawaiian Name	Common Name	Biographic Status	Traditional Hawaiian Uses
<i>Cannabis sativa</i>	Pakalōlō	Marijuana, pot	X	
<i>Cecropia obtusifolia</i>		Guarumo	X	
<i>Cecropia peltata</i>		Trumpet tree	X	
Myrsinaceae: <i>Embelia pacifica</i>	Kilioe		E	
<i>Myrsine lessertiana</i>	Kōlealaunui		E	Wood is not hard but was formerly used for house posts and beams (Pukui and Elbert 1986:162)
<i>Myrsine sandwicensis</i>	Kōlealauli‘i		E	
Myrtaceae: <i>Melaleuca quinquenervia</i>		Paperbark	X	
<i>Metrosideros polymorpha</i>	‘Ōhi‘alehua		E	The wood is hard, good for flooring and furniture and formerly used for images, spears, mallets; it was believed that picking lehua blossoms would cause rain (Pukui and Elbert 1986:199). Used for rafters in houses; used for gunwales on canoes; used for containers; kinolau or body forms of the gods Kāne and Kū; wood also suitable for ki‘i; placed on the hula alter for the god Kūkā‘ōhi‘a Laka; used in lei’s (Abbott 1992:68, 81, 87, 114, 117 and 127)
<i>Psidium cattleianum</i>		Strawberry guava	X	
<i>Psidium guajava</i>	Waiawi	Yellow strawberry guava	X	
<i>Syzygium jambos</i>	‘Ōhi‘aloke	Rose apple	X	
Nyctaginaceae: <i>Pisonia umbellifera</i>	Pāpalakepau, Pāpala		I	
<i>Pisonia</i> sp.	Pāpalakepau		I	
Onagraceae: <i>Ludwigia octovalvis</i>	Kāmole, Alohalua, Kāmolelaui‘i	Primrose willow	I / P (possibly)	
<i>Ludwigia palustris</i>		Water purselane	X	
Oxalidaceae: <i>Oxalis corniculata</i>	‘Ihi‘ai, ‘Ihi‘awa, ‘Ihimak‘ula, ‘Ihimākole	Yellow wood sorrel	I / P (possibly)	
Passifloraceae: <i>Passiflora edulis</i>		Yellow liliko‘i	X	
<i>Passiflora foetida</i>		Scarlet fruited passionflower	X	
Piperaceae: <i>Peperomia cookiana</i> , <i>P. hypoleuca</i> , <i>P. latifolia</i> , <i>Peperomia</i> sp.	‘Ala‘alawainui		E	Compounds used for irregular menstrual periods as well as for unspecified “affliction” of the female sexual organs (Abbott 1992:102)
<i>Peperomia tetraphylla</i>	‘Ala‘alawainui		E / I	
<i>Piper methysticum</i>	‘Awa		P	The root being the source of a narcotic drink of the same name used in ceremonies, when drunk to excess it caused drowsiness; also used medicinally; ‘awa kau lā‘au, the tree resting kava growing in the tree crotches and famous in poetry concerning Puna, Hawai‘i (Pukui and Elbert 1986:33). Ceremonial offering; a much favored drink and the plant was highly valued; mo‘olelo credit the gods Kāne and Kanaloa for

Botanical Name	Hawaiian Name	Common Name	Biographic Status	Traditional Hawaiian Uses
				planting 'awa in Hawai'i; choice varieties were reserved for the ali'i; other varieties such as hiwa were kept for ritual use by kahuna; it served as a relaxant and soporific; extract of 'awa root was used in remedies to relieve difficulty in urinating, menstrual irregularities and congestion in the respiratory tract ; 'awa leaves inserted into the vagina are said to induce miscarriage; 'awa had a more conspicuous role in religious ceremonies(Abbott 1992: 17, 42, 43, 101, 115)
Plantaginaceae: <i>Plantago lanceolata</i>		Narrow leafed plantain	X	
<i>Plantago major</i>	Laukai	Broad leafed plantain	X	
Polygonaceae: <i>Polygonum capitatum</i>		Polygonum	X	
Rosaceae: <i>Rubus ellipticus</i>		Yellow Himalayan raspberry	X	
<i>Rubus rosaefolius</i>		Thimbleberry	X	
Rubiaceae: <i>Bobea timonioides</i>	'Ahakea		E; threatened or endangered	Wood to frame a doorway of a house; favored for gunwales for canoes (Abbott 1992: 70 and 81). The wood is yellow and formerly was used for poi boards and canoe rims (Pukui and Elbert 1986:6)
<i>Pysdrax odoratum</i>	Alahe'e, Walahe'e		I	The wood is hard and was formerly used in maked the 'ō'ō, digging stick; also used medicinally (Pukui and Elbert 1986:17)
<i>Coffea Arabica</i>		Arabian coffee	X	
<i>Coprosma menziesii</i>	Pilo, kopa		E	
<i>Coprosma ochracea</i> , <i>C. rhyncocarpa</i> , <i>C. sp</i>	Pilo, kopa		E	
<i>Gardenia augusta</i>		Gardenia	X	
<i>Gardenia remyi</i>	Nānū, Nā'ū		E	Wooden anvils for kapa beating (Abbott 1992:52)
<i>Hedyotis terminalis</i>	Manono		E	Used for parts of the canoe (Andrews 1974)
<i>Hedyotis centranthoides</i>		Kīlauea hedyotis	E	
<i>Paederia foetida</i>	Mailepilau		X	
<i>Psychotria hawaiiensis</i>	Kōpiko		E	
Rutaceae: <i>Citrus limonia</i>		Lemon	X	
<i>Pelea clusiaefolia</i> , <i>P. radiata</i> , <i>P. sp.</i>	Alani		E	Fragrant leaves used for scenting tapa; the bard was used for medicine (Pukui and Elbert 1986:18)
Sacifragaceae: <i>Broussaisia arguta</i>	Kanawao, Pū'ahanui		E	An old belief was that eating the fruit helped in fecundity (Pukui and Elbert 1986:128)
Scrophulariaceae: <i>Castilleja arvensis</i>		Field Indian paintbrush	X	

Botanical Name	Hawaiian Name	Common Name	Biographic Status	Traditional Hawaiian Uses
<i>Solanaceae: Physalis peruviana</i>	Pohā	Cape gooseberry	X	
<i>Sterculiaceae: Melochia umbellata</i>		Melochia	X	
<i>Waltheria indica</i>	Hi'aloa, 'Uhaloa		I	
<i>Thymelaeaceae: Wikstroemia sandwicensis</i>	'Ākia		E	Cordage; poisoning fish; used in seed lei's (Abbott 1992:63, 86 and 125). The bark, roots and leaves a narcotic used for fish poisoning; bark yields a fiber (Pukui and Elbert 1986:14)
<i>Ulmaceae: Trema orientalis</i>		Gunpowder tree	X	
<i>Urticaceae: Pipturus hawaiiensis</i>	Māmaki		E	The bark yielded a fiber valued for a kind of tapa, similar to that made from wauke but coarser (Pukui and Elbert 1986:234). A infusion made from the leaves of māmaki was used for general "run-down" (Abbott 1992:102)
<i>Touchardia latifolia</i>	Olonā		E	Cordage; used for kōkō but only for a special kind called kōkō pu'pu'u that were exclusively reserved for containers belonging to the ali'i; execution; used in feather work in which feathers were tied to olonā netting and fastened with olonā cordage (Abbott 1992: 83, 84, 92,111, 105 – 107). Formerly the bark was valued highly as the source of a strong, durable fiber for fishing nets, for nets (kōkō) to carry container and as a base for ti leaf raincoats and feather capes (Pukui and Elbert 1986:286)
<i>Urera glabra</i>	'Opuhe, Hopue, Hona		E	Occasionally used for cordage (Abbott 1992:63). The bark was formerly used for fishing nets; related to olonā (Pukui and Elbert 1986:293)
<i>Verbenaceae: Lantana camara</i>	Lakana	Lantana	X	
<i>Stachytarpheta australis</i>		Cayenne vervain	X	
<i>Verbena litoralis</i>	Ha'uowi	Verbena	X	

*The following symbols used in the above table:

E = endemic: native only to the Hawaiian Islands.

I = indigenous: native to the Hawaiian Islands and also to one or more other geographic area(s).

P = Polynesian: Polynesian introduction, plants brought to the Hawaiian Islands prior to Western contact (1778).

X = introduced or alien: brought to the Hawaiian Islands by humans, accidentally or deliberately after Western contact.

APPENDIX E – FINDINGS OF FACT AND CONCLUSIONS OF LAW (PDF v. CAMPBELL, CIVIL NO. 89-089)

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IN THE CIRCUIT COURT OF THE THIRD CIRCUIT

STATE OF HAWAII

PELE DEFENSE FUND,)	CIVIL NO. 89-089 (Hilo)
)	(Declaratory Judgment/Injunction)
Plaintiff,)	
)	
vs.)	FINDINGS OF FACT AND
)	CONCLUSIONS OF LAW; ORDER
THE ESTATE OF JAMES CAMPBELL,)	
DECEASED; W. H. MCVAY AND)	
P. R. CASSIDAY, in their fiduciary)	
capacity as Trustees under the Will)	Trial Date: August 2, 1994
and the Estate of James Campbell,)	Judge: Hon. Riki May Arano
)	
Defendants.)	
)	

Whereby certify that this is a full, true and correct copy of the original on file in this office.

[Signature]
 Clerk, Third Circuit Court, State of Hawaii

FINDINGS OF FACT AND CONCLUSIONS OF LAW

This case came on for trial before the Court on August 1-5, 8, 11, and 12, 1994, the Honorable Riki May Amano presiding. Yuklin Aluli, Paul Nahoia Lucas, and Steven C. Moore appeared on behalf of Plaintiff Pele Defense Fund. Michael W. Gibson and James K. Mee appeared on behalf of Defendant Trustees of the Estate of James Campbell, deceased, together with party representatives Edith MacKenzie and Rubellite Johnson.

Pursuant to the First Amended Complaint for Declaratory and Injunctive Relief filed herein, the opinion of the Supreme Court filed September 28, 1992 in Pele Defense Fund v. Paty, 73 Haw. 578 (1992), and the Judgment on Appeal filed by the Supreme Court on October 26, 1992, the Court has heard and considered the evidence presented, and being fully apprised of the premises, makes the following Findings of Fact and Conclusions of Law. These Findings of Fact and Conclusions of Law shall be construed as follows:

- (1) If it is later determined that a Finding of Fact should be properly deemed to be a Conclusion of Law, the Court so concludes on those legal issues.
- (2) If it is later determined that a Conclusion of Law should properly be deemed to be a Finding of Fact, the Court so finds on those factual issues.
- (3) To the extent that any of the following Findings of Fact and Conclusions of Law include a mixed finding of fact and conclusion of law, each shall be given full effect.

FINDINGS OF FACT

1. Plaintiff Pele Defense Fund (hereinafter "PDF") is a non-profit corporation incorporated in 1987, whose purpose is to perpetuate Hawaiian religion and culture.
2. Defendant Estate of James Campbell, Deceased (hereinafter "Campbell Estate"), is a private trust operated for the benefit of individual beneficiaries. Defendant Trustees under the Will and of the Estate of James Campbell, deceased (collectively referred to hereinafter as "Campbell Estate"), were sued in their fiduciary capacities and not their individual capacities.
3. Portions of the land that are the subject of this action are the former Wao Kele `O Puna ("WKOP") Natural Area Reserve and Puna Forest Reserve ("PFR"), situated in the District of Puna, Island of Hawaii, which were exchanged in 1987 by the State of Hawaii for lands at Kahauale`a which were owned by Defendant Campbell Estate.
4. Defendant Campbell Estate currently holds record title to the land pursuant to Land Patent Grant No. S-15, 666, which land is described in Exhibit A attached hereto.
5. On September 28, 1992, the Hawaii Supreme Court issued its opinion in Pele Defense Fund v. Paty, 73 Haw. 578 (1992), reversing the lower court's dismissal of PDF's claim that Defendant Campbell Estate violated Article XII, § 7 of the Hawaii State Constitution, by preventing PDF's members from entering Campbell's undeveloped land for subsistence, cultural, and religious practices, and remanded that claim for a full trial on the merits.
6. On October 26, 1992 the Supreme Court entered its Judgment on Appeal, and expressly directed this Court that:

The case is remanded for trial on the claim alleging that Defendants-Appellees THE ESTATE OF JAMES CAMPBELL, FRED E. TROTTER, W.H. McVAY, P.R. CASSIDAY, HERBERT C. CORNUELLE, TRUE GEOTHERMAL ENERGY CORP., TRUE GEOTHERMAL DRILLING CO., and MIDPACIFIC GEOTHERMAL, INC. violated article XII, § 7 by the continued denial of access into the undeveloped areas of Wao Kele 'O Puna and other exchanged lands to native Hawaiian PDF

members who seek access for customarily and traditionally exercised subsistence, cultural and religious practices.

RESERVATION OF RIGHTS

7. On March 8, 1848, Kamehameha III conveyed to the Hawaiian government 38 ahupua`a and three `ili in the Puna district, and retained two ahupua`a and one `ili. 2 Rev.L.Haw. 2152-2176 (1925). The ahupua`a that the King conveyed to the government were: Aahalanui, Halepuua, Halona, Hapaiki, Haukalua 1 and 2, Honolulu, Honomu, Kaikowowo, Kamaili, Kanekiki, Kaohe, Kapaahu, Kaualea, Kaukulau, Kealakomo and Kilauea, Keauohana, Keokea, Keonepoko, Ki, Kiapu, Kikala 1 and 2, Kupahua, three `ili in Kupahua, Lonokaeho, Makena, Makuu, Malama, Manawale, Oneloa, Opihikao, Panauiki, Pohoiki, Popoki, Poupou 1 and 2, and Waawaa. 2 Rev.L.Haw. 2156-2174 (1925). The ahupua`a in Puna retained by Kamehameha III (later known as Crown Lands) were Apua and Kaimu and the `ili of Waiakolea. 2 Rev.L.Haw. 2152-2156 (1925).

8. On June 7, 1848 the Hawaiian legislature ratified the King's action, declaring that all of the aforementioned government and Crown lands, which included the ahupua`a, were to be set aside for the Hawaiian government "subject always to the rights of tenants". 2 Rev.L.Haw. 2156, 2174 (1925).

9. On February 27, 1987, the BLNR issued Land Patent No. S-15, 666, transferring the land to Campbell Estate in fee simple.

10. The Land Patent contains the following language: "excepting and reserving there from all existing trails within said Parcel B..." and "excepting and reserving therefrom all existing trails within said Parcel C."

11. On December 3, 1986, Campbell Estate entered into a sublease with True Mid-Pacific Geothermal, Inc. for the exploration and development of geothermal energy within the land. (Plaintiff's Trial Exhibit "2"). Less than 20 acres of the approximately 27,800 acres were developed, as defined in Exhibit B attached hereto, pursuant to the sublease. The remaining acres are undeveloped.

12. The sublease expressly states that True Geothermal's lease is subject to "claims based on native rights, including roads and trails".

13. The sublease also states that both Campbell and True Geothermal shall not "unreasonably interfere with the rights of others herein set forth" in the lease.

HISTORICAL LAND USE OF WKOP AND PUNA FOREST RESERVE (PFR) LANDS

14. The traditional place name for the former WKOP and PFR lands is unknown. The Hawaiian phrase "Wao Kele O Puna" used to designate the former Natural Area Reserve, is merely a descriptive term which refers to the rainbelt of Puna, i.e., an area where clouds accumulate, being attracted by the forest.

15. Wao Kele O Puna may be an abbreviated form of Wao O ma`u O Kele O Puna, referring to Oma`u, a diety who was part of the Pele clan, associated with a part of the rainforest.

16. Following the Mahele of 1848, the Hawaiian government received the bulk of lands in the Puna district. In 1911, these government forest lands were set aside for use as a Forest Reserve that came to be known as the Puna Forest Reserve.

17. PDF witnesses testified that these lands are not contained within any actual ahupua`a. According to maps dating as early as 1850 on file at the state archives, the former WKOP and PFR are not located within an ahupua`a.

18. For instance, a Territorial Survey Map prepared by Walter E. Wall, Surveyor in 1927, of the Puna Forest Reserve, Keauohana Forest Reserve, and Malama-ki Forest Reserve, Puna, Hawaii HTS Plat 814, illustrate the ahupua`a and `ili, including the boundaries of the Puna Forest Reserve, awarded in the Puna

District.

HISTORICAL USE OF WKOP AND PFR

19. Subsistence and cultural activities were traditionally exercised in former WKOP and PFR by individuals prior to 1892.

20. The former WKOP and PFR land was used by early Hawaiians for the planting of native cultigens, i.e., kukui, ginger, taro, ti leaf, awa, etc.

21. There are at least two known large lava tube systems in the Puna district which extend into the WKOP and PFR lands. The northern tube extends approximately three miles into the WKOP and PFR, and the middle tube extends at least 4.2 miles into the WKOP and PFR. Both systems contain archaeological evidence of prehistoric and historic use of the tubes and surface lands, for hunting, gathering, warfare, and burial purposes.

22. There were mala'ai, or dryland garden plots of land situated in the former WKOP lands in an area called "Walaohia", which were used primarily by Hawaiian families residing in the Kalapana, some as far back as the mid 19th century, for subsistence and cultural activities.

23. Native Hawaiian members of PDF residing in the Puna District use the land for hunting and gathering, and other customary practices, all of which were in existence and practiced in the 19th century, through 1892.

24. Said members of PDF have been driven in part by the loss of suitable habitat in other areas, to hunt and gather on the subject lands.

25. Since acquiring title to the subject land, Campbell Estate has failed to recognize or acknowledge Plaintiff's members right to current and future usage, to which the Campbell Estate's land is subject, and have also failed to permit Plaintiff's members access to the land.

26. Due to Campbell Estate's failure, said members of PDF are no longer able to gain access to the land to gather herbs and other native plants, to hunt and to perform cultural practices.

AHUPUA'A BOUNDARIES

34. Unlike other areas in Hawaii, Hawaiians historically crossed ahupua'a boundaries in the Puna district. Testimony before the Boundary Commission establishes that individuals crossed regularly between the ahupua'a of Kapoho and Keahialaka, which were two lands owned by the same family, without regard to the interior boundary. In addition, Hawaiians would cross to the kula plains in the ahupua'a of Kalama.

35. It was customary for persons using the trails to gather along the trails, as well as temporarily reside overnight.

36. The lava tube system, used prehistorically and historically by Hawaiians, could have crossed several ahupua'a boundaries.

37. Members of PDF and their families hunt and gather in WKOP and PFR for subsistence and cultural purposes.

38. Ahupua'a boundaries are not well known by PDF members and other individuals conducting subsistence and cultural activities in Puna, and are not perceived as dividing lines over which they will not cross.

39. The evidence at trial established that in accord with Hawaiian custom, a person seeking access to gather mauka, or upland, would ask permission to cross land only if that person was met in the course of their

activities. Failure to ask for permission, however, did not preclude one from engaging in a subsistence and cultural activity, because the land "owner" would eventually be informed, either by the person exercising that activity or by a third party, usually by a person familiar or knowledgeable in that area.

40. Traditionally, rather than ask for permission, one would kahea or heahea, i.e., announce your presence and intention by rattling keys, making loud noises, or leaving ceremonial markers, such as rocks wrapped in ti leaves, to let residents know that you were visiting the area. The custom and practice of kahea or heahea differed from place to place.

41. The hunting and gathering patterns in the Puna district are unique because they are influenced, to a large extent, by an active volcano, Kilauea. It can be reasonably inferred that volcanic eruptions in the Puna area force hunters and gatherers to change areas to find plants and animals for subsistence purposes.

42. For example, PDF members Hauanio and Peleiholani were forced to move from their original family homes and ahupua'a due to lava flows, but continue to hunt and gather in areas to which they were introduced prior to relocation.

43. Hawaiians are "multi-local", i.e., much given to changes in residency from district to district and even island to island. With these changes in residence, one is introduced to new areas of subsistence practice.

44. Nonetheless, familiarity and preference for the gathering and hunting areas would not end with a change of residence. The traditional values of not overusing and sharing would protect the resource.

45. For example, PDF members Kobayashi and Auwae moved from their ahupua'a after they married, but continue to hunt and gather in areas to which they were introduced prior to relocation.

46. Further, ties of family and friendship in Puna and the requirements of survival would allow non-ahupua'a residents to continue their subsistence and cultural activities in a given area.

CUSTOMARILY AND TRADITIONALLY EXERCISED PRACTICE

47. A "customary and traditional" activity is defined as consisting of those activities that have been practiced in one generation and passed to another generation within the values practiced by that culture. A practice is "customarily and traditionally exercised" when a specific set of values are passed down to the next generation in the conduct of their subsistence and cultural activities. A subsistence living requires a person to adhere to cultural practices, norms and values in order to maintain order, harmony, balance, and respect for the resources and deities associated with those resources.

48. The primary values, or norms, associated with the traditional native Hawaiian subsistence lifestyle include taking care of and not over-using or abusing the resource, utilizing only certain resources of a certain level of maturity or age, sharing resources with the 'ohana, respecting others' areas, and others. In this case, these values have been passed down by the Puna Hawaiians from one generation to another. Id.

49. PDF members and other individuals continue to hunt and gather in forested areas in Puna based on where they were taught to go and gather from their 'ohana, or family, usually a kupuna, or elder.

50. Although there may be changes in the items that they gather, as well as how they gather it, the values and the uses for which they are made are consistent with the values and uses extant from 300-1400 A.D. in Puna.

51. Dr. McGregor was lead author and investigator of the Native Hawaiian Ethnographic Study on behalf of the U.S. Department of Energy.

52. The Native Hawaiian Ethnographic Study documented contemporary Hawaiian subsistence and cultural practices in Puna. The study included semi-structured interviews with 79 "key informants", individuals identified by the State Historic Preservation Office as tradition bearers in the Puna community having

knowledge of Hawaiian cultural and subsistence practices in Puna. Dr. McGregor, in her testimony, relied upon a map entitled "Native Hawaiian Ethnographic Survey". This map consists of color coded identification of ocean gathering, fishing, hunting, plant gathering, and trails and was created by the location of such areas on a USGS map by the 79 key informants during the interviews.

53. In this case, the hunting and gathering practices carried on today by members of PDF and other individuals, are "traditional and customary", i.e., these subsistence activities are conducted with the same values as utilized by Hawaiians in the Puna District for generations.

54. The PDF members who testified consisted of native Hawaiian residents of the Puna district who hunt and gather in the former WKOP and PFR (key informant witnesses Clarence Hauanio, Elia Kaho`okaulana, Pi`ilani Ka`awaloa, and Wesley Kobayashi); a non-Hawaiian resident of the Puna district married to a Hawaiian who hunts and gathers in the former WKOP and PFR (key informant witness Al Jardine); a native Hawaiian non-resident of the Puna district who exercises a customary and traditional subsistence and cultural activity in the former WKOP and PFR (key informant witness Henry "Papa" Auwae).

55. All PDF members who testified identified their place of residence, their route to the land, point of entry, and route within the land.

56. Other PDF members were named as Plaintiff's lay witnesses for hunting and gathering activities in WKOP and PFR. For purposes of avoiding cumulative testimony, the testimony of: Emily Iwalani Naeole, Keala Kaipo, Gordon Hoohuli, John Kekahuna, James Costa-Ayers, Phillip Keli`iho`omalua, Albert Kaho`okaulana, Beverly Pavao, Keoni Kalawe, Robert Kelihoomalua, Darrin Kamanu, Edward Kamanu, and Elson Kalawe was accepted through PDF's offer of proof.

57. There are approximately six hunters in the Kalapana area, who supply meat to each of their families. There are approximately 50 to 60 individuals in each hunter's family.

58. PDF member Clarence Hulihe`e Hauanio is a 42 year old pure native Hawaiian who was born and raised in Kepauole-mauka, Kalapana.

59. PDF member Elia Kaho`okaulana is a 34-year old 100% Hawaiian who was born and raised in Kalapana at an area known as Mokuhulu. Kaho`okaulana presently resides in Mokuhulu, in the house that he was raised in, built by his grandfather, Elia Herman Kaho`okaulana, in the 1940's.

60. PDF member Wesley Kobayashi is a 35-year old native Hawaiian of no less than 50% Hawaiian blood.

61. PDF member Al Jardine is a 67-year old non-Hawaiian married to a pure Hawaiian woman, whose family is from Kona.

62. Their fathers trained these Hawaiians when they were young children to hunt using a knife and hunting dogs.

63. Jardine has eight children, 23 grandchildren and nine great grandchildren. He has taught his sons and grandchildren to hunt.

64. Kobayashi is teaching his son to hunt.

65. Hauanio would hunt and gather with his father in an area ranging from Kepauolemauka to Kiula.

66. Kaho`okaulana would hunt and gather with his father and two brothers primarily in an area called Kiula.

67. Kaho`okaulana's father would hunt in an area outside of his home because there was no game in his area.

68. Kobayashi would hunt and gather with his father in areas in the Puna district behind the Pahoia School, called "Big Mountain", and in an area behind the Black Sands subdivision in Kalapana.
69. Hauanio presently hunts approximately twice every month in WKOP, taking between 80-250 lbs. of meat out of the forest.
70. Jardine first started to hunt in the Puna district after World War II, in 1947 or 48.
71. Kaho'okaulana presently hunts approximately once a week in WKOP, taking one pig out of the forest.
72. Kobayashi used to hunt primarily on weekends in WKOP with his father and friends from school, taking about 50-60 lbs. of meat out of the forest.
73. Jardine, his uncle, father, and Hawaiian friends would hunt in WKOP and PFR between once and twice a month, sometimes sleeping overnight and taking their kill, approximately 200 lbs. of game, out the next day.
74. Kaho'okaulana's older brother also hunts and shares his meat with his family.
75. Kaho'okaulana used to hunt with his maternal grandfather Samuel Ka'awaloa.
76. At the time of trial, Samuel Ka'awaloa was 88 or 89 years old.
77. Hauanio, Kaho'okaulana, and Jardine hunt with a knives and hunting dogs, but now also carry guns to hunt.
78. Hauanio salts or smokes the meat he shares with family, including his brothers and sisters, uncles and aunt. Kaho'okaulana also shares the meat he gathers with family, primarily his six brothers and six sisters some of whom live on O'ahu. Kobayashi smokes or makes sausage and shares the meat he gathers with his family, which consists of more than 50 members. Jardine salts or smokes the meat and makes sausage he shares and gives to family, and those who were unable to hunt.
79. The native Hawaiian hunters also simultaneously gather medicinal plants such as mamaki, ko'oko'olau, and liko, among others for their families and animals in WKOP.
80. Kobayashi also picks maile for family members' wedding.
81. Jardine also gathers kukui nuts and Hawaiian ginger in the WKOP and PFR for medicinal use by his Hawaiian wife and others.
82. Hawaiians might have lived and had plantings in mala'ai, upland gardens located within the waokanaka, or forest area.
83. It was also customary that these mala'ai were never disturbed by persons visiting the area. However, if strangers needed these products for their survival, custom dictated that they were free to use it, provided that they eventually inform the owner of its use.
84. At least once a week, Kaho'okaulana would accompany Sam Ka'awaloa from his grandfather's home in Kapa'ahu, Puna, on horseback to their family garden plot of land, or mala'ai, of approximately one acre upland of Kapaahu, in an area called Walaohia.
85. Walaohia is within the WKOP forest.
86. The mala'ai was first farmed by Samuel Ka'awaloa's great-grandfathers.

87. Other families, such as Konanui, Lum Ho, and Kauhi also had mala`ai in Walaohia.
88. Kaho;okaulana and his grandfather would stay at Walaohia for three days and two nights, and, before they came back home, would hunt for pigs, goats and cows, taking only enough to feed his family.
89. Kaho`okaulana and his grandfather would pull weeds and care for plots of taro, sweet potato, ti leaves, banana trees and awa roots, that his grandfather planted.
90. Kaho`okaulana also gathered maile below the family mala`ai.
91. At Walaohia there was a hale kuke, a small house, where they would obtain water from runoff.
92. Walaohia was partly destroyed in the lava flow of 1977; it was later completely destroyed by the lava flow of 1980.
93. There is an area in the Puna uplands area called Walaohia, a homestead which consists of several mala`ai used by the Konanui, Kauhi, and Waipa families from Puna.
94. PDF member Pi`ilani Gwendolyn Ka`awaloa was 29 years old at the time of trial, a native Hawaiian of no less than 50% Hawaiian blood who was born and raised at Kupahua in the district of Puna.
95. Ka`awaloa has been trained in the Hawaiian arts of lauhala weaving, mahi`ai farming, and la`au lapa`au healing, which Ka`awaloa learned from her grandmother, who in turn learned it from her grandmother.
96. Ka`awaloa's grandmother also showed her where in Puna to gather items for medicine.
97. Jardine has observed plantings of ti leaves, taro, and awa root in WKOP and PFR.
98. PDF member Henry Auwae testified as a witness for the PDF and was found by this Court to be qualified as an expert in the area of kahuna la`au lapa`au, or traditional medicinal healing.
99. Auwae was born in 1910 at Puako, Kawaihae, Hawaii.
100. Auwae has sixteen children and 247 grandchildren, great grandchildren, and great great grandchildren.
101. Auwae was trained by his great great grandmother Kapua Pai, and grandmother Kanalu Pai, in the early 1900s. Kapua Pai was born in 1810, and died at the age of 114, when Auwae was 14 years old. Kapua Pai was trained by her great great grandmother.
102. Auwae would accompany his great great grandmother on medicine gathering expeditions to the forest uplands of Kawaihae-uka and Kahua. Auwae would travel with his great great grandmother from Kawaihae as far as Waimanu valley to gather medicinal herbs. Auwae would also gather pure water from Keanahanulunulu, a cave between Pu`ulapalapa, Pu`u Lapakahi, and Pu`uahi in order to mix and prepare medicine.
103. Auwae and his great great grandmother did not ask permission from the landowner in 1917 to gather in Waimanu, nor to obtain water at Pu`ulapalapa in 1918.
104. Auwae moved to Puna in 1929 and lived there for seven years, until 1937 when he and his family moved to Hilo and eventually Keukaha.
105. During his years of residence in Puna, Auwae familiarized himself with areas of the former PFR where potent medicine, such as the `awa kolo, could be picked. He also hunted in that area. Upon moving to Keukaha, he continued to gather for 52 years in the Campbell land.
106. Auwae continues to gather medicinal herbs well beyond his present district and ahupua`a of residence.

107. Auwae determines the location for gathering on where he finds the most efficacious medicine, not necessarily by ahupua'a boundaries.

HAWAIIAN PRACTICES NOT RACE-BASED

108. The Court finds that the Hawaiian culture is inclusive, not exclusive, i.e., gathering was not limited to persons of Hawaiian ancestry.

109. The 'ohana concept is multi-generational; individuals who married into or were adopted into a family were considered part of the family, and were expected to participate in subsistence and cultural activities, such as gathering.

110. The evidence at trial established that in Puna, family and friends were expected to participate with PDF members in subsistence and cultural activities.

111. PDF member Henry Auwae testified that neither in his care of patients nor in his training of students was race a criteria.

112. PDF members Clarence Hauanio and Elia Kaho'okauluna are married to non-Hawaiian women. Food is shared with family, including non-Hawaiian family.

113. PDF member Al Jardine is a caucasian man married to a full-blooded Hawaiian from Kona. His 8 children, 23 grandchildren and 9 great grandchildren are thus Hawaiian. He observes all of the traditional values associated with subsistence hunting and gathering.

HAWAIIAN PRACTICES SELF-REGULATING

114. The customs and practices of native Hawaiian activities in the Puna area are, to a large extent, self-regulating.

115. Custom requires that with the exercise of a right to hunt and gather comes the responsibility of managing the resource.

116. The custom and practice of hunting and gathering for Hawaiian subsistence and cultural purposes requires that those individuals who choose to engage in such activity adhere to certain norms. For example, these norms included: (a) not abusing resources but malama ka 'aina, i.e., (b) to take care of the resource, (c) to aloha, i.e., share the resource with the family, and (d) respect each individual/families gathering and hunting area.

117. If a person failed to practice malama, there were several self-imposed measures which served as punishment, for example, self-punishment, or your family turning against you by refusing to take care of or look out for you.

118. These norms are more often practiced by persons who are from the rural country areas of neighbor islands.

119. Regulations such as requiring individuals to enroll in gun safety classes, or sign permission forms to enter property, is not Hawaiian custom and allows these individuals to be relieved of their attendant responsibility to self regulate.

INTERFERENCE WITH SUBSISTENCE AND CULTURAL ACTIVITIES

120. Campbell Estate's Geothermal development of the former WKOP and PFR lands interferes with the subsistence and cultural activities of Puna hunters and gatherers. Game has been chased away, plants are degraded or destroyed, and survival is affected because Puna families depend upon meat, plants and other

resources.

121. PDF Hunters and gatherers do not make a distinction between developed and undeveloped lands when they hunt and gather in WKOP and PFR.

122. Individuals conducting subsistence and cultural activities in WKOP and PFR often require access across "developed" areas, i.e., roads leading to and from geothermal drilling sites, to reach areas within which to carry out the activities.

123. PDF member Auwae does not use a "developed vs. undeveloped" criteria in selecting the areas where he gathers, his consideration is whether the plants he gathers for medicine have become "polluted" and thus lost some or all of their power because of development in an area.

124. PDF members were turned away, or feared returning to WKOP and PFR lands due to the actions of Campbell Estate and/or their former lessee True Geothermal.

125. For example, PDF member Auwae testified that he was denied access in 1989 from going into WKOP to gather medicinal plants for la'au lapa'au, even after he informed them of the purpose for his visit.

126. After that incident, Auwae was embarrassed and has not returned to WKOP since 1989.

127. PDF member Wesley Kobayashi testified that he was not allowed onto Campbell Estate's land to retrieve a lost hunting dog.

128. Kobayashi has never returned to that area to hunt since.

129. PDF member Pi'ilani Ka'awaloa testified that she was stopped from gathering pili grass near the road to True Geothermal's gate.

130. Ka'awaloa has never been notified that she could gather in the undeveloped areas of WKOP and PFR.

131. Ka'awaloa testified that she would not return to that area for fear of being arrested.

132. Campbell Estate does not permit access by unauthorized individuals to the drill site, road and other improvements situate on its lands.

133. Campbell Estate has no policy regarding access to the undeveloped areas of their land.

HARM

134. Campbell Estate witness William Dement testified that True Geothermal is currently not actively drilling in WKOP and PFR.

135. Campbell Estate did not present evidence to establish any actual harm as a result of allowing PDF members to conduct subsistence and cultural activities on the undeveloped portions of the former WKOP and PFR lands.

CONCLUSIONS OF LAW

1. This Court has subject matter jurisdiction over this matter and the parties in this action.

2. In its conveyance of the WKOP and PFR lands to the Campbell Estate in 1987, the State has excepted and reserved all of the existing trails in parcels B and C, as noted in Exhibit A attached hereto.

3. The customary rights of individuals to exercise subsistence and cultural activities in the WKOP and PFR lands have not been extinguished. Public Access Shoreline Hawaii, 79 Haw. 425, 442 (1995).

4. Article XII, § 7 of the Hawaii State Constitution states that:

The State reaffirms and shall protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by ahupua`a tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778, subject to the right of the State to regulate such rights.

5. Since the protection of all customarily and traditionally exercised practices of native Hawaiians is now a matter of constitutional importance, this Court is obligated to give full force and effect to the protection of native rights. *Pele Defense Fund v. Paty*, 73 Haw. 578, 617- 620 (1992).

6. As stated in the Standing Committee's Report, quoted by our Supreme Court in *Pele Defense Fund*, 73 Haw. at 620:

...your Committee intended to provide a provision in the Constitution to encompass all rights of native Hawaiians, such as access and gathering. Your Committee did not intend to have the section narrowly construed or ignored by the Court.(Emphasis in the original).

7. PDF members are exercising customary and traditional cultural and subsistence rights possessed by ahupua`a tenants who are descendants of native Hawaiians inhabiting the Hawaiian islands prior to 1778.

8. Hunting and gathering are practices entitled to protection under Article XII, § 7. The Standing Committee report states that:

Your Committee found that besides fishing rights, other rights for sustenance, cultural and religious purposes exist. Hunting, gathering, access and water rights, while not provided for in the State Constitution, were nevertheless an integral part of the ancient Hawaiian civilization and are retained by its descendants.

Stand. Comm. Rep. No. 57, reprinted in 1 PROCEEDINGS OF THE CONSTITUTIONAL CONVENTION OF HAWAII OF 1978 at 639-640 (Emphasis supplied).

9. Based on the undisputed testimony at trial, the customarily exercised activities that PDF members seek to exercise are hunting and gathering for subsistence and cultural purposes.

10. The plain language of Article XII, § 7 states that "...all rights, customarily and traditionally exercised..." will be protected.

11. From the operative word "exercise" it is clear that the framers of Article XII, § 7 sought to prevent any interference with the exercise of a traditional and customary practice.

12. These activities are protected under Article XII, § 7.

13. In *Pele Defense Fund*, the Supreme Court recognized that § 7-1 "contains two types of rights: `gathering rights which are specifically limited and enumerated, and rights to access...which are framed in general terms.'" *Pele Defense Fund*, 73 Haw. at 617 (quoting *Kalipi*, 66 Haw. at 5).

14. H.R.S. § 1-1 represents the codification of the doctrine of custom in Hawaii. *Public Access Shoreline Hawaii*, 79 Haw. at 447.

15. H.R.S. § 1-1 provides as follows:

The common law of England, as ascertained by English and American decisions, is declared to be the common law of the State of Hawaii in all cases, except as otherwise expressly provided by the Constitution or laws of the United States, or by laws of the State, or fixed by Hawaiian judicial precedent, or established by Hawaiian usage; provided that no person shall be subject to criminal proceedings except as provided by the written laws of the United States or of the State. (Emphasis supplied).

16. The Hawaiian Usage exception under § 1-1 is akin to the English doctrine of custom whereby practices and privileges unique to particular districts continue to apply to the residents of those districts even though in contravention of the common law. Public Access Shoreline Hawaii, 79 Haw. at 440 (quoting Kalipi, 66 Haw. at 10-11).

17. Not all of the elements of custom embodied in the English common law have been incorporated into § 1-1. Thus, Hawaiian custom need not meet all elements of the English common law definition of custom. Public Access Shoreline Hawaii, 79 Haw. at 447.

18. As the Court held in Kalipi:

[not] all [of] the requisite elements of the doctrine of custom were necessarily incorporated in §1-1. Rather, we believe that the retention of a Hawaiian tradition should in each case be determined by balancing the respective interests and harm...(Emphasis supplied).
66 Haw. at 18.

19. In the application of custom in Hawaii, the Hawaiian usage must have been established in practice prior to November 25, 1892, the date of passage of § 1-1's predecessor. Public Access Shoreline Hawaii, 79 Haw. at 447; the consistency of the custom is properly measured against other customs, not the spirit of the present laws. Public Access Shoreline Hawaii, 79 Haw. at 447, n. 39; the certainty of a custom is not subjectively determined, but objectively defined and applied. Public Access Shoreline Hawaii, 79 Haw. at 447, n.39; and the reasonableness of a custom concerns the manner in which an otherwise valid customary right is exercised, i.e., even if an acceptable rationale cannot be assigned, the custom is still recognized as long as there is no "good legal reason" against it. Public Access Shoreline Hawaii, 79 Haw. at 447, n. 39.

20. The nature and scope of the rights reserved to *hoā`aina* [tenants] by custom and usage are to be defined according to the values, traditions and customs associated with a particular area as transmitted from one generation to the next in the conduct of subsistence, cultural, and religious activities.

21. As [the Court] stated in Kalipi, " the precise nature and scope of the rights retained by § 1-1 [and Article XII, § 7]would, of course, depend upon the particular circumstances of each case." Pele Defense Fund, 73 Haw. at 619 (quoting from Kalipi, 66 Haw. at 12).

22. "Native Hawaiian rights protected by Article XII, § 7 may extend beyond the *ahupua`a* in which a native Hawaiian resides where such rights have been customarily and traditionally exercised in this manner." Pele Defense Fund, 73 Haw. at 620.

23. PDF members customary rights to hunt and gather in WKOP and PFR are not limited by common law concepts associated with tenancy. Public Access Shoreline Hawaii, 79 Haw. at 448.

24. PDF members' hunting and gathering rights based on practiced customs raise different issues than land ownership. Public Access Shoreline Hawaii, 79 Haw. at 448.

25. PDF members, not claiming rights based on land ownership, but on the traditional access and gathering patterns practiced by native Hawaiians in the Puna region, Pele Defense Fund, 73 Haw. at 618-619, may conduct their activities outside the ahupua`a of their residence.

26. Based on the evidence presented, the hunting and gathering activities of PDF members were customary and traditional, i.e., that these activities were conducted in accordance with Hawaiian norms and values existing prior to November 25, 1892.

27. It has not been the practice of these individuals to limit the customarily and traditionally exercised subsistence and cultural activities to one's ahupua`a of residence.

28. Thus, PDF is not required to show that their members reside in an ahupua`a that abuts Campbell's land in order to exercise the rights protected under Article XII, § 7. Public Access Shoreline Hawaii, supra.

29. Persons seeking to assert claims based on Article XII, § 7 are not required to be individuals of 50% or more Hawaiian ancestry. Public Access Shoreline Hawaii, 79 Haw. 448-449.

30. Article XII, § 7 protects the customarily and traditionally exercised activities possessed by "descendants of native Hawaiians who inhabited the islands prior to 1778" conducted in furtherance of subsistence and cultural purposes, irrespective of the race of the practitioner. Public Access Shoreline Hawaii, 79 Haw. at 449.

31. Customary and traditional rights in Hawai`i do not derive from the race of the practitioner, but from native Hawaiians pre-existing sovereignty which was never extinguished by Hawai`i's inclusion within the territorial bounds of the United States. Public Access Shoreline Hawaii, 79 Haw. at 449.

32. It is undisputed that PDF members conduct traditionally and customarily exercised subsistence and cultural activities in WKOP and PFR. Accordingly, they have standing to assert rights based on Article XII, § 7, and H.R.S. §§ 1-1 and 7-1.

33. While Article XII, § 7 applies to persons of Hawaiian ancestry, there is nothing to indicate that the right is limited to native Hawaiians. For example, the legislative history establishes that persons who are married to Hawaiians and are engaged in traditional Hawaiian practices are protected as well. For example, Delegate Frenchy Desoto stated that:

These rights [under Article XII § 7] are rights. We have a different legal basis for rights--when I say "we" I mean the Hawaiian people. However, any right enjoyed by the native Hawaiian is also truly enjoyed by those who are non-Hawaiian. If you are fortunate enough to marry a Hawaiian, certainly you may follow her right down to the beach.

Debates in the Committee of the Whole on Hawaiian Affairs, II PROCEEDINGS OF THE CONSTITUTIONAL CONVENTION of 1978 at 436 (speech of Delegate Adelaide Desoto).

34. In addition, Delegate Calvin Ontai reaffirmed Delegate Desoto's remarks when he stated that:

A great portion of the people today, by design for one reason or another, married into the Hawaiian race, and as Delegate Desoto said, they can follow them wherever those rights go. The children can follow, also.

Debates in the Committee of the Whole on Hawaiian Affairs, II PROCEEDINGS OF THE CONSTITUTIONAL CONVENTION of 1978 at 437 (speech of Delegate Calvin Ontai).

35. In this case, PDF members include not only persons of Hawaiian ancestry, but non- Hawaiians related through marriage to Hawaiians.

36. Accordingly, non-Hawaiian PDF members married to Hawaiians have the same right to claim protection under Article XII, § 7, provided that the other requirements in this decision are met.

37. The reasonable exercise of ancient Hawaiian usage is entitled to protection under Article XII, § 7, and H.R.S. §§ 7-1 and 1-1. Public Access Shoreline Hawaii, 79 Haw. 442.

38. PDF members have proved, by a preponderance of the evidence, that they engage in traditional subsistence and cultural Hawaiian practices-access, hunting, and gathering, and that these activities have been conducted in the same manner in the Puna region since at least 1892.

39. Campbell Estate did not dispute that hunting and gathering is a traditional subsistence and cultural practice.

40. Campbell Estate did not dispute that PDF members are exercising these customary rights in a reasonable manner.

41. As persons exercising valid, constitutionally protected, customary rights in a reasonable manner, PDF members and other individuals are entitled to protection against unreasonable interference by Campbell's agents, officers, and employees.

42. The legislative history of Article XII, § 7, states that:

[Y]our Committee proposed this new section to provide the State with the power to protect these rights and to prevent any interference with the exercise of these rights.

Stand. Comm. Rep. No. 57, reprinted in 1 PROCEEDINGS OF THE CONSTITUTIONAL CONVENTION OF HAWAII OF 1978 at 639-640 (Emphasis supplied).

43. Since acquiring these lands in 1987, Campbell Estate, its sublessees, representatives, and agents have stopped and discouraged PDF members and other individuals from customarily and traditionally exercising subsistence and cultural activities on its lands.

44. The State is obligated to protect the reasonable exercise of customarily and traditionally exercised subsistence and cultural practices to the extent feasible. However, the State can permit development that interferes with such rights in certain circumstances. Public Access Shoreline Hawaii, 79 Haw. at 450, n. 43.

45. Campbell's land are not "fully developed" because True Geothermal had stopped exploration and development of geothermal energy on the Campbell property, which in any case was limited to less than 20 acres of the land.

46. Based on the specific circumstances of this case, Campbell Estate has not shown that PDF members activities have resulted, or will result in actual harm to their operations or property.

47. Based on the balancing standard used in § 1-1, the balance tips in favor of PDF and its members and against Campbell.

48. The regulatory powers of the State extend to all fee simple property in Hawaii, which allows the State not only to regulate the activities of native practitioners, but landowners as well. Public Access Shoreline Hawaii, 79 Haw. at 450.

49. This analysis is consistent with Article XII, § 7's legislative history:

Your Committee decided to add this new section to the Constitution in order to reaffirm, for descendants of native Hawaiians, rights customarily and traditionally exercised for subsistence, cultural and religious purposes. Aware and concerned about past and present actions by private landowners, large corporations, ranches, large estates, hotels, and government entities which preclude native Hawaiians from following subsistence practices traditionally used by their ancestors, your Committee proposed this new section to provide the State with the power to protect these rights and to prevent any interference with the exercise of these rights.

Stand. Comm. Rep. No. 57, reprinted in 1 PROCEEDINGS OF THE CONSTITUTIONAL CONVENTION OF HAWAII OF 1978 at 639-640 (emphasis added).

50. Thus, any scheme to regulate rights under Article XII, § 7 becomes a process by which both native rights and landowner actions are subject to reasonable protection and regulation. If landowner actions are not subject to regulation, the expressed legislative purpose of preventing landowner interference with the exercise of native rights cannot be accomplished.

51. The conduct of PDF members and other individuals in the exercise of traditional subsistence and cultural activities has been self-regulating, which is part of the asserted custom.

52. It is reasonable to bar PDF's members access to the developed portion of the land, except as reasonable access to the undeveloped portion to exercise their Article XII, § 7 rights.

CAMBELL ESTATE'S MOTION TO DISMISS

53. On August 10, 1994, Defendant Campbell Estate filed with the Court a motion to dismiss Plaintiff's complaint, to find Article XII, § 7 of the Hawaii Constitution unconstitutional, to deny Plaintiffs any relief or protections under Article XII, § 7, and to grant judgment as a matter of law in favor of Defendants. Plaintiffs filed a response thereto on August 18, 1994.

54. Defendants based their motion on several grounds: (a) violations of the First and Fourteenth Amendments to the United States Constitution, and Article I, § 4 of the Hawaii Constitution (establishment of religion); (b) violation of the equal protection clause of the Fourteenth Amendment of the United States Constitution and the equal protection clause of Article I, § 5 of the Hawaii Constitution; and (c) violation of the anti-nobility clause of Article I, §10 of the United States Constitution; and the privileges or immunities clause of Article I, § 20 of the Hawaii Constitution.

55. The Court finds that Campbell does not have the proper standing to raise the constitutional violations as a basis for the dismissal of this action.

56. The "alleged" injured class does not include Campbell itself, which can conduct whatever legal activities it wishes on its Wao Kele O Puna lands and thus has no need to seek protection of its rights under Art. XII, § 7. Campbell undoubtedly believes it is injured whenever any person exercises his customary and traditional rights on Campbell's Wao Kele O Puna lands without Campbell's consent, but the identity of those exercising such rights (Hawaiian vs. non-Hawaiian) is irrelevant to the alleged injury Campbell suffers.

57. Campbell has offered no evidence whatsoever to establish either that one or more of Campbell's beneficiaries are seeking access for purposes consistent with Hawaiian traditional, cultural, or religious practices, have been denied access to other ahupua`a for such purposes, or that one or more of Campbell Estate's beneficiaries are (or are not) "part of the class of non-Hawaiians who are not protected by § 7."

58. In sum, Campbell has presented no evidence of injury in any way related to the basis of its defense, that Art. XII, § 7, unconstitutionally discriminates between Hawaiians and non-Hawaiians. Campbell therefore lacks standing to litigate the issue of the alleged constitutional defect. See, *Nalielua v. State of Hawaii*, 795 F. Supp. 1009, 1012 (D. Haw.1990), *aff'd* (mem.) on other grounds, 940 F.2d 1535 (9th Cir. 1991).

59. The doctrine of third party standing does not aid Campbell here. *State v. O'Brien*, 5 Haw. App. 491, 494 (quoting *State v. Kaneakua*, 61 Haw. 136, 142-43 (1970)), *aff'd*, 68 Haw. 38 (1985). There is no evidence that Campbell represents non-Hawaiians who wish to engage in traditional subsistence, cultural, or religious practices in Wao Kele `O Puna.

60. Here, Campbell would be a singularly inappropriate representative to litigate the interests of non-Hawaiians who may seek to undertake "customary and traditional" activities at Wao Kele O Puna for their interests, because Campbell's interests in this litigation are adverse to all who would wish to enter Campbell's Wao Kele O Puna lands without Campbell's consent, whether Hawaiians or non-Hawaiians. Accordingly, this is not a case where "the relationship between the litigant and the third party [is] such that the former is fully, or very nearly, as effective a proponent of the right as the latter." *Singleton v. Wulff*, 428 U.S. 106, 115 (1976) (plurality opinion).

61. Accordingly, Campbell is not granted standing as a third party to argue the unconstitutionality of Art. XII, § 7, as a surrogate for absent non-Hawaiians.

62. Alternatively, even if Campbell had standing to assert the equal protection defenses it alleges, the claims raised by the Pele Defense Fund under Article XII, § 7 do not amount to invidious discrimination under the equal protection provisions of the federal and state constitutions.

63. As discussed by the Supreme Court, Article XII, § 7 rights are appurtenant rights and were unaffected by the land exchange in 1985. See, *Pele Defense Fund v. Paty*, 73 Haw. 578, 614 n.26 (1992). Accordingly, Campbell took title to the land in 1987 subject to the unique obligation to allow continued access by native Hawaiians for hunting and gathering in furtherance of the Hawaiian culture.

64. Furthermore, the rights that PDF members seek to exercise are based in Hawaiian usage and custom, having been in existence since time immemorial- before the Mahele of 1848, the overthrow of 1893, and the Admission of Hawaii into the Union in 1959. Article XII, § 7 (as well as H.R.S. § 1-1) merely acknowledge the existence of these rights. Even though Article XII, § 7 is limited on its face to persons of Hawaiian ancestry, none of Hawaii's case law interpreting Hawaiian usage and custom has limited the exercise of that right to native Hawaiians. See, *Kalipi v. Hawaiian Trust Co.*, 66 Haw. 1 (1982); *State v. Zimring*, 58 Haw. 106 (1977); *In re Ashford*, 50 Haw. 314 (1968); *In re Estate of Nakuapa*, 3 Haw. 342 (1872). Indeed, the Supreme Court in *Public Access Shoreline Hawaii v. Hawaii County Planning Commission*, 79 Haw. at 449, n. 41, left this issue unresolved. Accordingly, non-Hawaiians could have the same right as Hawaiians, irrespective of Article XII, § 7 if they could prove that their rights were based on custom and usage.

65. Thus, Article XII, § 7 does not violate equal protection because it does not attempt to reallocate or redistribute the rights, nor does it discriminate against non Hawaiians who can prove that they possess the same rights based on custom and usage. In any event, Campbell cannot claim that it is being discriminated against when it never proved that it possessed the right in the first place. Accordingly, there can be no equal protection violation. Similarly, there can be no violation of the "Anti- Nobility" clauses under the federal and state constitutions.

66. A judgment in favor of Plaintiff herein is not a taking of private property without compensation. This Court is bound by the pronouncement of the Hawaii Supreme Court on this subject in *Public Access Shoreline Hawaii*, 79 Haw. at 451-452. (Court's recognition of Hawaiian custom and usage -- "always" a part of the law of this State -- does not constitute a judicial taking).

67. The Court, after consideration of the motion and response thereto, hereby denies the defendant's motion to dismiss.

ORDER

68. An order permanently enjoining interference by Campbell Estate with the subsistence and cultural practices of traditional and customary practitioners on undeveloped WKOP land is consistent with the overall purpose of Article XII § 7, which is to protect these customary rights from interference from the landowner.

69. The Pele Defense Fund is entitled to entry of judgment in its favor against the Estate of James Campbell, including the Trustees under the Will and of the Estate of James Campbell, deceased, which shall include a permanent injunction against excluding the following persons from entering the undeveloped portions of the land and using the developed portion for reasonable access to the undeveloped portions, (the developed areas are defined on Exhibit B attached hereto), to perform customarily and traditionally exercised subsistence and cultural practices:

- (a) Hawaiian subsistence or cultural practitioners who are descendants of the inhabitants of the Hawaiian Islands prior to 1778;
- (b) Person or persons accompanying Hawaiian subsistence or cultural practitioners described in (a); or
- (c) Persons related by blood, marriage or adoption to Hawaiian subsistence or cultural practitioners described in (a).

70. Notwithstanding that the judgment will include a “permanent” injunction, the Estate of James Campbell and successor owners of the land, are not barred from and may seek to develop the undeveloped portions of the land consistent with applicable law, and PDF may oppose further development by lawful means.

Dated: Hilo, Hawaii, August 26, 202.


Riki May Amano
Judge of the above-entitled Court

APPROVED AS TO FORM:

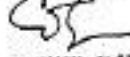

Gary G. Giffman
Robert E. Sami
Attorneys for Defendant
Trustees of Campbell Estate

APPENDIX F – FINAL JUDGEMENT (PDF v. CAMPBELL, CIVIL NO. 89-089)

FILED

ALAN MURAKAMI 2285
NATIVE HAWAIIAN LEGAL CORPORATION
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Honolulu, Hawaii 96813
Telephone: (808) 521-2302

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C. OHANA, CLERK
THIRD CIRCUIT COURT
STATE OF HAWAII

JAMES M. DOMBROSKI 3622
LAW OFFICES OF JAMES M. DOMBROSKI
P.O. Box 751027
Petahama, California 94975
Telephone: (707) 762-7807

STEVEN C. MOORE *Pro Hac Vice*
NATIVE AMERICAN RIGHTS FUND
1506 Broadway
Boulder, Colorado 80302
Telephone: (303) 447-8760
Attorneys for Plaintiff
PELE DEFENSE FUND

IN THE CIRCUIT COURT OF THE THIRD CIRCUIT
STATE OF HAWAII

PELE DEFENSE FUND,
Plaintiff,

vs.

THE ESTATE OF JAMES CAMPBELL,
DECEASED; W.H. MCVAY AND P.R.
CASSIDAY, in their fiduciary capacity as
Trustees under the Will and the Estate of
James Campbell,

Defendants.

CIVIL NO. 89-089 (Hilo)
(Declaratory Judgment/Injunction)

FINAL JUDGMENT,
EXHIBITS "A" AND "B"

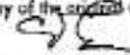
Trial Date: August 2, 1994
Judge: Hon. Riki May Amano

FINAL JUDGMENT

Pursuant to the Findings of Fact and Conclusions of Law entered herein on

AUG 20 2002, this court hereby enters JUDGMENT finally resolving all claims as to all

I hereby certify that this is a full, true and correct
copy of the original on file in this office.



Clerk, Third Circuit Court, State of Hawaii

parties in favor of Plaintiff Pele Defense Fund (hereinafter PDF) and against the Estate of James Campbell as follows:

1. The Estate of James Campbell, its Trustees and each of their respective agents, employees, officers, heirs, personal representatives, successors, assigns, and beneficiaries, including successors in interest to 27,785.89 acres of land situate in the Puna District of the County of Hawai'i, State of Hawai'i (hereafter, the "land"), as described in the attached Exhibit "A", are permanently enjoined from excluding the following persons from entering the undeveloped portions of the land and using the developed portion for reasonable access to the undeveloped portions, (the developed areas are defined on Exhibit B attached hereto), to perform customarily and traditionally exercised subsistence and cultural practices:

- (a) Hawaiian subsistence or cultural practitioners who are descendants of the inhabitants of the Hawaiian Islands prior to 1778;
- (b) Person or persons accompanying Hawaiian subsistence or cultural practitioners described in (a); or
- (c) Persons related by blood, marriage or adoption to Hawaiian subsistence or cultural practitioners described in (a).

2. For purposes of liability, all persons listed above are not invitees of the owner of the land.

3. Notwithstanding that this judgment includes a "permanent" injunction, the Estate of James Campbell and successor owners of the land, are not barred from and may seek to develop the undeveloped portions of the land consistent with applicable law; and PDF may oppose further development by lawful means.

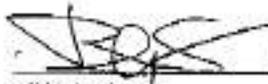
4. The owner of the land shall give PDF notice of any and all proposed future development prior to application for any state or county permits, or the initiation of any development-related activity that does not require such permits. On January 1 of each calendar year, PDF shall inform the owner of the land of the name(s) and address of its designated officer(s) for purposes of this notice.

5. PDF shall submit a monitoring plan consistent with this Judgment to the owner of the land within six (6) months after entry of this Judgment. If the parties are unable to agree on the terms of the monitoring plan, either one or both parties may request Court instructions.

6. The Court shall retain jurisdiction to enforce this Judgment and the permanent injunction. If enforcement is necessary, any party in violation of the terms herein may be subject to contempt of court and sanctions, including but not limited to the payment of costs and reasonable attorneys' fees.

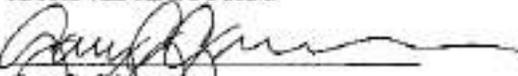
7. This judgment constitutes the final resolution of the all claims against all parties. There are no other outstanding claims or defenses which have been left unresolved.

DATED: Hilo, Hawaii, Aug 7, 2002.


Riki May Amago
Judge of the above-entitled Court



APPROVED AS TO FORM:


Gary G. Grimmer
Robert E. Strand
Attorneys for Defendant Trustees of the
Campbell Estate
1470125.2

Fele Defense Fund vs. the Estate of James Campbell, Deceased, et al
Civil No. 89-089 (Hilo), Declaratory Judgment/Injunction

19523-459



STATE OF HAWAII

SURVEY DIVISION

DEPT. OF ACCOUNTING AND GENERAL SERVICES
HONOLULU

December 13, 1953

30 153

PORTIONS OF GOVERNMENT LANDS OF
MAKUU, KAOHE, KAIHI, KEEHEA, KAPAAHI AND KANOAHI

PARTIAL A

Puna, Island of Hawaii, Hawaii

Beginning at the west corner of this parcel of land and on the south boundary of Land Court Application 1033, the coordinates of said point of beginning referred to Government Survey Triangulation Station "GLAA" being 43,769.67 feet South and 8228.31 feet East, thence running by astronomic measured clockwise from True South:-

- | | |
|-----------------|---|
| 1. 740° 05' 12" | 24,288.19 feet along Land Court Application 1033; |
| 2. 345° 23' 30" | 1348.57 feet along the remainder of Government Lands; |
| 3. 117° 06' | 1221.60 feet along the remainder of Government Lands; |
| 4. 130° 16' | 4682.10 feet along the remainder of Government Lands; |
| 5. 162° 03' | 1960.70 feet along the remainder of Government Lands; |
| 6. 190° 02' | 627.48 feet along the remainder of Government Lands; |
| 7. 316° 28' | 4581.80 feet along the remainder of Government Lands; |
| 8. 314° 43' | 766.40 feet along the remainder of Government Lands; |
| 9. 324° 11' | 735.30 feet along the remainder of Government Lands; |
| 10. 315° 31' | 1825.52 feet along the remainder of Government Lands; |
| 11. 60° 41' | 13.81 feet along the north side of 20-Foot Road; |

EXHIBIT "A"

19523 460

December 13, 1985

- 12. 238° 13' 14.79 feet along the west side of 20-Foot Road;
- 13. 60° 05' 12" 29,840.22 feet along Parcel B of Government Lands;
- 14. 240° 23' 16,220.18 feet along Parcel B of Government Lands to the point of beginning and comprising an AREA OF 9,011 ACRES.

SURVEY DIVISION
 DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
 STATE OF HAWAII

By: *Raymond S. Palamara*
 Raymond S. Palamara
 Lead Surveyor

21

Compiled from CSD 4777,
 CSD 10,637 and Govt.
 Survey Records.

10103785

19523 461



STATE OF HAWAII

SURVEY DIVISION

DEPT. OF ACCOUNTING AND GENERAL SERVICES

S.A.P. No. 20,316

December 13, 1983

PORTIONS OF GOVERNMENT LANDS OF
MAUI, KAUAI, HAWAII, KEEHA, KAPAHAU AND KANALI

PARCEL B

Puna, Island of Hawaii, Hawaii

Beginning at the west corner of this parcel of land and at an angle on the south boundary of Land Court Application 1053, the coordinates of said point of beginning referred to Government Survey Triangulation Station "DLAA" being 55,748.70 feet South and 21,094.90 feet West, thence running by azimuths measured clockwise from True South:-

1. 240° 05' 11" 16,000.00 feet along Land Court Application 1053;
2. 320° 23' 16,220.18 feet along Parcel A of Government Lands;
3. 240° 05' 12" 25,840.22 feet along Parcel A of Government Lands;
4. 328° 15' 2262.76 feet along the west side of the 20-Foot Road;
5. 340° 23' 19.76 feet along the west side of the 20-Foot Road;
6. 342° 31' 150.51 feet along the west side of the 20-Foot Road;
7. 337° 27' 356.17 feet along the west side of the 20-Foot Road;
8. 347° 14' 271.04 feet along the west side of the 20-Foot Road;
9. 348° 28' 331.85 feet along the west side of the 20-Foot Road;
10. 353° 51' 315.10 feet along the west side of the 20-Foot Road;
11. 358° 30' 3278.10 feet along the west side of the 20-Foot Road;

19523 462

December 13, 1983

20,314

- 12. 358° 59' 2138.77 feet along the west side of the 20-Foot Road;
- 13. 317° 38' 221.69 feet along the west side of the 20-Foot Road;
- 14. 315° 33' 287.92 feet along the west side of the 20-Foot Road;
- 15. 258° 17' 9.45 feet along the south side of the 20-Foot Road;
- 16. 353° 29' 6915.25 feet along Parcel C of Government Lands;
- 17. 94° 17' 1488.60 feet along Lots 3-B and 3-A of Upper Kaimo Homesteads;
- 18. 39° 38' 3534.10 feet along Lot 3-A of Upper Kaimo Homesteads, Grant 6371 to K. Kamahala, Grant 6330 to S. Kamahala and Grant 6328 to D. Kamahala;
- 19. 55° 04' 10,320.90 feet along Government Lands;
- 20. 55° 31' 30" 8863.30 feet along Grant 9175 to E. M. Melr. et al., Trustees under the Will and of the Estate of James Campbell, Deceased;
- 21. 148° 00' 4100.00 feet along S.P. 8030, L.C.No. 8559-B, Ap. 14 to William C. Lomallio;
- 22. 148° 00' 8158.00 feet along S.P. 8030, L.C.No. 8559-B, Ap. 14 to William C. Lomallio;
- 23. 126° 59' 25,105.38 feet along S.P. 8030, L.C.No. 8559-B, Ap. 14 to William C. Lomallio, to the point of beginning and containing an AREA OF 16,843.891 ACRES.

Excepting and reserving therefrom all existing trails within the above-described Parcel X.

SURVEY DIVISION
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
STATE OF HAWAII

By: Raymond S. Nakamura
Raymond S. Nakamura
Land Surveyor

DE

Compiled from CSP 18,647
and other Govt. Survey
Records.

19523 463



STATE OF HAWAII

SURVEY DIVISION

DEPT. OF ACCOUNTING AND GENERAL SERVICES

C.A.P. No. 20,317

December 13, 1963

PORTIONS OF GOVERNMENT LANDS OF
KAWAII, KEHENA AND KIRALA

PART C

Puna, Island of Hawaii, Hawaii

Beginning at the east corner of this parcel of land, on the south boundary of Royal Patent 4475, Land Patent 8199, Land Commission Award 7713, Apama 13 to V. Kananalu and at the north corner of Grant 7365 to J. K. Foa, the coordinates of said point of beginning referred to Government Survey Triangulation Station "TALU" being 115.60 feet South and 9325.70 feet West, thence running by azimuths measured clockwise from True South:-

1. 45° 00' 982.00 feet along Grant 7365 to J. K. Foa;
2. 85° 00' 652.00 feet along Grant 7365 to J. K. Foa;
3. 58° 45' 1050.00 feet along Grant 7365 to J. K. Foa;
4. 72° 30' 1005.00 feet along Grant 7547 to Wm. K. Kallihookala;
5. 45° 46' 1197.50 feet along Grant 7547 to Wm. K. Kallihookala;
6. 135° 00' 50.00 feet along the north side of 50-Foot Road;
7. 45° 46' 1064.16 feet along the west side of 50-Foot Road;
8. 16° 10' 2052.31 feet along the west side of 50-Foot Road;
9. 38° 34' 2329.67 feet along the west side of 50-Foot Road;
10. 322° 16' 1561.65 feet along the south side of 50-Foot Road;
11. 270° 00' 981.59 feet along the south side of 50-Foot Road;

19523 464

20,317

December 13, 1983

12. 316° 30' 1493.39 feet along the south side of 50-Foot Road to the northwest side of Upper Puna Road;
13. Thence along the northwest side of Upper Puna Road, the direct azimuth and distance being: 27° 43' 20" 4458.54 feet;
14. 53° 41' 15" 171.71 feet along the northwest side of Upper Puna Road;
15. Thence along the northwest side of Upper Puna Road on a curve to the right with a radius of 130.00 feet, the chord azimuth and distance being: 79° 01' 15" 118.82 feet;
16. 107° 21' 15" 518.59 feet along the northwest side of Upper Puna Road;
17. Thence along the northwest side of Upper Puna Road on a curve to the left with a radius of 250.00 feet, the chord azimuth and distance being: 77° 01' 15" 213.94 feet;
18. 51° 41' 15" 286.74 feet along the northwest side of Upper Puna Road;
19. Thence along the northwest side of Upper Puna Road on a curve to the right with a radius of 475.00 feet, the chord azimuth and distance being: 55° 01' 15" 55.24 feet;
20. 58° 21' 15" 354.39 feet along the northwest side of Upper Puna Road;
21. Thence along the northwest side of Upper Puna Road on a curve to the left with a radius of 450.00 feet, the chord azimuth and distance being: 50° 46' 15" 138.77 feet;
22. 133° 30' 1258.81 feet along Grant 7731 to L. E. Swain;
23. 117° 30' 2467.50 feet along Grant 7293 to Louise Swain, Grant 7478 to L. E. Mairdell and the northeast end of 50-Foot Road;
24. 127° 35' 2173.00 feet along Lot 111-B of Upper Kaimo Homestead;
25. 172° 29' 6925.20 feet along Parcel B of Government Lands;
26. 258° 17' 179.94 feet along the south side of 10-Foot Road;
27. 266° 12' 624.60 feet along the south side of 10-Foot Road;

19523 465

December 11, 1985

28. 195° 08'	387.80 feet along the south side of 20-Foot Road;
29. 234° 11'	783.69 feet along the south side of 20-Foot Road;
30. 234° 05'	1702.89 feet along the south side of 20-Foot Road;
31. 254° 48'	883.02 feet along the south side of 20-Foot Road;
32. 242° 35'	876.64 feet along the south side of 20-Foot Road;
33. 245° 28'	581.05 feet along the south side of 20-Foot Road;
34. 243° 17'	539.85 feet along the south side of 20-Foot Road;
35. 248° 20'	20.81 feet along the south side of 20-Foot Road;
36. 240° 31'	1658.87 feet along the south side of 20-Foot Road;
37. 240° 41'	707.62 feet along the south side of 20-Foot Road;
38. 289° 05'	1550.70 feet along R.P. 4475, R.P. 6863, L.P. 8200, L.C.No. 7713, Ap. 14 to V. Kamehale;
39. 290° 12'	730.00 feet along R.P. 4475, R.P. 6863, L.P. 8200, L.C.No. 7713, Ap. 14 to V. Kamehale;
40. 286° 00'	2750.00 feet along R.P. 4475, L.P. 8299, L.C.No. 7713, Ap. 13 to V. Kamehale to the point of beginning and containing an AREA OF 1330 ACRES, MORE OR LESS.

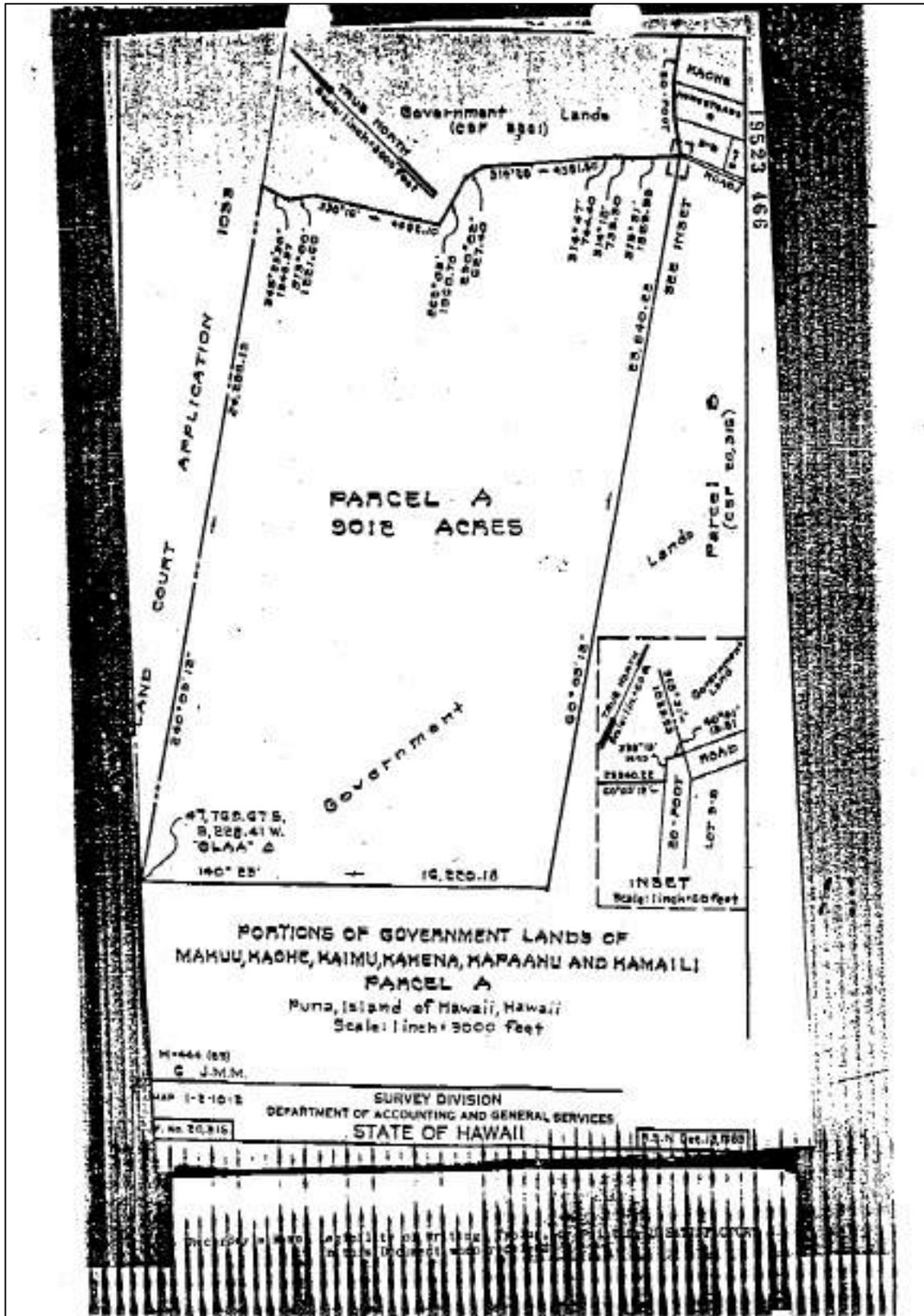
Excepting and reserving therefrom all existing trails within the above-described Parcel 2.

SURVEY DIVISION
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
STATE OF HAWAII

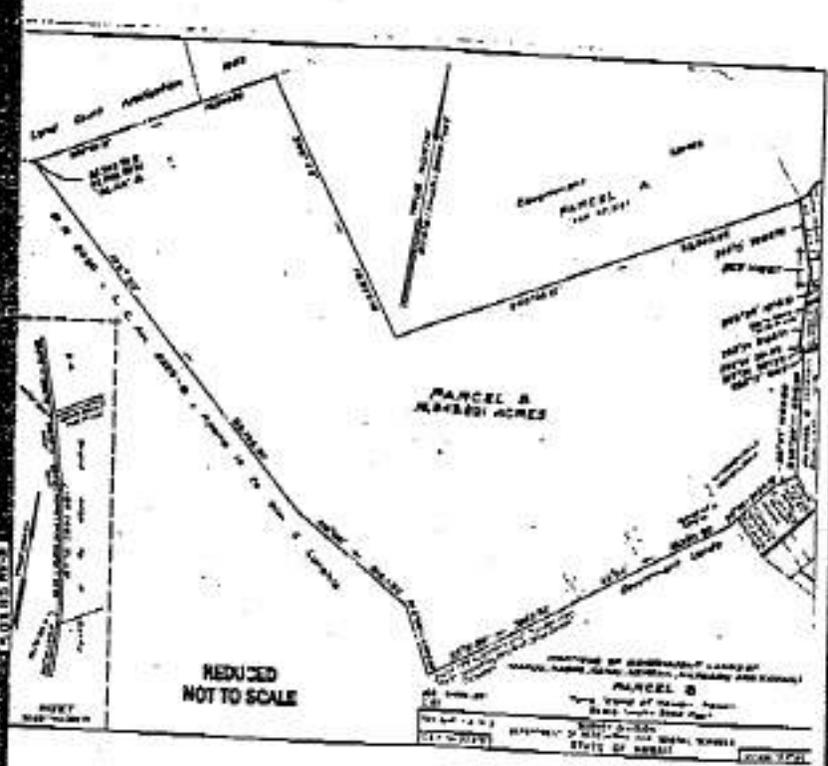
By: Raymond S. Waiheala
Raymond S. Waiheala
Land-Surveyor

Compiled from CSF 8446
and Govt. Survey Records.

70

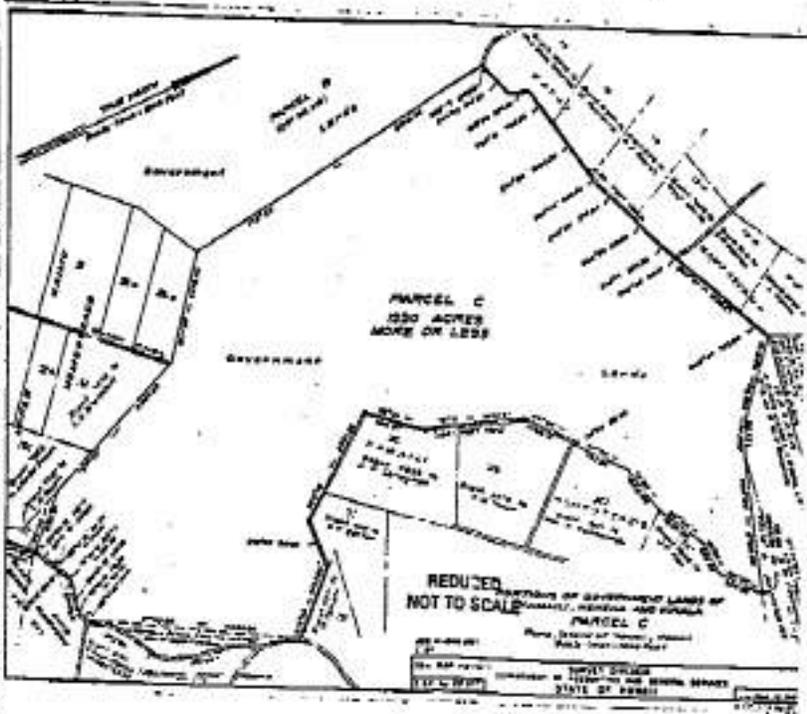


19523 467



Recorder's Name, Legibility of Writing, Title, or other things UNRELIABLE
in this document when received.

19523 468



Recorder's Memo: Legibility of Printing Typeset in this Document was checked

EXHIBIT "B"

DEVELOPED AREAS

The developed areas as of January 1, 2001, are the access road, geothermal drill sites and areas cleared for geothermal drill sites.

APPENDIX G – PELE DEFENSE FUND DRAFT MANAGEMENT PLAN FOR WKOP



History

- 1893 – Soon after the overthrow of the Hawaiian monarchy, the Republic of Hawai'i asserts ownership of all crown and kingdom lands, including Wao Kele o Puna
- 1898 – Republic “cedes” crown and kingdom lands (except for those alienated during their control) to the Federal Government.
- 1911 – Territory of Hawai'i sets aside some of Wao Kele o Puna as a Forest Reserve.
- 1981 – The state of Hawai'i sets aside part of the land as a Natural Area Reserve, the highest level of protection of state lands.
- 1986 – The Hawai'i Board of Land and Natural Resources (BLNR) and the state Legislature approve of swapping Wao Kele o Puna for a nearby parcel to enable geothermal energy development at Wao Kele o Puna
- 2005 – DLNR, the Hawai'i Forest Stewardship Advisory Committee, and the US Forest Service work to revise the Federal Forest Legacy Program in the islands, making conservation of forest lands throughout the state (including Wao Kele o Puna) possible
- Feb. 2, 2005 – Pele Defense Fund contacts the Trust for Public Land (TPL), a national land conservation organization, and asks for help to permanently protect Wao Kele o Puna
- May 13, 2005 – TPL negotiates with the Estate of James Campbell and signs a purchase option agreement, safeguarding the property until all elements of the transaction were in place for its purchase and permanent public protection.

History Continued...

- Sept. 9, 2005 - The Board of Land and Natural Resources (BLNR) unanimously approved supporting the transactions.
- August 26, 2005 - The Board of Trustees of the Office of Hawaiian Affairs unanimously committed to providing the necessary gap funding towards the purchase, as well as ongoing funding for planning and management.
- Spring 2006 - Implementing a Capital Improvement Project request of Sen. Russel Kokubun, the Legislature approves and Governor Lingle signs appropriations of \$2.3 million dollars to plug and abandon the well at Wao Kele o Puna.
- June 30, 2006 - OHA and DLNR enter into a Memorandum of Agreement to share management of the property over the next ten years.
- July 14, 2006 - TPL purchases and transfers the property to OHA and the transaction closes. Ahead plugging and abandonment of the well site, designation of the area as a forest reserve, and planning for future protection and appropriate use of the property.
- August 27, 2007 - OHA receives the transfer of lands and title from the Trust for Public Lands through the federal Forest Legacy Program.

Native plants

- **Identify and take inventory of:**
 - native plants
 - edible plants
 - plants and trees that could be used for building material
 - plants that could be used for medicinal purposes
 - plants that would be used for ceremonial/religious purposes
- **Propagate native plants**
- **Create a map overlay of Native Hawaiian plants with their percentages**
- **Research the history and background information (pollination processes etc.) of Native Hawaiian plants**
- **Research plants from other parts of the forest or other forests on the island that can be brought in to Wao Kele o Puna**
- **Create a mala (Native Hawaiian garden with edible plants e.g. kalo, mai'a, uala, ulu, ipu, niu, kukui, etc.)**
- **Will update data of the forest from the county, state, feds, & UH**
- **Language of recognizing unique items (rare protected endangered plants)**



Fauna

➤ **Identify and take inventory of:**

-Native wildlife:

-*Native birds, insects, moths, caterpillars, snails, spiders, lo'ees, reptiles, and bats*

-Invasive Species:

-*Pigs, cows, turkeys, and chickens*

-Exotic species:

-*Birds reptile, toads, frogs, lizards*

➤ **Impacts**

➤ **Eradication plans e.g. (hunters, volunteers)**



Lava Tubes

- **Locate and map cave systems that enter and run through Wao Kele o Puna**
- **Identify species from cave systems**
- **Update burial maps**
- **Locate cracks and crevices for safety**
- **Create protection plans for the above**
- **Map lava flows**

Wai – Water

- Provide data of Wao Kele o Puna's contribution to the aquifer
- Research historical rain fall readings and patterns
- Research water flow to the ocean
- Take inventory of shore line species (limu & fish) and how water flow affects their existence
- Consider watershed idea for county, state, and federal
- Consider new ideas of protection plans and enforcement support

Hawaiian Use

- Gathering
 - Liko, flowers and la'au
 - Designate areas for safe picking
 - Designate area for food planting
 - Designate area for food retreat shelters (halau's)
- Planting
 - Designate areas for new plantings
 - Propagation of native plants
- Offerings
 - Kuahu
- Cultural Construction
 - Building of hula pa
 - Consider building designs
 - Use building materials from the forest
 - Power source for utilities (solar)
 - Roads and maintenance*



Hawaiian use continued...



- Education
 - Teachings and workshops on forest caring and gathering
 - Students volunteer projects
 - Having cultural practitioner/experts, teachings on la'au and also planting of hula implements
- Hunting
 - Consider traps
- Hula
 - Hula retreats and ceremonies

Surrounding Neighbors

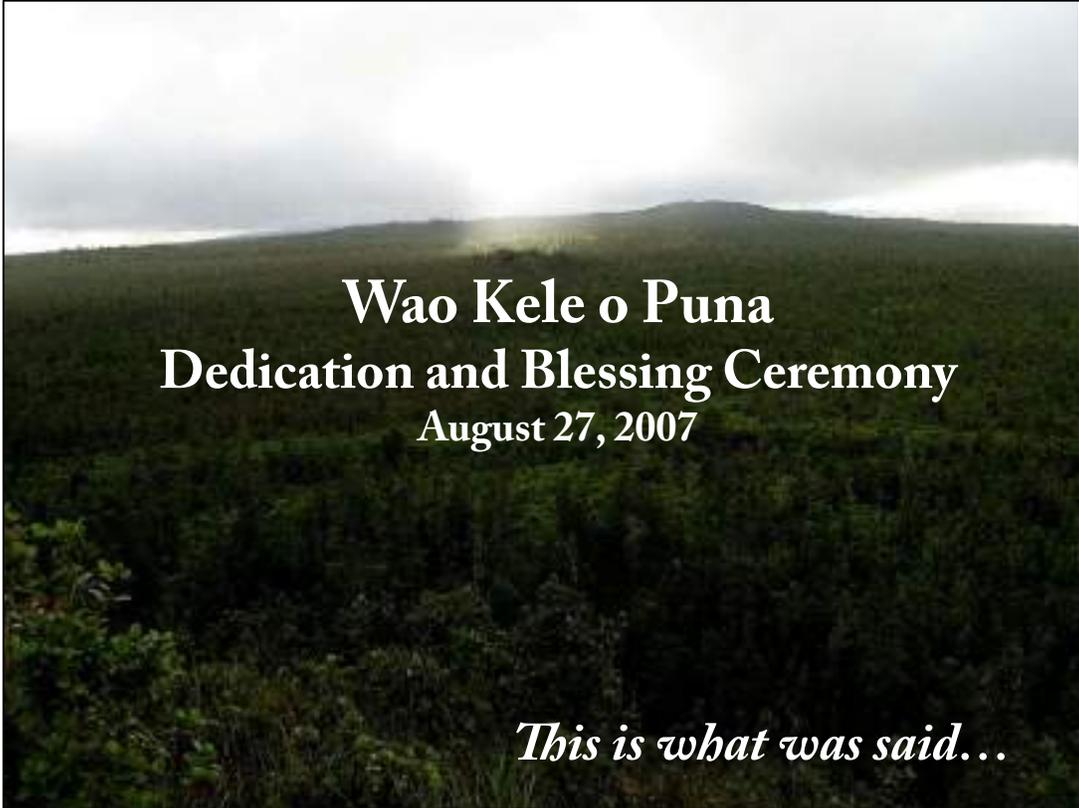
- A) **Work with subdivisions bordering Wao Kele o Puna to Kalapana**
Fern Acres, Hawaiian Acres, Ka'ohe Homestead...
 1. Attend subdivision association meetings
 2. Meet with Native Hawaiians in the subdivision associations that would like to become members of Pele Defense Fund
 3. Obtain possible history of all previous land owners of all subdivisions surrounding Wao Kele o Puna
 4. Gather information of past/present dumping areas that exist from surrounding subdivisions
 5. Gather reports from subdivisions who might have findings of burials, cultural sites and endangered flora and fauna
 6. Inform subdivisions on Hawaiian issues, gathering rights, trails and a Hawaiian style treatment
 7. Create informational handouts on Hawaiian rights, Federal and State, as well as special species protection laws
 8. Work with the community to create Fauna and Flora protection programs and remove invasive species
- B) Notify police and authorities of Pele Defense Fund's partnership with OHA in Wao Kele o Puna
- C) Notify public of access trails and gathering rights
- D) Create a hotline number for:
 - Fire
 - Native plants
 - Dumping of alien species, exotic plants, cars and rubbish
 - Removals

Enforcement & Protection of the Forest

- County police
- Federal (fish & game)
- State (Department of Land and Natural Resources)
- Private Security (Volunteers/ Personnel)
- Create a list of Laws (Federal, State & County - statutes and laws and fines)
- Post proper signage - notice of ownership, keep out etc...
- Prevent private tours of Wao Kele o Puna
- Gates (none)
- Hire a Grounds keeper to watch over the site
- Sterilize all plants coming into Wao Kele o Puna
- **Prevent native plants from being commercialized**

Funding Opportunities

- Federal
- State
- County
- Private
- Trust scholarships
- Protection grants
- Rare plants and trees
- Rare species – insects, animals, birds
- Programs, religious ceremonies, activities



**Wao Kele o Puna
Dedication and Blessing Ceremony
August 27, 2007**

This is what was said...



***Linda Lingle,
Governor***

- The real accolades have to go back to the community who never gave up their vision for this place
- This place should not be abused but be used in a certain way



Daniel Inouye
Senator

-In 1990, when the state government approved the geothermal drilling on this parcel of land, as a representative of the federal government I joined in the approval. But then the project failed - **Thank God!** And I realized that I'd made a bad mistake, that this should be kept pristine, this should be for the people forever. And so when the opportunity came to assist in the provision of funds I was very happy to do so - I hope all of you will forgive me.



Neil Abercrombie,
Congressman

-Those of us who have had the legislative responsibility, recognize that we have a further obligation to make certain that all of the assets of the Hawaiians are put back in Hawaiian hands.

-This is our attempt to try to find a way to turn over to the Hawaiians the opportunity to create the sovereign entity that will carry our Hawaiian values into the future.

-So it turns out despite our best intentions and best efforts that the Office of Hawaiian Affairs is now the interim step towards the creation, not the final step.

-And so this ritual today could not be more important...this ritual today is our living proof to those who come after us that we recognize the Hawaiians must cover their true destiny by themselves for themselves for all of us.



*Palikapu Dedman,
Founder, Pele Defense Fund*

- We have an obligation as Hawaiians to carry on traditions and carry on our Hawaiianess for thousands of years.
- It's a seed bank for our future children to grow with the customs and traditions
- A place to stay Hawaiian in.
- I hope this turns into a retreat for kanaka children to come into this area and go live the forest use it and learn about it.



*Haunani Apoliona,
Chairperson , OHA Trustee, At-large*

- Wao Kele o Puna is the first ceded land since the overthrow of the Hawaiian Kingdom in 1893, a hundred fourteen years ago, to be owned by a representative entity of the Hawaiian people.
- Maka'u ka hana hewa i ka uka o Puna*
 "Wrong doing in the upland of Puna brings the wrath of Pele"
- Indeed Puna is a land of contrast and convergence; present is the fragrance of maile and the stinging scent of sulphur; the vibrant green of the forest and the fiery red of lava of Pele's presence. Here at Wao Kele o Puna the quiet forest, once drowned by the drilling of a geothermal well, once again echoes the whispers of the breezes and the pulses of the heartbeat.

The Vision...

Landscape Design by
Hekili Kealaka'iokekai Lani









